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**Department of Defense
Fiscal Year (FY) 2020 Budget Estimates**

March 2019



Navy

Justification Book Volume 2 of 5

Other Procurement, Navy

BA 02

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The estimated cost of this report for the Department of the Navy (DON) is \$55,377.

The estimated total cost for supporting the DON budget justification material is approximately \$1,803,116 for the 2019 fiscal year. This includes \$81,351 in supplies and \$1,721,765 in labor.

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Department of Defense Appropriations Act, 2020

Other Procurement, Navy

For procurement, production, and modernization of support equipment and materials not otherwise provided for, Navy ordnance (except ordnance for new aircraft, new ships, and ships authorized for conversion); the purchase of passenger motor vehicles for replacement only; expansion of public and private plants, including the land necessary therefore, and such lands and interests therein, may be acquired, and construction prosecuted thereon prior to approval of title; and procurement and installation of equipment, appliances, and machine tools in public and private plants; reserve plant and Government and contractor-owned equipment layaway, \$10,010,556,000, to remain available for obligation until September 30, 2022.

FY 2020 Overseas Contingency Operations funding can be separated into the following categories:

- OCO for Direct War Costs (\$38,091,000): Direct War costs are those combat or direct combat support costs that will not continue to be expended once combat operations end at major contingency locations.
- OCO for Enduring Requirements (\$319,509,000): OCO for Enduring Requirements are enduring in-theater and in-CONUS costs that will likely remain after combat operations cease, and have previously been funded in OCO.
- OCO for Base Requirements (\$0): OCO for Base Requirements is OCO funding for base budget requirements in support of the National Defense Strategy. The Budget requests these funds in OCO to comply with the base budget defense caps included in the Budget Control Act of 2011.

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Department of the Navy
FY 2020 President's Budget
Exhibit P-1 FY 2020 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation -----	FY 2018 (Base + OCO) -----	FY 2019 Base Enacted -----	FY 2019 OCO Enacted -----	FY 2019 Total Enacted -----
Other Procurement, Navy	8,258,598	9,097,138	181,173	9,278,311
Total Department of the Navy	8,258,598	9,097,138	181,173	9,278,311

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Department of the Navy
FY 2020 President's Budget
Exhibit P-1 FY 2020 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation -----	FY 2020 Base -----	FY 2020 OCO for Base Requirements -----	FY 2020 OCO for Direct War and Enduring Costs -----	FY 2020 Total OCO -----
Other Procurement, Navy	9,652,956		357,600	357,600
Total Department of the Navy	9,652,956		357,600	357,600

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Department of the Navy
FY 2020 President's Budget
Exhibit P-1 FY 2020 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation -----	FY 2020 Total (Base + OCO) -----
Other Procurement, Navy	10,010,556
Total Department of the Navy	10,010,556

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Department of the Navy
FY 2020 President's Budget
Exhibit P-1 FY 2020 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: Other Procurement, Navy

Budget Activity -----	FY 2018 (Base + OCO) -----	FY 2019 Base Enacted -----	FY 2019 OCO Enacted -----	FY 2019 Total Enacted -----
01. Ships Support Equipment	2,711,934	3,039,782	28,260	3,068,042
02. Communications & Electronics Equip	2,740,513	3,059,558	62,150	3,121,708
03. Aviation Support Equipment	459,749	516,566	21,156	537,722
04. Ordnance Support Equipment	978,185	997,917	27,580	1,025,497
05. Civil Engineering Support Equip	107,860	111,224	8,638	119,862
06. Supply Support Equipment	511,217	603,132	500	603,632
07. Personnel & Command Support Equip	461,687	461,384	32,889	494,273
08. Spares and Repair Parts	287,453	307,575		307,575
Total Other Procurement, Navy	8,258,598	9,097,138	181,173	9,278,311

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Department of the Navy
FY 2020 President's Budget
Exhibit P-1 FY 2020 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: Other Procurement, Navy

Budget Activity -----	FY 2020 Base -----	FY 2020 OCO for Base Requirements -----	FY 2020 OCO for Direct War and Enduring Costs -----	FY 2020 Total OCO -----
01. Ships Support Equipment	2,797,292		5,800	5,800
02. Communications & Electronics Equip	3,255,859		310,503	310,503
03. Aviation Support Equipment	640,625		16,830	16,830
04. Ordnance Support Equipment	1,133,944		15,307	15,307
05. Civil Engineering Support Equip	170,574		1,366	1,366
06. Supply Support Equipment	676,793		610	610
07. Personnel & Command Support Equip	602,261		7,184	7,184
08. Spares and Repair Parts	375,608			
Total Other Procurement, Navy	9,652,956		357,600	357,600

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Department of the Navy
FY 2020 President's Budget
Exhibit P-1 FY 2020 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: Other Procurement, Navy

Budget Activity -----	FY 2020 Total (Base + OCO) -----
01. Ships Support Equipment	2,803,092
02. Communications & Electronics Equip	3,566,362
03. Aviation Support Equipment	657,455
04. Ordnance Support Equipment	1,149,251
05. Civil Engineering Support Equip	171,940
06. Supply Support Equipment	677,403
07. Personnel & Command Support Equip	609,445
08. Spares and Repair Parts	375,608
Total Other Procurement, Navy	10,010,556

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Department of the Navy
FY 2020 President's Budget
Exhibit P-1 FY 2020 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 (Base + OCO) Quantity Cost	FY 2019 Base Enacted Quantity Cost	FY 2019 OCO Enacted Quantity Cost	FY 2019 Total Enacted Quantity Cost	S e c
----	-----	-----	-----	-----	-----	-----	-
Budget Activity 01: Ships Support Equipment							

Ship Propulsion Equipment							
1	Surface Power Equipment	A	41,910	19,196		19,196	U
Generators							
2	Surface Combatant HM&E	A	26,651	23,495		23,495	U
Navigation Equipment							
3	Other Navigation Equipment	A	62,427	60,830		60,830	U
Other Shipboard Equipment							
4	Sub Periscope, Imaging and Supt Equip Prog	A	172,740	176,621		176,621	U
5	DDG Mod	A	592,644	462,908		462,908	U
6	Firefighting Equipment	A	15,887	28,143		28,143	U
7	Command and Control Switchboard	A	2,240	2,248		2,248	U
8	LHA/LHD Midlife	A	4,767	32,353		32,353	U
9	Pollution Control Equipment	B	15,564	20,883		20,883	U
10	Submarine Support Equipment	A	27,190	37,155		37,155	U
11	Virginia Class Support Equipment	A	46,610	66,328		66,328	U
12	LCS Class Support Equipment		43,407	47,241		47,241	U
13	Submarine Batteries		24,394	24,460		24,460	U
14	LPD Class Support Equipment		52,114	62,026		62,026	U

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Department of the Navy
FY 2020 President's Budget
Exhibit P-1 FY 2020 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2020 Base Quantity	Cost	FY 2020 OCO for Base Requirements Quantity	Cost	FY 2020 OCO for Direct War and Enduring Costs Quantity	Cost	FY 2020 Total OCO Quantity	Cost	S e c
Budget Activity 01: Ships Support Equipment											
Ship Propulsion Equipment											
1	Surface Power Equipment	A		14,490							U
Generators											
2	Surface Combatant HM&E	A		31,583							U
Navigation Equipment											
3	Other Navigation Equipment	A		77,404							U
Other Shipboard Equipment											
4	Sub Periscope, Imaging and Supt Equip Prog	A		160,803							U
5	DDG Mod	A		566,140							U
6	Firefighting Equipment	A		18,223							U
7	Command and Control Switchboard	A		2,086							U
8	LHA/LHD Midlife	A		95,651							U
9	Pollution Control Equipment	B		23,910							U
10	Submarine Support Equipment	A		44,895							U
11	Virginia Class Support Equipment	A		28,465							U
12	LCS Class Support Equipment			19,426							U
13	Submarine Batteries			26,290							U
14	LPD Class Support Equipment			46,945							U

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Department of the Navy
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Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2020 Total (Base + OCO) Quantity	Cost	S e c
----	-----	-----	-----	-----	-----
Budget Activity 01: Ships Support Equipment					

Ship Propulsion Equipment					
1	Surface Power Equipment	A		14,490	U
Generators					
2	Surface Combatant HM&E	A		31,583	U
Navigation Equipment					
3	Other Navigation Equipment	A		77,404	U
Other Shipboard Equipment					
4	Sub Periscope, Imaging and Supt Equip Prog	A		160,803	U
5	DDG Mod	A		566,140	U
6	Firefighting Equipment	A		18,223	U
7	Command and Control Switchboard	A		2,086	U
8	LHA/LHD Midlife	A		95,651	U
9	Pollution Control Equipment	B		23,910	U
10	Submarine Support Equipment	A		44,895	U
11	Virginia Class Support Equipment	A		28,465	U
12	LCS Class Support Equipment			19,426	U
13	Submarine Batteries			26,290	U
14	LPD Class Support Equipment			46,945	U

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(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 (Base + OCO) Quantity Cost	FY 2019 Base Enacted Quantity Cost	FY 2019 OCO Enacted Quantity Cost	FY 2019 Total Enacted Quantity Cost	S e c
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15	DDG 1000 Class Support Equipment	A		57,700		57,700	U
16	Strategic Platform Support Equip	A	14,726	22,254		22,254	U
17	DSSP Equipment	A	4,178	3,629		3,629	U
18	CG Modernization	A	299,088	268,509		268,509	U
19	LCAC	A	5,507	3,709		3,709	U
20	Underwater EOD Programs		68,270	73,000	9,200	82,200	U
21	Items Less Than \$5 Million	A	92,451	123,685		123,685	U
22	Chemical Warfare Detectors	A	2,656	2,966		2,966	U
23	Submarine Life Support System	A	4,882	6,924		6,924	U
	Reactor Plant Equipment						
24	Reactor Power Units	A		346,325		346,325	U
25	Reactor Components	A	534,468	497,063		497,063	U
	Ocean Engineering						
26	Diving and Salvage Equipment	A	10,619	10,706		10,706	U
	Small Boats						
27	Standard Boats	A	61,789	49,771	19,060	68,831	U
	Production Facilities Equipment						
28	Operating Forces Ipe	A	179,662	297,181		297,181	U
	Other Ship Support						
29	LCS Common Mission Modules Equipment		18,760	33,237		33,237	U

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(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2020 Base Quantity	Cost	FY 2020 OCO for Base Requirements Quantity	Cost	FY 2020 OCO for Direct War and Enduring Costs Quantity	Cost	FY 2020 Total OCO Quantity	Cost	S e c
----	-----	-----	-----	----	-----	----	-----	----	-----	----	-
15	DDG 1000 Class Support Equipment	A		9,930							U
16	Strategic Platform Support Equip	A		14,331							U
17	DSSP Equipment	A		2,909							U
18	CG Modernization	A		193,990							U
19	LCAC	A		3,392							U
20	Underwater EOD Programs			71,240			5,800		5,800		U
21	Items Less Than \$5 Million	A		102,543							U
22	Chemical Warfare Detectors	A		2,961							U
23	Submarine Life Support System	A		6,635							U
	Reactor Plant Equipment										
24	Reactor Power Units	A		5,340							U
25	Reactor Components	A		465,726							U
	Ocean Engineering										
26	Diving and Salvage Equipment	A		11,854							U
	Small Boats										
27	Standard Boats	A		79,102							U
	Production Facilities Equipment										
28	Operating Forces Ipe	A		202,238							U
	Other Ship Support										
29	LCS Common Mission Modules Equipment			51,553							U

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Department of the Navy
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(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2020 Total (Base + OCO) Quantity	Cost	S e c
----	-----	-----	-----	-----	-----
15	DDG 1000 Class Support Equipment	A		9,930	U
16	Strategic Platform Support Equip	A		14,331	U
17	DSSP Equipment	A		2,909	U
18	CG Modernization	A		193,990	U
19	LCAC	A		3,392	U
20	Underwater EOD Programs			77,040	U
21	Items Less Than \$5 Million	A		102,543	U
22	Chemical Warfare Detectors	A		2,961	U
23	Submarine Life Support System	A		6,635	U
	Reactor Plant Equipment				
24	Reactor Power Units	A		5,340	U
25	Reactor Components	A		465,726	U
	Ocean Engineering				
26	Diving and Salvage Equipment	A		11,854	U
	Small Boats				
27	Standard Boats	A		79,102	U
	Production Facilities Equipment				
28	Operating Forces Ipe	A		202,238	U
	Other Ship Support				
29	LCS Common Mission Modules Equipment			51,553	U

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Department of the Navy
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Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 (Base + OCO) Quantity Cost	FY 2019 Base Enacted Quantity Cost	FY 2019 OCO Enacted Quantity Cost	FY 2019 Total Enacted Quantity Cost	S e c
----	-----	-----	-----	-----	-----	-----	-
30	LCS MCM Mission Modules		45,146	98,901		98,901	U
31	LCS ASW Mission Modules						U
32	LCS SUW Mission Modules		20,925	13,025		13,025	U
33	LCS In-Service Modernization	A	139,726	62,526		62,526	U
34	Small & Medium UUV	A					U
	Logistic Support						
35	LSD Midlife & Modernization		80,536	4,784		4,784	U
	Total Ships Support Equipment		2,711,934	3,039,782	28,260	3,068,042	
	Budget Activity 02: Communications & Electronics Equip						
	Ship Sonars						
36	SPQ-9B Radar	A	18,993	19,179		19,179	U
37	AN/SQQ-89 Surf ASW Combat System	A	100,222	114,344		114,344	U
38	SSN Acoustic Equipment	A	354,253	328,658		328,658	U
39	Undersea Warfare Support Equipment	A	13,653	10,134		10,134	U
	ASW Electronic Equipment						
40	Submarine Acoustic Warfare System	A	21,449	21,615		21,615	U
41	SSTD	A	12,867	4,777		4,777	U
42	Fixed Surveillance System	A	330,102	237,780	56,950	294,730	U
43	SURTASS	A	36,580	57,872		57,872	U

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Department of the Navy
FY 2020 President's Budget
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Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2020 Base Quantity	FY 2020 Base Cost	FY 2020 OCO for Base Requirements Quantity	FY 2020 OCO for Base Requirements Cost	FY 2020 OCO for Direct War and Enduring Costs Quantity	FY 2020 OCO for Direct War and Enduring Costs Cost	FY 2020 Total OCO Quantity	FY 2020 Total OCO Cost	S e c
30	LCS MCM Mission Modules			197,129							U
31	LCS ASW Mission Modules			27,754							U
32	LCS SUW Mission Modules			26,566							U
33	LCS In-Service Modernization	A		84,972							U
34	Small & Medium UUV	A		40,547							U
	Logistic Support										
35	LSD Midlife & Modernization			40,269							U
	Total Ships Support Equipment			2,797,292				5,800		5,800	
Budget Activity 02: Communications & Electronics Equip											
Ship Sonars											
36	SPQ-9B Radar	A		26,195							U
37	AN/SQQ-89 Surf ASW Combat System	A		125,237							U
38	SSN Acoustic Equipment	A		366,968							U
39	Undersea Warfare Support Equipment	A		8,967							U
ASW Electronic Equipment											
40	Submarine Acoustic Warfare System	A		23,545							U
41	SSTD	A		12,439							U
42	Fixed Surveillance System	A		128,441			310,503		310,503		U
43	SURTASS	A		21,923							U

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Department of the Navy
FY 2020 President's Budget
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Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2020 Total (Base + OCO) Quantity	Cost	S e c
----	-----	-----	-----	-----	-----
30	LCS MCM Mission Modules			197,129	U
31	LCS ASW Mission Modules			27,754	U
32	LCS SUW Mission Modules			26,566	U
33	LCS In-Service Modernization	A		84,972	U
34	Small & Medium UUV	A		40,547	U
	Logistic Support				
35	LSD Midlife & Modernization			40,269	U

	Total Ships Support Equipment			2,803,092	
Budget Activity 02: Communications & Electronics Equip					

	Ship Sonars				
36	SPQ-9B Radar	A		26,195	U
37	AN/SQQ-89 Surf ASW Combat System	A		125,237	U
38	SSN Acoustic Equipment	A		366,968	U
39	Undersea Warfare Support Equipment	A		8,967	U
	ASW Electronic Equipment				
40	Submarine Acoustic Warfare System	A		23,545	U
41	SSTD	A		12,439	U
42	Fixed Surveillance System	A		438,944	U
43	SURTASS	A		21,923	U

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Department of the Navy
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Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 (Base + OCO) Quantity Cost	FY 2019 Base Enacted Quantity Cost	FY 2019 OCO Enacted Quantity Cost	FY 2019 Total Enacted Quantity Cost	S e c
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	Electronic Warfare Equipment						
44	AN/SLQ-32	A	233,237	366,147		366,147	U
	Reconnaissance Equipment						
45	Shipboard IW Exploit	A	216,615	218,103		218,103	U
46	Automated Identification System (AIS)		4,592	4,028		4,028	U
	Other Ship Electronic Equipment						
47	Cooperative Engagement Capability	B	23,891	39,076		39,076	U
48	Naval Tactical Command Support System (NTCSS)	A	10,570	10,991		10,991	U
49	ATDLS	A	34,873	30,085		30,085	U
50	Navy Command and Control System (NCCS)		5,158	3,769		3,769	U
51	Minesweeping System Replacement	A	57,343	32,367		32,367	U
52	Shallow Water MCM	B	8,796	8,616		8,616	U
53	Navstar GPS Receivers (SPACE)	A	15,923	10,703		10,703	U
54	American Forces Radio and TV Service	A	2,730	2,626		2,626	U
55	Strategic Platform Support Equip	A	6,889	9,467		9,467	U
	Aviation Electronic Equipment						
56	Ashore ATC Equipment	A	77,218	70,849		70,849	U
57	Afloat ATC Equipment	A	37,278	47,890		47,890	U
58	ID Systems	A	21,239	22,777		22,777	U
59	Joint Precision Approach And Landing System (			38,094		38,094	U

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Department of the Navy
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Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2020 Base Quantity	Cost	FY 2020 OCO for Base Requirements Quantity	Cost	FY 2020 OCO for Direct War and Enduring Costs Quantity	Cost	FY 2020 Total OCO Quantity	Cost	S e c
----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-
	Electronic Warfare Equipment										
44	AN/SLQ-32	A		420,154							U
	Reconnaissance Equipment										
45	Shipboard IW Exploit	A		194,758							U
46	Automated Identification System (AIS)			5,368							U
	Other Ship Electronic Equipment										
47	Cooperative Engagement Capability	B		35,128							U
48	Naval Tactical Command Support System (NTCSS)	A		15,154							U
49	ATDLS	A		52,753							U
50	Navy Command and Control System (NCCS)			3,390							U
51	Minesweeping System Replacement	A		19,448							U
52	Shallow Water MCM	B		8,730							U
53	Navstar GPS Receivers (SPACE)	A		32,674							U
54	American Forces Radio and TV Service	A		2,617							U
55	Strategic Platform Support Equip	A		7,973							U
	Aviation Electronic Equipment										
56	Ashore ATC Equipment	A		72,406							U
57	Afloat ATC Equipment	A		67,410							U
58	ID Systems	A		26,059							U
59	Joint Precision Approach And Landing System (			92,695							U

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Appropriation: 1810N Other Procurement, Navy

Line No -----	Item Nomenclature -----	Ident Code -----	FY 2020 Total (Base + OCO) Quantity Cost ----- -----	S e c -
	Electronic Warfare Equipment			
44	AN/SLQ-32	A	420,154	U
	Reconnaissance Equipment			
45	Shipboard IW Exploit	A	194,758	U
46	Automated Identification System (AIS)		5,368	U
	Other Ship Electronic Equipment			
47	Cooperative Engagement Capability	B	35,128	U
48	Naval Tactical Command Support System (NTCSS)	A	15,154	U
49	ATDLS	A	52,753	U
50	Navy Command and Control System (NCCS)		3,390	U
51	Minesweeping System Replacement	A	19,448	U
52	Shallow Water MCM	B	8,730	U
53	Navstar GPS Receivers (SPACE)	A	32,674	U
54	American Forces Radio and TV Service	A	2,617	U
55	Strategic Platform Support Equip	A	7,973	U
	Aviation Electronic Equipment			
56	Ashore ATC Equipment	A	72,406	U
57	Afloat ATC Equipment	A	67,410	U
58	ID Systems	A	26,059	U
59	Joint Precision Approach And Landing System (		92,695	U

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Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 (Base + OCO) Quantity Cost	FY 2019 Base Enacted Quantity Cost	FY 2019 OCO Enacted Quantity Cost	FY 2019 Total Enacted Quantity Cost	S e c
----	-----	-----	-----	-----	-----	-----	-
60	Naval Mission Planning Systems	A	17,396	11,966		11,966	U
	Other Shore Electronic Equipment						
61	Tactical/Mobile C4I Systems	A	40,079	42,010		42,010	U
62	DCGS-N	A	19,012	10,219		10,219	U
63	CANES		311,212	404,891		404,891	U
64	RADIAC	A	10,718	8,175		8,175	U
65	CANES-Intell		46,075	53,465		53,465	U
66	GPETE	A	6,861	5,985		5,985	U
67	MASF		8,081	5,413		5,413	U
68	Integ Combat System Test Facility	A	5,019	6,251		6,251	U
69	EMI Control Instrumentation	A	4,188	4,183		4,183	U
70	Items Less Than \$5 Million	A	116,111	140,092		140,092	U
	Shipboard Communications						
71	Shipboard Tactical Communications	A	23,695	45,450		45,450	U
72	Ship Communications Automation	A	99,545	105,087		105,087	U
73	Communications Items Under \$5M	A	16,280	39,081		39,081	U
	Submarine Communications						
74	Submarine Broadcast Support	A	42,640	25,883		25,883	U
75	Submarine Communication Equipment	A	76,327	78,580		78,580	U

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Department of the Navy
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Exhibit P-1 FY 2020 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2020 Base Quantity	Cost	FY 2020 OCO for Base Requirements Quantity	Cost	FY 2020 OCO for Direct War and Enduring Costs Quantity	Cost	FY 2020 Total OCO Quantity	Cost	S e c
----	-----	-----	-----	----	-----	----	-----	----	-----	----	-
60	Naval Mission Planning Systems	A		15,296							U
	Other Shore Electronic Equipment										
61	Tactical/Mobile C4I Systems	A		36,226							U
62	DCGS-N	A		21,788							U
63	CANES			426,654							U
64	RADIAC	A		6,450							U
65	CANES-Intell			52,713							U
66	GPETE	A		13,028							U
67	MASF			5,193							U
68	Integ Combat System Test Facility	A		6,028							U
69	EMI Control Instrumentation	A		4,209							U
70	Items Less Than \$5 Million	A		168,436							U
	Shipboard Communications										
71	Shipboard Tactical Communications	A		55,853							U
72	Ship Communications Automation	A		137,861							U
73	Communications Items Under \$5M	A		35,093							U
	Submarine Communications										
74	Submarine Broadcast Support	A		50,833							U
75	Submarine Communication Equipment	A		69,643							U

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Department of the Navy
FY 2020 President's Budget
Exhibit P-1 FY 2020 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2020 Total (Base + OCO) Quantity	Cost	S e c
----	-----	-----	-----	-----	-----
60	Naval Mission Planning Systems	A		15,296	U
	Other Shore Electronic Equipment				
61	Tactical/Mobile C4I Systems	A		36,226	U
62	DCGS-N	A		21,788	U
63	CANES			426,654	U
64	RADIAC	A		6,450	U
65	CANES-Intell			52,713	U
66	GPETE	A		13,028	U
67	MASF			5,193	U
68	Integ Combat System Test Facility	A		6,028	U
69	EMI Control Instrumentation	A		4,209	U
70	Items Less Than \$5 Million	A		168,436	U
	Shipboard Communications				
71	Shipboard Tactical Communications	A		55,853	U
72	Ship Communications Automation	A		137,861	U
73	Communications Items Under \$5M	A		35,093	U
	Submarine Communications				
74	Submarine Broadcast Support	A		50,833	U
75	Submarine Communication Equipment	A		69,643	U

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Department of the Navy
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Exhibit P-1 FY 2020 President's Budget
Total Obligational Authority
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Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 (Base + OCO) Quantity Cost	FY 2019 Base Enacted Quantity Cost	FY 2019 OCO Enacted Quantity Cost	FY 2019 Total Enacted Quantity Cost	S e c
----	-----	-----	-----	-----	-----	-----	-
Satellite Communications							
76	Satellite Communications Systems	A	14,654	38,702	3,200	41,902	U
77	Navy Multiband Terminal (NMT)		62,113	109,385		109,385	U
Shore Communications							
78	Joint Communications Support Element (JCSE)	A	4,256	4,292		4,292	U
Cryptographic Equipment							
79	Info Systems Security Program (ISSP)	A	88,946	151,828		151,828	U
80	MIO Intel Exploitation Team	A	961	951		951	U
Cryptologic Equipment							
81	Cryptologic Communications Equip	A	26,167	17,009	2,000	19,009	U
Other Electronic Support							
82	DON ACTS	A	1,923				U
83	Coast Guard Equipment	A	36,584	40,713		40,713	U
Drug Interdiction Support							
84	Other Drug Interdiction Support	A	17,199				U
Total Communications & Electronics Equip			2,740,513	3,059,558	62,150	3,121,708	
Budget Activity 03: Aviation Support Equipment							

Sonobuoys							
85	Sonobuoys - All Types	A	173,616	216,191	21,156	237,347	U

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Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2020 Base Quantity	Cost	FY 2020 OCO for Base Requirements Quantity	Cost	FY 2020 OCO for Direct War and Enduring Costs Quantity	Cost	FY 2020 Total OCO Quantity	Cost	S e c
----	-----	-----	-----	----	-----	----	-----	----	-----	----	-
Satellite Communications											
76	Satellite Communications Systems	A		45,841							U
77	Navy Multiband Terminal (NMT)			88,021							U
Shore Communications											
78	Joint Communications Support Element (JCSE)	A		4,293							U
Cryptographic Equipment											
79	Info Systems Security Program (ISSP)	A		166,540							U
80	MIO Intel Exploitation Team	A		968							U
Cryptologic Equipment											
81	Cryptologic Communications Equip	A		13,090							U
Other Electronic Support											
82	DON ACTS	A									U
83	Coast Guard Equipment	A		61,370							U
Drug Interdiction Support											
84	Other Drug Interdiction Support	A									U
Total Communications & Electronics Equip				3,255,859			310,503		310,503		
Budget Activity 03: Aviation Support Equipment											

Sonobuoys											
85	Sonobuoys - All Types	A		260,644			2,910		2,910		U

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Exhibit P-1 FY 2020 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2020 Total (Base + OCO) Quantity	Cost	S e c
----	-----	-----	-----	-----	-----
Satellite Communications					
76	Satellite Communications Systems	A		45,841	U
77	Navy Multiband Terminal (NMT)			88,021	U
Shore Communications					
78	Joint Communications Support Element (JCSE)	A		4,293	U
Cryptographic Equipment					
79	Info Systems Security Program (ISSP)	A		166,540	U
80	MIO Intel Exploitation Team	A		968	U
Cryptologic Equipment					
81	Cryptologic Communications Equip	A		13,090	U
Other Electronic Support					
82	DON ACTS	A			U
83	Coast Guard Equipment	A		61,370	U
Drug Interdiction Support					
84	Other Drug Interdiction Support	A			U
Total Communications & Electronics Equip				3,566,362	
Budget Activity 03: Aviation Support Equipment					

Sonobuoys					
85	Sonobuoys - All Types	A		263,554	U

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Exhibit P-1 FY 2020 President's Budget
Total Obligational Authority
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Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 (Base + OCO) Quantity Cost	FY 2019 Base Enacted Quantity Cost	FY 2019 OCO Enacted Quantity Cost	FY 2019 Total Enacted Quantity Cost	S e c
----	-----	-----	-----	-----	-----	-----	-
	Aircraft Support Equipment						
86	Minotaur	A					U
87	Weapons Range Support Equipment	A	66,941	93,864		93,864	U
88	Aircraft Support Equipment	A	103,340	105,943		105,943	U
89	Advanced Arresting Gear (AAG)	A	10,900	11,054		11,054	U
90	Meteorological Equipment	A	21,000	21,072		21,072	U
91	DCRS/DPL	A	660	656		656	U
92	Legacy Airborne MCM	A	19,297	11,299		11,299	U
93	Lamps Equipment			594		594	U
94	Aviation Support Equipment	A	63,995	37,874		37,874	U
95	UMCS-Unman Carrier Aviation(UCA)Mission Cntrl	A		18,019		18,019	U
	Total Aviation Support Equipment		459,749	516,566	21,156	537,722	
	Budget Activity 04: Ordnance Support Equipment						
	Ship Gun System Equipment						
96	Ship Gun Systems Equipment	A	5,277	5,337		5,337	U
	Ship Missile Systems Equipment						
97	Harpoon Support Equipment	A					U
98	Ship Missile Support Equipment	A	266,770	200,118		200,118	U
99	Tomahawk Support Equipment	A	73,184	86,045		86,045	U

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Total Obligational Authority
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Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2020 Base Quantity	Cost	FY 2020 OCO for Base Requirements Quantity	Cost	FY 2020 OCO for Direct War and Enduring Costs Quantity	Cost	FY 2020 Total OCO Quantity	Cost	S e c
----	-----	-----	-----	----	-----	----	-----	----	-----	----	-
Aircraft Support Equipment											
86	Minotaur	A		5,000							U
87	Weapons Range Support Equipment	A		101,843							U
88	Aircraft Support Equipment	A		145,601			13,420		13,420		U
89	Advanced Arresting Gear (AAG)	A		4,725							U
90	Meteorological Equipment	A		14,687							U
91	DCRS/DPL	A									U
92	Legacy Airborne MCM	A		19,250							U
93	Lamps Equipment			792							U
94	Aviation Support Equipment	A		55,415			500		500		U
95	UMCS-Unman Carrier Aviation(UCA)Mission Cntrl	A		32,668							U
Total Aviation Support Equipment				640,625			16,830		16,830		
Budget Activity 04: Ordnance Support Equipment											

Ship Gun System Equipment											
96	Ship Gun Systems Equipment	A		5,451							U
Ship Missile Systems Equipment											
97	Harpoon Support Equipment	A		1,100							U
98	Ship Missile Support Equipment	A		228,104							U
99	Tomahawk Support Equipment	A		78,593							U

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Total Obligational Authority
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Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2020 Total (Base + OCO) Quantity	Cost	S e c
----	-----	-----	-----	-----	-----
Aircraft Support Equipment					
86	Minotaur	A		5,000	U
87	Weapons Range Support Equipment	A		101,843	U
88	Aircraft Support Equipment	A		159,021	U
89	Advanced Arresting Gear (AAG)	A		4,725	U
90	Meteorological Equipment	A		14,687	U
91	DCRS/DPL	A			U
92	Legacy Airborne MCM	A		19,250	U
93	Lamps Equipment			792	U
94	Aviation Support Equipment	A		55,915	U
95	UMCS-Unman Carrier Aviation(UCA)Mission Cntrl	A		32,668	U
Total Aviation Support Equipment				657,455	
Budget Activity 04: Ordnance Support Equipment					

Ship Gun System Equipment					
96	Ship Gun Systems Equipment	A		5,451	U
Ship Missile Systems Equipment					
97	Harpoon Support Equipment	A		1,100	U
98	Ship Missile Support Equipment	A		228,104	U
99	Tomahawk Support Equipment	A		78,593	U

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Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 (Base + OCO) Quantity Cost	FY 2019 Base Enacted Quantity Cost	FY 2019 OCO Enacted Quantity Cost	FY 2019 Total Enacted Quantity Cost	S e c
----	-----	-----	-----	-----	-----	-----	-
	FBM Support Equipment						
100	Strategic Missile Systems Equip	A	238,675	256,817		256,817	U
	ASW Support Equipment						
101	SSN Combat Control Systems	A	146,972	125,903		125,903	U
102	ASW Support Equipment	A	23,209	19,436		19,436	U
	Other Ordnance Support Equipment						
103	Explosive Ordnance Disposal Equip	B	63,766	14,258	27,580	41,838	U
104	Items Less Than \$5 Million	A	5,981	5,378		5,378	U
	Other Expendable Ordnance						
105	Anti-Ship Missile Decoy System	A					U
106	Submarine Training Device Mods	A	72,756	56,834		56,834	U
107	Surface Training Equipment	A	81,595	227,791		227,791	U
	Total Ordnance Support Equipment		978,185	997,917	27,580	1,025,497	
	Budget Activity 05: Civil Engineering Support Equip						
	Civil Engineering Support Equipment						
108	Passenger Carrying Vehicles	A	5,299	4,867	170	5,037	U
109	General Purpose Trucks	A	3,451	2,674	400	3,074	U
110	Construction & Maintenance Equip	A	36,173	20,994		20,994	U
111	Fire Fighting Equipment	A	5,388	17,189	770	17,959	U

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Total Obligational Authority
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Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2020 Base Quantity	Cost	FY 2020 OCO for Base Requirements Quantity	Cost	FY 2020 OCO for Direct War and Enduring Costs Quantity	Cost	FY 2020 Total OCO Quantity	Cost	S e c
----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-
	FBM Support Equipment										
100	Strategic Missile Systems Equip	A		280,510							U
	ASW Support Equipment										
101	SSN Combat Control Systems	A		148,547							U
102	ASW Support Equipment	A		21,130							U
	Other Ordnance Support Equipment										
103	Explosive Ordnance Disposal Equip	B		15,244			15,307		15,307		U
104	Items Less Than \$5 Million	A		5,071							U
	Other Expendable Ordnance										
105	Anti-Ship Missile Decoy System	A		41,962							U
106	Submarine Training Device Mods	A		75,057							U
107	Surface Training Equipment	A		233,175							U
	Total Ordnance Support Equipment			1,133,944			15,307		15,307		
	Budget Activity 05: Civil Engineering Support Equip										
	Civil Engineering Support Equipment										
108	Passenger Carrying Vehicles	A		4,562			173		173		U
109	General Purpose Trucks	A		10,974			408		408		U
110	Construction & Maintenance Equip	A		43,191							U
111	Fire Fighting Equipment	A		21,142			785		785		U

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Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2020 Total (Base + OCO) Quantity Cost	S e c
----	-----	-----	-----	-----
	FBM Support Equipment			
100	Strategic Missile Systems Equip	A	280,510	U
	ASW Support Equipment			
101	SSN Combat Control Systems	A	148,547	U
102	ASW Support Equipment	A	21,130	U
	Other Ordnance Support Equipment			
103	Explosive Ordnance Disposal Equip	B	30,551	U
104	Items Less Than \$5 Million	A	5,071	U
	Other Expendable Ordnance			
105	Anti-Ship Missile Decoy System	A	41,962	U
106	Submarine Training Device Mods	A	75,057	U
107	Surface Training Equipment	A	233,175	U

	Total Ordnance Support Equipment		1,149,251	
	Budget Activity 05: Civil Engineering Support Equip			

	Civil Engineering Support Equipment			
108	Passenger Carrying Vehicles	A	4,735	U
109	General Purpose Trucks	A	11,382	U
110	Construction & Maintenance Equip	A	43,191	U
111	Fire Fighting Equipment	A	21,927	U

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Line No	Item Nomenclature	Ident Code	FY 2018 (Base + OCO) Quantity Cost	FY 2019 Base Enacted Quantity Cost	FY 2019 OCO Enacted Quantity Cost	FY 2019 Total Enacted Quantity Cost	S e c
----	-----	-----	-----	-----	-----	-----	-
112	Tactical Vehicles	B	22,035	19,916	7,298	27,214	U
113	Amphibious Equipment	A	12,162	6,176		6,176	U
114	Pollution Control Equipment	A	2,748	2,713		2,713	U
115	Items Under \$5 Million	A	19,434	35,540		35,540	U
116	Physical Security Vehicles	A	1,170	1,155		1,155	U
	Total Civil Engineering Support Equip		107,860	111,224	8,638	119,862	
Budget Activity 06: Supply Support Equipment							

	Supply Support Equipment						
117	Supply Equipment	A	22,309	17,386		17,386	U
118	First Destination Transportation	A	5,992	5,375	500	5,875	U
119	Special Purpose Supply Systems	A	482,916	580,371		580,371	U
	Total Supply Support Equipment		511,217	603,132	500	603,632	
Budget Activity 07: Personnel & Command Support Equip							

	Training Devices						
120	Training Support Equipment	A		3,400		3,400	U
121	Training and Education Equipment	A	26,024	20,683		20,683	U
	Command Support Equipment						
122	Command Support Equipment	A	78,406	61,577		61,577	U
123	Medical Support Equipment	A	22,483	10,352	6,500	16,852	U

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Line No	Item Nomenclature	Ident Code	FY 2020 Base Quantity	Cost	FY 2020 OCO for Base Requirements Quantity	Cost	FY 2020 OCO for Direct War and Enduring Costs Quantity	Cost	FY 2020 Total OCO Quantity	Cost	S e c
112	Tactical Vehicles	B		33,432							U
113	Amphibious Equipment	A									U
114	Pollution Control Equipment	A		2,633							U
115	Items Under \$5 Million	A		53,467							U
116	Physical Security Vehicles	A		1,173							U
	Total Civil Engineering Support Equip			170,574				1,366		1,366	
Budget Activity 06: Supply Support Equipment											
Supply Support Equipment											
117	Supply Equipment	A		16,730			100		100		U
118	First Destination Transportation	A		5,389			510		510		U
119	Special Purpose Supply Systems	A		654,674							U
	Total Supply Support Equipment			676,793			610		610		
Budget Activity 07: Personnel & Command Support Equip											
Training Devices											
120	Training Support Equipment	A		3,633							U
121	Training and Education Equipment	A		97,636							U
Command Support Equipment											
122	Command Support Equipment	A		66,102			2,800		2,800		U
123	Medical Support Equipment	A		3,633			1,794		1,794		U

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Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2020 Total (Base + OCO) Quantity	Cost	S e c
----	-----	-----	-----	-----	-----
112	Tactical Vehicles	B		33,432	U
113	Amphibious Equipment	A			U
114	Pollution Control Equipment	A		2,633	U
115	Items Under \$5 Million	A		53,467	U
116	Physical Security Vehicles	A		1,173	U
	Total Civil Engineering Support Equip			171,940	
Budget Activity 06: Supply Support Equipment					

	Supply Support Equipment				
117	Supply Equipment	A		16,830	U
118	First Destination Transportation	A		5,899	U
119	Special Purpose Supply Systems	A		654,674	U
	Total Supply Support Equipment			677,403	
Budget Activity 07: Personnel & Command Support Equip					

	Training Devices				
120	Training Support Equipment	A		3,633	U
121	Training and Education Equipment	A		97,636	U
	Command Support Equipment				
122	Command Support Equipment	A		68,902	U
123	Medical Support Equipment	A		5,427	U

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Line No	Item Nomenclature	Ident Code	FY 2018 (Base + OCO) Quantity Cost	FY 2019 Base Enacted Quantity Cost	FY 2019 OCO Enacted Quantity Cost	FY 2019 Total Enacted Quantity Cost	S e c
----	-----	-----	-----	-----	-----	-----	-
125	Naval MIP Support Equipment	A	2,030	1,984		1,984	U
126	Operating Forces Support Equipment	A	23,300	15,131		15,131	U
127	C4ISR Equipment	A	4,010	3,576		3,576	U
128	Environmental Support Equipment	A	30,644	31,902	2,200	34,102	U
129	Physical Security Equipment	A	139,972	175,436	19,389	194,825	U
130	Enterprise Information Technology	A	19,733	25,393		25,393	U
	Other						
133	Next Generation Enterprise Service	A	89,178	96,269		96,269	U
999	Classified Programs		25,907	15,681	4,800	20,481	U
	Total Personnel & Command Support Equip		461,687	461,384	32,889	494,273	
	Budget Activity 08: Spares and Repair Parts						
	Spares and Repair Parts						
134	Spares and Repair Parts	A	287,453	307,575		307,575	U
	Total Spares and Repair Parts		287,453	307,575		307,575	
	Total Other Procurement, Navy		8,258,598	9,097,138	181,173	9,278,311	

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Line No	Item Nomenclature	Ident Code	FY 2020 Base Quantity	Cost	FY 2020 OCO for Base Requirements Quantity	Cost	FY 2020 OCO for Direct War and Enduring Costs Quantity	Cost	FY 2020 Total OCO Quantity	Cost	S e c
----	-----	-----	-----	----	-----	----	-----	----	-----	----	-
125	Naval MIP Support Equipment	A		6,097							U
126	Operating Forces Support Equipment	A		16,905			1,090		1,090		U
127	C4ISR Equipment	A		30,146							U
128	Environmental Support Equipment	A		21,986			200		200		U
129	Physical Security Equipment	A		160,046			1,300		1,300		U
130	Enterprise Information Technology	A		56,899							U
	Other										
133	Next Generation Enterprise Service	A		122,832							U
999	Classified Programs			16,346							U
	Total Personnel & Command Support Equip			602,261			7,184		7,184		
	Budget Activity 08: Spares and Repair Parts										
	Spares and Repair Parts										
134	Spares and Repair Parts	A		375,608							U
	Total Spares and Repair Parts			375,608							
	Total Other Procurement, Navy			9,652,956			357,600		357,600		

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Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2020 Total (Base + OCO) Quantity	Cost	S e c
----	-----	-----	-----	-----	-----
125	Naval MIP Support Equipment	A		6,097	U
126	Operating Forces Support Equipment	A		17,995	U
127	C4ISR Equipment	A		30,146	U
128	Environmental Support Equipment	A		22,186	U
129	Physical Security Equipment	A		161,346	U
130	Enterprise Information Technology	A		56,899	U
	Other				
133	Next Generation Enterprise Service	A		122,832	U
999	Classified Programs			16,346	U

	Total Personnel & Command Support Equip			609,445	
	Budget Activity 08: Spares and Repair Parts				

	Spares and Repair Parts				
134	Spares and Repair Parts	A		375,608	U

	Total Spares and Repair Parts			375,608	

	Total Other Procurement, Navy			10,010,556	

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7	01	09	0925	Command and Control Switchboard.....	Volume 1 - 281
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9	01	09	0935	Pollution Control Equipment.....	Volume 1 - 353
10	01	09	0941	Submarine Support Equipment.....	Volume 1 - 371
11	01	09	0942	Virginia Class Support Equipment.....	Volume 1 - 383
12	01	09	0944	LCS Class Support Equipment.....	Volume 1 - 399
13	01	09	0945	Submarine Batteries.....	Volume 1 - 411
14	01	09	0946	LPD Class Support Equipment.....	Volume 1 - 419
15	01	09	0947	DDG 1000 Class Support Equipment.....	Volume 1 - 467
16	01	09	0950	Strategic Platform Support Equip.....	Volume 1 - 477

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19	01	09	0970	LCAC.....	Volume 1 - 523
20	01	09	0977	Underwater EOD Programs.....	Volume 1 - 527
21	01	09	0981	Items less than \$5 Million.....	Volume 1 - 551
22	01	09	0989	Chemical Warfare Detectors.....	Volume 1 - 593
23	01	09	0990	Submarine Life Support System.....	Volume 1 - 627
24	01	10	1010	Reactor Power Units.....	Volume 1 - 633
25	01	10	1020	Reactor Components.....	Volume 1 - 637
26	01	11	1130	Diving and Salvage Equipment.....	Volume 1 - 641
27	01	12	1210	Standard Boats.....	Volume 1 - 659
28	01	14	1445	Operating Forces IPE.....	Volume 1 - 673
29	01	15	1600	LCS Common Mission Modules Equipment.....	Volume 1 - 687
30	01	15	1601	LCS MCM Mission Modules.....	Volume 1 - 701
31	01	15	1602	LCS ASW Mission Modules.....	Volume 1 - 719
32	01	15	1603	LCS SUW Mission Modules.....	Volume 1 - 731
33	01	15	1604	LCS In-Service Modernization.....	Volume 1 - 739
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37	02	02	2136	AN/SQQ-89 Surf ASW Cmbt Sys.....	Volume 2 - 11
38	02	02	2150	SSN Acoustic Equipment.....	Volume 2 - 43
39	02	02	2176	Undersea Warfare Support Equipment.....	Volume 2 - 87
40	02	03	2210	Submarine Acoustic Warfare System.....	Volume 2 - 95
41	02	03	2213	Surface Ship Torpedo Def (SSTD).....	Volume 2 - 119
42	02	03	2225	Fixed Surveillance System.....	Volume 2 - 129
43	02	03	2237	SURTASS.....	Volume 2 - 133
44	02	04	2312	AN/SLQ-32.....	Volume 2 - 157
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50	02	07	2618	Navy Command and Control System (NCCS).....	Volume 2 - 273
51	02	07	2622	Minesweeping System Replacement.....	Volume 2 - 281
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54	02	07	2666	American Forces Radio and TV Service (AFRTS).....	Volume 2 - 315
55	02	07	2676	Strategic Platform Support Equip.....	Volume 2 - 323
56	02	09	2820	Ashore ATC Equipment.....	Volume 2 - 327
57	02	09	2830	Afloat ATC Equipment.....	Volume 2 - 383
58	02	09	2851	ID Systems.....	Volume 2 - 425
59	02	09	2867	Joint Precision Approach and Landing System(JPALS).....	Volume 2 - 459
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69	02	10	2970	EMI Control Instrumentation.....	Volume 2 - 565
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72	02	11	3050	Ship Communications Automation.....	Volume 2 - 609
73	02	11	3057	Communications Items under \$5M.....	Volume 2 - 633
74	02	12	3107	Submarine Broadcast Support.....	Volume 2 - 645
75	02	12	3130	Submarine Communication Equipment.....	Volume 2 - 649
76	02	13	3215	Satellite Communications Systems.....	Volume 2 - 653
77	02	13	3216	Navy Multiband Terminal (NMT).....	Volume 2 - 669
78	02	14	3302	Joint Communications Support Element (JCSE).....	Volume 2 - 687
79	02	15	3415	Info Systems Security Program (ISSP).....	Volume 2 - 691
80	02	15	3417	MIO Intel Exploitation Team.....	Volume 2 - 729
81	02	16	3501	Cryptologic Communications Equip.....	Volume 2 - 733
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89	03	03	4217	Advanced Arresting Gear (AAG).....	Volume 3 - 77
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91	03	03	4242	DCRS/DPL.....	Volume 3 - 97
92	03	03	4248	Legacy Airborne MCM.....	Volume 3 - 101
93	03	03	4250	Common Control System.....	Volume 3 - 115
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100	04	04	5358	Strategic Missile Systems Equip.....	Volume 4 - 59
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105	04	07	5530	Anti-ship Missile Decoy System.....	Volume 4 - 149
106	04	07	5661	Submarine Training Device Mods.....	Volume 4 - 161
107	04	07	5664	Surface Training Equipment.....	Volume 4 - 177

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122	07	02	8106	Command Support Equipment.....	Volume 5 - 169
123	07	02	8109	Medical Support Equipment.....	Volume 5 - 199
125	07	02	8114	Naval MIP Support Equipment.....	Volume 5 - 209
126	07	02	8118	Operating Forces Supt Equip.....	Volume 5 - 215
127	07	02	8120	C4ISR Equipment.....	Volume 5 - 221
128	07	02	8126	Environmental Support Equipment.....	Volume 5 - 229
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ASW Support Equipment	5429	102	04	05.....	Volume 4 - 121
Adv Tact Data Link Sys (ATDLS)	2614	49	02	07.....	Volume 2 - 261
Advanced Arresting Gear (AAG)	4217	89	03	03.....	Volume 3 - 77
Afloat ATC Equipment	2830	57	02	09.....	Volume 2 - 383
Aircraft Support Equipment	4213	88	03	03.....	Volume 3 - 27
American Forces Radio and TV Service (AFRTS)	2666	54	02	07.....	Volume 2 - 315
Amphibious Equipment	6033	113	05	01.....	Volume 5 - 63
Anti-ship Missile Decoy System	5530	105	04	07.....	Volume 4 - 149
Ashore ATC Equipment	2820	56	02	09.....	Volume 2 - 327
Automatic Identification System (AIS)	2361	46	02	05.....	Volume 2 - 217
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C4ISR Equipment	8120	127	07	02.....	Volume 5 - 221
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Command and Control Switchboard	0925	7	01	09.....	Volume 1 - 281
Common Control System	4250	93	03	03.....	Volume 3 - 115
Communications Items under \$5M	3057	73	02	11.....	Volume 2 - 633
Construction & Maint Equip	6024	110	05	01.....	Volume 5 - 29
Cooperative Engagement Capability	2606	47	02	07.....	Volume 2 - 223
Cryptologic Communications Equip	3501	81	02	16.....	Volume 2 - 733
DCRS/DPL	4242	91	03	03.....	Volume 3 - 97
DDG 1000 Class Support Equipment	0947	15	01	09.....	Volume 1 - 467
DDG Mod	0900	5	01	09.....	Volume 1 - 181
Deep Subm Sys Proj (DSSP) Equip	0955	17	01	09.....	Volume 1 - 485
Distributed Common Ground System-Navy (DCGS-N)	2914	62	02	10.....	Volume 2 - 489
Diving and Salvage Equipment	1130	26	01	11.....	Volume 1 - 641
EMI Control Instrumentation	2970	69	02	10.....	Volume 2 - 565
Enterprise Information Technology	8161	130	07	02.....	Volume 5 - 257
Environmental Support Equipment	8126	128	07	02.....	Volume 5 - 229
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Gen Purp Elec Test Equip (GPETE)	2940	66	02	10.....	Volume 2 - 549
General Purpose Trucks	6007	109	05	01.....	Volume 5 - 15
HARPOON Support Equipment	5227	97	04	03.....	Volume 4 - 5
ID Systems	2851	58	02	09.....	Volume 2 - 425
Info Systems Security Program (ISSP)	3415	79	02	15.....	Volume 2 - 691
Integ Combat System Test Facility	2960	68	02	10.....	Volume 2 - 561
Items Less Than \$5 Million	5543	104	04	06.....	Volume 4 - 145
Items less than \$5 Million	0981	21	01	09.....	Volume 1 - 551
Items less than \$5 Million	2980	70	02	10.....	Volume 2 - 569
Items under \$5 million	6060	115	05	01.....	Volume 5 - 75
Joint Communications Support Element (JCSE)	3302	78	02	14.....	Volume 2 - 687
Joint Precision Approach and Landing System(JPALS)	2867	59	02	09.....	Volume 2 - 459
LCAC	0970	19	01	09.....	Volume 1 - 523
LCS ASW Mission Modules	1602	31	01	15.....	Volume 1 - 719
LCS Class Support Equipment	0944	12	01	09.....	Volume 1 - 399
LCS Common Mission Modules Equipment	1600	29	01	15.....	Volume 1 - 687
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LHA/LHD Midlife	0933	8	01	09.....	Volume 1 - 289
LPD Class Support Equipment	0946	14	01	09.....	Volume 1 - 419
LSD Midlife & Modernization	1610	35	01	16.....	Volume 1 - 761
Legacy Airborne MCM	4248	92	03	03.....	Volume 3 - 101
MIO Intel Exploitation Team	3417	80	02	15.....	Volume 2 - 729
Medical Support Equipment	8109	123	07	02.....	Volume 5 - 199
Meteorological Equipment	4226	90	03	03.....	Volume 3 - 89
Minesweeping System Replacement	2622	51	02	07.....	Volume 2 - 281
Minotaur	3640	86	03	03.....	Volume 3 - 13
NAVSTAR GPS Receivers (Space)	2657	53	02	07.....	Volume 2 - 303
Naval MIP Support Equipment	8114	125	07	02.....	Volume 5 - 209
Naval Mission Planning Systems	2876	60	02	09.....	Volume 2 - 465
Naval Tact Cmd Supt Sys (NTCSS)	2611	48	02	07.....	Volume 2 - 251
Navy Command and Control System (NCCS)	2618	50	02	07.....	Volume 2 - 273
Navy Multiband Terminal (NMT)	3216	77	02	13.....	Volume 2 - 669
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SSN Combat Control Systems	5420	101	04	05.....	Volume 4 - 89
SURTASS	2237	43	02	03.....	Volume 2 - 133
Satellite Communications Systems	3215	76	02	13.....	Volume 2 - 653
Shallow Water MCM	2624	52	02	07.....	Volume 2 - 293
Shallow Water Multi-Sensor Surveillance	2562	999	02	06.....	Volume 2 - 757
Ship Communications Automation	3050	72	02	11.....	Volume 2 - 609
Ship Gun Systems Equipment	5111	96	04	02.....	Volume 4 - 1
Ship Missile Support Equipment	5231	98	04	03.....	Volume 4 - 9

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Strategic Platform Support Equip	2676	55	02	07.....	Volume 2 - 323
Sub Periscope, Imaging and Supt Equip Prog	0840	4	01	09.....	Volume 1 - 125
Submarine Acoustic Warfare System	2210	40	02	03.....	Volume 2 - 95
Submarine Batteries	0945	13	01	09.....	Volume 1 - 411
Submarine Broadcast Support	3107	74	02	12.....	Volume 2 - 645
Submarine Communication Equipment	3130	75	02	12.....	Volume 2 - 649
Submarine Life Support System	0990	23	01	09.....	Volume 1 - 627
Submarine Support Equipment	0941	10	01	09.....	Volume 1 - 371
Submarine Training Device Mods	5661	106	04	07.....	Volume 4 - 161
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Tactical Vehicles	6028	112	05	01.....	Volume 5 - 57
Tactical/Mobile C4I Systems	2906	61	02	10.....	Volume 2 - 471
Tomahawk Support Equipment	5253	99	04	03.....	Volume 4 - 53
Training Support Equipment	8081	120	07	01.....	Volume 5 - 119
Training and Education Equipment	8101	121	07	01.....	Volume 5 - 139
UMCS-Unman Carrier Aviation(UCA)Mission Cntrl Stn	4269	95	03	03.....	Volume 3 - 145
Undersea Warfare Support Equipment	2176	39	02	02.....	Volume 2 - 87
Underwater EOD Programs	0977	20	01	09.....	Volume 1 - 527
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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars						P-1 Line Item Number / Title: 2026 / SPQ-9B Radar						
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A					Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	201.939	18.993	19.179	26.195	0.000	26.195	27.843	28.412	25.831	26.345	636.739	1,011.476
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	201.939	18.993	19.179	26.195	0.000	26.195	27.843	28.412	25.831	26.345	636.739	1,011.476
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	201.939	18.993	19.179	26.195	0.000	26.195	27.843	28.412	25.831	26.345	636.739	1,011.476
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	0.287	1.003	0.367	-	0.367	0.299	0.492	-	-	-	2.448
Flyaway Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Description:												
This program provides for procurement of AN/SPQ-9B Radars whose primary mission is to detect and track low flying Anti-Ship Missile targets in heavy clutter. The mission of the AN/SPQ-9B has been expanded to include the capability to detect and classify periscopes. The Periscope Detection and Discrimination (PDD) capability has been designed and incorporated to operate concurrently with the Anti-Ship Missile Defense (ASMD) capability.												
[BR5IN AN/SPQ-9B FMP INSTALLATIONS]: AN/SPQ-9B systems are installed using Alteration Installation Teams (AITs) that customarily require funding for planning yard Design Services Allocation (DSA) up to two years prior to the year of installation and funding for Advanced Planning (AP) one year prior to installation, to support individual ship class drawing packages, ship checks and long lead material unique to the installation in order to maintain alignment with ship availability schedules. FY19 DSA for FY19 procurements has been reduced, and funding increased in FY20, due to shifts in ship availabilities.												
[BR6IN AN/SPQ-9B NON FMP INSTALLATIONS]: Provided funding for the installation of equipment for Land Based Test Sites (LBTS).												
[P40A / BR040 TRANSMITTER UPGRADE FMP]: Funding was provided for installations of AN/SPQ-9B Transmitter Upgrades on LPD-17.												
[P40A / BR040 TRANSMITTER UPGRADE NON-FMP EQUIPMENT]: Funding provided for Transmitter Upgrade Processor installations at Surface Warfare Engineering Facility (SWEF) and Combat Systems Engineering Development Site (CSEDS) (both non-FMP).												
[P40A / BR042 AN/SPQ-9B ENGINEERING CHANGE PROPOSALS (ECP)]: Procures product improvements generated by Engineering Change Proposals (ECPs); corrects problems reported by Fleet units; upgrades unreliable components and replaces obsolete components and parts no longer in production for AN/SPQ-9B Radar; and addresses supportability concerns. Purchases and installs ECPs, including Antenna Shock Upgrade Kits, Antenna Radar Components, Digital Signal Processor (DSP) Kits, Periscope Detection and Discrimination (PDD) Kits and engineering change kit hardware components. Antenna Shock Upgrade Kits are installed during Antenna Restorations. DSP and PDD kits are installed conjunctively via Alteration Installation Team (AIT) and can be accomplished outside of a CNO Availability.												
[P40A / BR830 AN/SPQ-9B PRODUCTION SUPPORT]: Provides support for production of hardware and hardware components and is composed primarily of Warfare Center Activity support, Software Support Activity (SSA), Integrated Logistics Agent (ILA), Acquisition Engineering Agent (AEA), Technical Design Agent (TDA) and Professional Support Services (PSS). Also includes support for cybersecurity compliance and software certification.												

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars		P-1 Line Item Number / Title: 2026 / SPQ-9B Radar
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
[P3A / BR040 AN/SPQ-9B RADAR FMP EQUIPMENT]: Procures AN/SPQ-9B Radars to add Anti-Ship Missile Defense (ASMD) capability to Shipboard Combat Systems. Procures radars to support combat systems on the following ship classes: CG, LHA, DDG, CVN, LHD, LPD, U.S. Coast Guard National Security Cutter and a Training Unit. Systems procured for Cruisers/Destroyers (CRUDES) and Amphibious Ships in FY14 and beyond include the Periscope Detection and Discrimination (PDD) capability.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019	
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars						P-1 Line Item Number / Title: 2026 / SPQ-9B Radar			
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A			Other Related Program Elements: N/A		
Line Item MDAP/MAIS Code: N/A									

Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	SPQ-9B Radar				- / 127.672	- / 4.576	- / 5.098	- / 7.937	- / -	- / 7.937
P-3a	1 / BR040 AN/SPQ-9B RADAR FMP EQUIPMENT (TBD)				- / 74.267	- / 14.417	- / 14.081	- / 18.258	- / 0.000	- / 18.258
P-40	Total Gross/Weapon System Cost				- / 201.939	- / 18.993	- / 19.179	- / 26.195	- / 0.000	- / 26.195

Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	SPQ-9B Radar				- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / BR040 AN/SPQ-9B RADAR FMP EQUIPMENT (TBD)				- / 17.977	- / 18.220	- / 18.476	- / 19.298	- / 587.274	- / 782.268
P-40	Total Gross/Weapon System Cost				- / 27.843	- / 28.412	- / 25.831	- / 26.345	- / 636.739	- / 1,011.476

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2							P-1 Line Item Number / Title: 2026 / SPQ-9B Radar								Aggregated Items Title: SPQ-9B Radar					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
1) BR040 AN/SPQ-9B RADAR																				
1.1) BR040 ANTENNA	A		2,529K	7	17.701	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.2) BR040 ANTENNA TEST STAND	A		1,025K	1	1.025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.3) BR040 TRANSMITTER UPGRADE FMP	A		-	-	12.961	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.4) BR040 TRANSMITTER UPGRADE NON-FMP EQUIPMENT	A		-	-	2.958	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) BR040 AN/SPQ-9B RADAR			-	-	34.645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2) BR042 AN/SPQ-9B ENGINEERING CHANGE PROPOSALS (ECP)																				
2.1) BR042 MISCELLANEOUS ECPs ⁽¹⁾	A		-	-	38.681	-	-	2.510	-	-	1.423	-	-	1.789	-	-	-	-	-	1.789
2.2) BR042 ANTENNA SHOCK UPGRADE KITS	A		527,428.57	7	3.692	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.3) BR042 DIGITAL SIGNAL PROCESSOR KITS - PROCUREMENTS	A		380,800.00	5	1.904	-	-	-	126,468.00	3	0.379	125,624.00	5	0.628	-	-	-	125,624.00	5	0.628
2.4) BR042 DIGITAL SIGNAL PROCESSOR KITS - INSTALLS	A		56,000.00	5	0.280	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.5) BR042 PDD KITS - PROCUREMENT	A		700,555.56	9	6.305	-	-	-	396,987.00	3	1.191	395,188.00	5	1.976	-	-	-	395,188.00	5	1.976
2.6) BR042 PDD KITS - INSTALLS	A		240,000.00	9	2.160	-	-	-	-	-	-	298,000.00	3	0.894	-	-	-	298,000.00	3	0.894
Subtotal: 2) BR042 AN/SPQ-9B ENGINEERING CHANGE PROPOSALS (ECP)			-	-	53.022	-	-	2.510	-	-	2.993	-	-	5.287	-	-	-	-	-	5.287
3) BR830 AN/SPQ-9B PRODUCTION SUPPORT																				
3.1) BR830 AN/SPQ-9B PRODUCTION SUPPORT ⁽²⁾	A		-	-	18.378	-	-	2.066	-	-	2.105	-	-	2.650	-	-	-	-	-	2.650
Subtotal: 3) BR830 AN/SPQ-9B PRODUCTION SUPPORT			-	-	18.378	-	-	2.066	-	-	2.105	-	-	2.650	-	-	-	-	-	2.650
4) BRCA1 AN/SPQ-9B RADAR COMPONENTS																				

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy																Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2							P-1 Line Item Number / Title: 2026 / SPQ-9B Radar									Aggregated Items Title: SPQ-9B Radar				
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
4.1) BRCA1 AN/SPQ-9B RADAR COMPONENTS	A		7,400K	2	14.800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 4) BRCA1 AN/SPQ-9B RADAR COMPONENTS			-	-	14.800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5) BRCA2 AN/SPQ-9B RADAR COMPONENTS																				
5.1) BRCA2 AN/SPQ-9B RADAR COMPONENTS	A		6,800K	1	6.800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 5) BRCA2 AN/SPQ-9B RADAR COMPONENTS			-	-	6.800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6) WAXXX ACQUISITION WORKFORCE FUND																				
6.1) WAXXX ACQUISITION WORKFORCE FUND-2009	A		-	-	0.027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 6) WAXXX ACQUISITION WORKFORCE FUND			-	-	0.027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total			-	-	127.672	-	-	4.576	-	-	5.098	-	-	7.937	-	-	-	-	-	7.937

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

Footnotes:

- (1) Miscellaneous ECPs primarily funds product improvements, corrects problems reported by Fleet units, upgrades unreliable components, replaces obsolete components/parts no longer in production, and addresses supportability concerns.
- (2) AN/SPQ-9B Production Support provides support for production of hardware and production of hardware components and is composed primarily of Warfare Center Activity support, Software Support Activity (SSA), Integrated Logistics Agent (ILA), Acquisition Engineering Agent (AEA), Technical Design Agent (TDA) and Professional Support Services (PSS). Also includes support for cybersecurity compliance packages in the enterprise mission assurance support service (eMASS), element, and combat system certifications.

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2					P-1 Line Item Number / Title: 2026 / SPQ-9B Radar					Modification Number / Title: 1 / BR040 AN/SPQ-9B RADAR FMP EQUIPMENT		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	74.267	14.417	14.081	18.258	0.000	18.258	17.977	18.220	18.476	19.298	587.274	782.268
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	74.267	14.417	14.081	18.258	0.000	18.258	17.977	18.220	18.476	19.298	587.274	782.268
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	74.267	14.417	14.081	18.258	0.000	18.258	17.977	18.220	18.476	19.298	587.274	782.268
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: [BR040 AN/SPQ-9B RADAR FMP EQUIPMENT] Procures AN/SPQ-9B Radars to add Anti-Ship Missile Defense (ASMD) capability to Shipboard Combat Systems. Procures radars to support combat systems on the following ship classes: CG, LHA, DDG, CVN, LHD, LPD, U.S. Coast Guard National Security Cutter and a Training Unit. Systems procured for Cruisers/Destroyer (CRUDES) and Amphibious Ships in FY14 and beyond also include the Periscope Detection and Discrimination (PDD) capability. Notes: BR040 AN/SPQ-9B RADAR FMP EQUIPMENT: 1) The current competitive production contract was awarded in April 2018. This contract includes radars being procured across several appropriations (OPN, SCN and FMS). The first radar will deliver 20 months after award. All follow-on radars will be delivered at a rate of one every other month. 2) SPQ-9B was moved from BLI 5110 to BLI 2026 in FY2004. Prior to 2004, the procurement of the first five AN/SPQ-9B systems was funded under the Mk 86 program under BLI 5110. The installation costs for four out of five of these installs were included in the 2026 budget. This explains the difference of 81 installations and only 77 procurements in this budget (delta 4). 3) AN/SPQ-9B systems are installed using Alteration Installation Teams (AITs) that customarily require funding for planning yard Design Services Allocation (DSA) up to two years prior to the year of installation and funding for Advanced Planning (AP) one year prior to installation, to support individual ship class drawing packages, ship checks and long lead material unique to the installation in order to maintain alignment with ship availability schedules. FY19 DSA for FY19 procurements has been reduced, and funding increased in FY20, due to shifts in ship availabilities. 4) AN/SPQ-9B total installation costs (including DSA, AP, and AIT Installation) have increased from approximately \$2.9M to approximately \$4.5M as a result of actual installation costs from initial installation of AN/SPQ-9B Radars onboard DDGs. Increased costs are primarily due to a number of unplanned new installation requirements (e.g. extensive mast, waveguide and platform efforts). In addition, AIT contracts are now awarded as Firm Fixed Price (FFP), which is also a contributing factor to the cost increase.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2				P-1 Line Item Number / Title: 2026 / SPQ-9B Radar						Modification Number / Title: 1 / BR040 AN/SPQ-9B RADAR FMP EQUIPMENT			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: AN/SPQ-9B RADAR FMP EQUIPMENT				Modification Type: TBD				Related RDT&E PEs: 0604501N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: BR040 AN/SPQ-9B RADAR FMP EQUIPMENT													
B Kits													
Recurring													
1.1.1) BR040 AN/SPQ-9B RADAR FMP EQUIPMENT - NonOrganic ⁽³⁾	8 / 48.153	2 / 8.260	2 / 8.066	2 / 8.334	- / -	2 / 8.334	2 / 9.041	2 / 9.174	2 / 9.307	2 / 9.520	55 / 266.970	77 / 376.825	
1.1.2) BR040 AN/SPQ-9B NON-RECURRING (TDP) - Organic	- / 1.888	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.888	
Subtotal: Recurring	- / 50.041	- / 8.260	- / 8.066	- / 8.334	- / -	- / 8.334	- / 9.041	- / 9.174	- / 9.307	- / 9.520	- / 266.970	- / 378.713	
Subtotal: BR040 AN/SPQ-9B RADAR FMP EQUIPMENT	8 / 50.041	2 / 8.260	2 / 8.066	2 / 8.334	- / -	2 / 8.334	2 / 9.041	2 / 9.174	2 / 9.307	2 / 9.520	55 / 266.970	77 / 378.713	
Subtotal: Procurement, All Modification Items	- / 50.041	- / 8.260	- / 8.066	- / 8.334	- / -	- / 8.334	- / 9.041	- / 9.174	- / 9.307	- / 9.520	- / 266.970	- / 378.713	
Installation													
Modification Item 1 of 1: BR040 AN/SPQ-9B RADAR FMP EQUIPMENT	- / 24.226	- / 6.157	- / 6.015	- / 9.924	- / 0.000	- / 9.924	- / 8.936	- / 9.046	- / 9.169	- / 9.778	- / 320.304	- / 403.555	
Subtotal: Installation	- / 24.226	- / 6.157	- / 6.015	- / 9.924	- / -	- / 9.924	- / 8.936	- / 9.046	- / 9.169	- / 9.778	- / 320.304	- / 403.555	
Total													
Total Cost (Procurement + Support + Installation)	74.267	14.417	14.081	18.258	0.000	18.258	17.977	18.220	18.476	19.298	587.274	782.268	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2										P-1 Line Item Number / Title: 2026 / SPQ-9B Radar										Modification Number / Title: 1 / BR040 AN/SPQ-9B RADAR FMP EQUIPMENT											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: BR040 AN/SPQ-9B RADAR FMP EQUIPMENT																															
Manufacturer Information																															
Manufacturer Name: DRS Laurel Technologies															Manufacturer Location: Largo, FL																
Administrative Leadtime (in Months): 0															Production Leadtime (in Months): 18																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates		Apr 2018				Jan 2019				Mar 2020				Mar 2021				Mar 2022				Mar 2023				Mar 2024					
Delivery Dates		Dec 2019				Jul 2020				Sep 2021				Sep 2022				Sep 2023				Sep 2024				Sep 2025					
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: BR040 AN/SPQ-9B RADAR FMP EQUIPMENT																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		8 / 24.226		2 / 3.230		1 / 1.541		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		11 / 28.997							
FY 2018		- / -		0 / 2.927		0 / 4.474		2 / 3.086		0 / 0.000		2 / 3.086		- / -		- / -		- / -		- / -		0 / 0.000		2 / 10.487							
FY 2019		- / -		- / -		- / -		0 / 5.686		0 / 0.000		0 / 5.686		2 / 3.158		- / -		- / -		- / -		0 / 0.000		2 / 8.844							
FY 2020		- / -		- / -		- / -		0 / 1.152		0 / 0.000		0 / 1.152		0 / 4.604		2 / 3.202		- / -		- / -		0 / 0.000		2 / 8.958							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		0 / 1.174		0 / 4.648		2 / 3.258		- / -		0 / 0.000		2 / 9.080							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 1.196		0 / 4.670		2 / 3.270		0 / 0.000		2 / 9.136							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 1.241		0 / 5.242		2 / 2.900		2 / 9.383							
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 1.266		2 / 8.304		2 / 9.570							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		56 / 309.100		56 / 309.100							
Total		8 / 24.226		2 / 6.157		1 / 6.015		2 / 9.924		0 / 0.000		2 / 9.924		2 / 8.936		2 / 9.046		2 / 9.169		2 / 9.778		60 / 320.304		81 / 403.555							
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	8	-	-	1	1	-	1	-	-	-	1	1	-	-	-	-	2	1	1	-	-	-	1	1	-	-	1	1	-	60	81
Out	8	-	-	-	1	1	-	-	-	-	-	2	1	-	-	-	-	2	-	1	1	-	-	1	1	-	-	1	1	60	81
Footnotes:																															
⁽³⁾ 1) The current competitive production contract was awarded in April 2018. This contract includes radars being procured across several appropriations (OPN, SCN and FMS). The first radar will deliver 20 months after award. All follow-on radars will be delivered at a rate of one every other month. 2) SPQ-9B was moved from BLI 5110 to BLI 2026 in FY2004. Prior to 2004, the procurement of the first five AN/SPQ-9B systems was funded under the Mk 86 program under BLI 5110. The installation costs for four out of five of these installs were included in the 2026 budget. This explains the difference of 81 installations																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	P-1 Line Item Number / Title: 2026 / SPQ-9B Radar	Modification Number / Title: 1 / BR040 AN/SPQ-9B RADAR FMP EQUIPMENT
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
and only 77 procurements in this budget (delta 4). 3) AN/SPQ-9B systems are installed using Alteration Installation Teams (AITs) that customarily require funding for planning yard Design Services Allocation (DSA) up to two years prior to the year of installation and funding for Advanced Planning (AP) one year prior to installation, to support individual ship class drawing packages, ship checks and long lead material unique to the installation in order to maintain alignment with ship availability schedules. FY19 DSA for FY19 procurements has been reduced, and funding increased in FY20, due to shifts in ship availabilities. 4) AN/SPQ-9B total installation costs (including DSA, AP, and AIT Installation) have increased from approximately \$2.9M to approximately \$4.5M as a result of actual installation costs from initial installation of AN/SPQ-9B Radars onboard DDGs. Increased costs are primarily due to a number of unplanned new installation requirements (e.g. extensive mast, waveguide and platform efforts). In addition, AIT contracts are now awarded as Firm Fixed Price (FFP), which is also a contributing factor to the cost increase.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars							P-1 Line Item Number / Title: 2136 / AN/SQQ-89 Surf ASW Cmbt Sys					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: 0205620N, 0603553N				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1,878.247	100.222	114.344	125.237	0.000	125.237	127.182	132.416	135.022	137.721	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,878.247	100.222	114.344	125.237	0.000	125.237	127.182	132.416	135.022	137.721	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1,878.247	100.222	114.344	125.237	0.000	125.237	127.182	132.416	135.022	137.721	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	0.869	3.091	2.636	-	2.636	1.541	1.906	2.745	2.356	Continuing	Continuing
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Anti-Submarine Warfare (ASW) remains a Navy core competency in a dynamic and uncertain maritime environment. U.S. adversaries continue to develop asymmetric capabilities and capacities to deter, disrupt, or delay the entry of U.S. and allied naval forces, and pose a constant challenge as the Maritime Strategy is implemented. Evolving submarine technologies offer enhanced stealth, speed, endurance, weapons, and operational proficiency, trends foretelling that the adversary submarine of the future will have a significantly larger sphere of influence, while presenting less vulnerability to ASW forces. The effective offensive engagement range of the adversary submarine of the future will continue to match or outrange individual U.S. and multinational platform sensors and weapons in many tactical environments. Submarines are an increasing threat to all Naval and Allied ships, particularly modern diesel subs and faster torpedoes. Not only can the presence of potential hostile submarines delay naval combatant action until they are located and neutralized, submarines can also disrupt all seaborne logistics supply for any ground campaign as well as maritime commerce. ASW forces must be effective in all operating environments, ranging from the deep open ocean to the littorals, and are key to countering adversarial anti-access and area denial strategies.

The AN/SQQ-89(V) Surface Ship ASW Combat System provides integrated Undersea Warfare (USW) combat management, fire control, command and control, and on-board training to enable surface combatants to engage USW targets in both open ocean and littoral environments. The AN/SQQ-89(V) is a system comprised of many subsystems, which integrate the helo and its sensors, the ship's own organic sensors, weapons, torpedo detection, and a high fidelity Surface ASW Synthetic Trainer (SAST). Variants of the AN/SQQ-89(V) are currently in operation on practically all in-service CG 47 and DDG 51 Class Surface Combatants.

AN/SQQ-89A(V)15 Surface Ship USW Combat System Upgrade - Detailed Description:
A major upgrade to the AN/SQQ-89(V) legacy system, the AN/SQQ-89A(V)15 significantly decreases ship vulnerability to torpedo attack, improves surface ship USW shallow water warfighting capability in the littoral, and mitigates Commercial-Off-The-Shelf (COTS) obsolescence and supportability issues. The AN/SQQ-89A(V)15 upgrade was reported as a critical need for surface ASW operations by the Secretary of the Navy. A Fleet Forces Command (FFC) Urgent Operational Needs (UON) report identified the Fleet need for AN/SQQ-89A(V)15 upgrades. The need for the AN/SQQ-89A(V)15 is also articulated in the U.S. Indo-Pacific Command (INDOPACOM) Integrated Priorities List (IPL); in Office of the Chief of Naval Operations (OPNAV) 'Surface ASW Capabilities Build' funding priorities letters; in a U.S. Seventh Fleet bottom up review report; and in the U.S. Fleet Forces Command (USFFC) ASW Integrated Prioritized Capabilities List (IPCL).

The AN/SQQ-89A(V)15 upgrade is programmed for backfit on: select CG 47 Class Baseline 3 and 4 (CG59-73) ships via OPN BLI 0960 (Cruiser Modernization); DDG 51 Class Flight I/II (DDG51-78) ships via OPN BLI 0900 (DDG Modernization) and OPN BLI 2136 (represented here); and DDG 51 Class Flight IIA and follow (DDG79-132) ships via OPN BLI 2136 (represented here).

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars		P-1 Line Item Number / Title: 2136 / AN/SQQ-89 Surf ASW Cmbt Sys
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0205620N, 0603553N
Line Item MDAP/MAIS Code: N/A		
The AN/SQQ-89A(V)15 upgrade, developed under RDT&E,N PE 0205620N, capitalizes on previously fielded AN/SQQ-89(V)15 systems. The AN/SQQ-89A(V)15 is comprised of a tactical towed array sensor, the Multi-Function Towed Array (MFTA), and will replace standard, militarized, legacy components with Commercial-Off-The-Shelf (COTS) hardware to provide an ASW combat system with the capability for mid-frequency bistatic and multi-static sonar operations. The AN/SQQ-89A(V)15 features a mid-frequency bistatic hull/towed Sonar Echo Tracker Classifier (ETC); hull/towed Sonar with Acoustic Intercept (ACI) fused data for significantly improved torpedo defense; Handling & Stowage Group (H&SG) for MFTA operation; Torpedo Setting Panel (TSP); passive towed array processing; common sub/surface sensor performance and prediction; common NAVAIR/Surface Light Airborne Multi-Purpose System (LAMPS) processing; portable software; integrated supportability; and on-board training via the Surface ASW Synthetic Trainer (SAST). The AN/SQQ-89A(V)15 will be interoperable with AEGIS Weapons System (AWS) baselines; is Open Architecture (OA) compliant (meeting OA Level 3 requirements); provides significant reductions in weight, space, cooling, and power requirements over legacy AN/SQQ-89(V) systems; is Grade A shock qualified; supports Digital Fire Control Integration (DFCI) capability; and is integrated with the Battle Force Tactical Trainer (BFTT). AN/SQQ-89A(V)15 Technology Insertion/Refresh. Additionally, to be effective against increasingly stealthy threats in an often ambiguous undersea environment, future sensors must be environmentally adaptive, have very low false alarm rates, and exploit the full range of current and future submarine detection vulnerabilities. Via the Advanced Capability Build (ACB) process under RDT&E,N PE 0205620N (ACB-13, ACB-15, ACB-17, etc.), these types of maturing/proven USW technologies will be folded into the AN/SQQ-89A(V)15 production and future technology refresh programs (fielded starting in FY 2016). Leveraging the submarine community's Acoustic Rapid Commercial-off-the-Shelf (COTS) Insertion (ARCI) process, the AN/SQQ-89A(V)15 Tech Refresh program procures upgraded software/hardware technology for all CG 47/DDG 51 Class surface combatant platforms with a previously fielded AN/SQQ-89A(V)15. This process has proven to manage obsolescence, take advantage of commercial development efforts, and continue to pace the threat to ensure systems remain effective well into the 21st century. Studies of the submarine and surface ASW technology show that system upgrades are most critical 6-9 years after initial installation of the AN/SQQ-89A(V)15, as failure rates within this period begin to rise. Establishing a stable technology refresh program will ensure the Fleet maintains critical Undersea Warfare capability (threat-pacing improvements) and productivity (Increased Operational Availability (Ao)) while reducing the Total Ownership Cost (TOC) to the Navy. AN/SQQ-89A(V)15 YEAR TO YEAR FUNDING PROFILE FROM PROCUREMENT TO INSTALL: 1st Year - Procurement of Equipment. 2nd Year - Ordering of incidental installation material and perform mandatory planning yard design tasks and ship checks. This is shown as a quantity of "0" with requested funds in the year before the installation of equipment. 3rd Year - Installation of Equipment. An average, aggregate AN/SQQ-89A(V)15 shipset unit cost is comprised of multiple contract/funding vehicles. Additionally, these unit costs can vary as they are dependent on the pre-existing legacy AN/SQQ-89(V) configuration of each ship. AN/SQQ-89A(V)15 production shipset delivery time is 18 months after contract award. Each subsequent system procured in an FY is delivered one month later than the previous system. Delivery of equipment to the shipyard is preferably no later than 30-90 days prior to a CONUS (Continental U.S.) installation start date, and no later than 120 days prior to a non-CONUS installation start date. Installations are assigned to specific ships as per Fleet priorities/requirements, and based on ship availabilities. Fleet availability periods to support a major upgrade such as the AN/SQQ-89A(V)15 normally occur only once every three years in a ship's schedule. [P40A / DB400 - DDG51 CLASS SYSTEM COMPONENTS - SQQ-89A(V)15]: DB400 Cost Elements/Descriptions as Follows: [P40A / SYSTEM UPDATES (NON RECURRING ENGINEERING)]: 1.1 Consists of the NRE efforts associated with the technology refresh/replacement of legacy AN/SQQ-89(V) equipment with updated Commercial-Off-The-Shelf (COTS) processors, including material procurement, fabrication, and integration of Government Furnished Property (GFP), as performed by the prime contractor. Hardware reviews will be conducted on an annual basis to determine if hardware changes are warranted based on Commercial-Off-The-Shelf (COTS) obsolescence and to identify applicable state-of-the-practice hardware components. This line also includes start-up/transition funding required for the AN/SQQ-89(V) prime in the first year of each new production/design agent contract. [P40A / EC'S (ENGINEERING CHANGES)]: 1.2 Consists of Engineering Change Proposals (ECPs) and hardware/software changes/upgrades to previously fielded and in-production AN/SQQ-89A(V)15 systems. Funding will be used to support non-recurring first article test efforts associated with the changing Commercial-Off-The-Shelf (COTS) environment as well as Reliability, Maintainability, and Availability (RM&A) modifications requested by the Fleet; correct deficiencies identified through Fleet use; upgrade unreliable components; replace obsolete components; and correct design errors found during testing.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars		P-1 Line Item Number / Title: 2136 / AN/SQQ-89 Surf ASW Cmbt Sys
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0205620N, 0603553N
Line Item MDAP/MAIS Code: N/A		
This line includes funding for a major Multi-Function Towed Array (MFTA) Engineering Change (EC) which was required to address and resolve deficiencies in the current MFTA TB-37 version's reliability (by changing from a Towed Array Integrated Product Team (TAIPT) telemetry to a more reliable telemetry), as well as address and resolve parts obsolescence issues. The MFTA TB-37 is the towed array version that is currently in production and employed by the AN/SQQ-89A(V)15 USW Combat System. - In FY 2019, funding was required to complete the ECP, assemble the array and towed array receiver, conduct array and receiver acceptance test & evaluation efforts to certify they meet current AN/SQQ-89A(V)15 USW Combat System performance envelope specifications, and implement the EC in production. [P40A / ILS (INTEGRATED LOGISTICS SUPPORT)]: 1.3 Funding is provided for all ILS planning and coordination elements associated with every AN/SQQ-89A(V)15 modification/procurement/installation, including: configuration management and control of the hardware and software associated with each modification such as Maintenance and Material Management (3M); planned and corrective maintenance procedures and drawings; supporting the procurement of upgrades to Technical Training Equipment (TTE) for shore training sites; changes to maintenance concepts and associated updates to technical documentation, such as technical manuals; development of revisions to both operator and maintenance training materials as part of the initial training curriculum development; revisions to the Navy Training System Plan; initial conduct of instructor training (train-the-trainer) until such time that the training community assumes the responsibility; modifications to supply support related provisioning data and identification of related changes to Allowance Parts Lists (APLs) and Program Support Data (PSD) spares procurement lists; and Packaging, Handling, Storage and Transportation (PHST) support during the procurement, Installation and Checkout (INCO), and testing stages of the AN/SQQ-89A(V)15 to meet evolving capabilities. [P40A / AIE (AEGIS INTEGRATION EVENTS)]: 1.4 Recurring engineering support services associated with AN/SQQ-89A(V)15 equipment at the Surface Combatant Systems Center (SCSC) Wallops Island, VA test facility to support land-based testing, external interface testing, and AEGIS Integration Event (AIE) production systems testing for interoperability risk reduction analysis purposes as necessary to certify that each incremental AN/SQQ-89A(V)15 hardware/software build is compatible with multiple AEGIS Weapons System (AWS) baselines prior to installation. [P40A / CSSQT (COMBAT SYSTEMS SHIP QUALIFICATION TRIALS)]: 1.5 CSSQTs are required per Naval Sea Systems Instruction 90963.1C for all ships undergoing significant conversion/modernization availabilities. CSSQTs consist of a series of at-sea exercises and tests to verify/certify the AN/SQQ-89A(V)15 or AN/SQQ-89A(V)15 Technology Refresh system has been installed properly and can be operated and maintained safely and effectively. CSSQTs follow every AN/SQQ-89A(V)15 FLT I/II/IIA first-of-its-kind or AN/SQQ-89A(V)15 Technology Refresh installation. CSSQT costs are dependent on the number, scope and complexity of CSSQTs planned per Fiscal Year (FY). CSSQTs planned for AN/SQQ-89A(V)15 FLT I/II/IIA installs are higher in cost, scope and complexity than those for AN/SQQ-89A(V)15 Technology Refreshes. FY 2019 and FY 2020 costs are broken down as follows: - In FY 2019 (\$4.903M), five (5) CSSQTs are planned (two for AN/SQQ-89A(V)15 FLT I/II/IIA installs and three for AN/SQQ-89A(V)15 Technology Refresh installs). - In FY 2020 (\$3.791M), four (4) CSSQTs are planned (one for AN/SQQ-89A(V)15 FLT IIA installs and three for AN/SQQ-89A(V)15 Technology Refresh installs). [P40A / FOT&E (FOLLOW-ON OPERATIONAL TEST & EVALUATION)]: 1.6 Represents the final independent test of each new increment of the AN/SQQ-89A(V)15 production baseline (i.e. ACB-13, ACB-15, ACB-17, etc.) conducted in support of the Director, Operational Test and Evaluation Title X review and report to the Congress. Follow-On Operational Test & Evaluation events are conducted to ensure each increment meets the operational effectiveness and suitability requirements for each incremental AN/SQQ-89 ACB production baseline, along with its readiness and performance goals. Each test cycle is planned the year after initial ACB baseline fielding to allow time for installation and to verify performance prior to conducting the FOT&E. FOT&E costs are primarily biennial driven, and dependent on the scope and complexity of the next new AN/SQQ-89 Advanced Capability Build (ACB) production baseline release being tested. FY 2019 and FY 2020 costs are broken down as follows: - In FY 2019 (\$2.048M), funding is required to conduct an FOT&E event on the next new AN/SQQ-89A(V)15 ACB production baseline release.		

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Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars		P-1 Line Item Number / Title: 2136 / AN/SQQ-89 Surf ASW Cmbt Sys
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0205620N, 0603553N
Line Item MDAP/MAIS Code: N/A		
- There is no requirement to conduct an FOT&E event in FY 2020. [P40A / FLTASWTRACEN (FLEET ASW TRAINING CENTER)]: 1.7 Upgrade of AN/SQQ-89A(V)15 training equipment for the Fleet ASW Training Center, San Diego, CA. Training system improvements are a critical factor in achieving warfighter competencies and mission readiness. Equipment must be upgraded periodically to ensure continued support of the latest backfit Advanced Capability Build (ACB) and AEGIS Weapon System (AWS) baselines and to implement Fleet prioritized warfighting training improvements to meet evolving capabilities. FLTASWTRACEN costs are dependent on the scope and complexity of training equipment to be upgraded to ensure continued support of the latest AN/SQQ-89A(V)15 backfit Advanced Capability Build (ACB) and AEGIS Weapon System (AWS) baselines. [P40A / SSES (SURFACE SHIP ENGINEERING SITE)]: 1.8 Procurement of AN/SQQ-89A(V)15 equipment for land-based sites, including the SSES at the prime vendor’s facility, to support production system integration and interoperability testing. Equipment includes simulation hardware, test tools, fabrication and test of mod kits (hardware and operational software), and laboratory equipment. Equipment must be upgraded periodically to ensure continued support of the latest backfit AN/SQQ-89A(V)15 Advanced Capability Build (ACB) and AEGIS Weapon System (AWS) baselines. SSES costs are primarily biennial driven, and dependent on the scope and complexity of shore site equipment to be upgraded to ensure continued support of the latest AN/SQQ-89A(V)15 backfit Advanced Capability Build (ACB) and AEGIS Weapon System (AWS) baselines. FY 2019 and FY 2020 costs are broken down as follows: - There is no requirement to upgrade equipment at the SSES land-based site in FY 2019. - In FY 2020 (\$2.948M), funding is required to upgrade the equipment at the SSES land-based site. [P40A / SCSC (SURFACE COMBATANT SYSTEMS CENTER)]: 1.9 Procurement of AN/SQQ-89A(V)15 equipment for land-based sites including the Surface Combatant Systems Center (SCSC) at Wallops Island, VA, to support production system integration and interoperability testing. Equipment includes simulation hardware, test tools, fabrication and test of mod kits (hardware and operational software), and laboratory equipment. Equipment must be upgraded periodically to ensure continued support of the latest backfit Advanced Capability Build (ACB) and AEGIS Weapon System (AWS) baselines. SCSC Wallops costs are primarily biennial driven, and dependent on the scope and complexity of shore site equipment to be upgraded to ensure continued support of the latest AN/SQQ-89A(V)15 backfit Advanced Capability Build (ACB) and AEGIS Weapon System (AWS) baselines. FY 2019 and FY 2020 costs are broken down as follows: - In FY 2019 (\$1.910M), funding is required to upgrade the equipment at the SCSC Wallops Island land-based site. - There is no requirement to upgrade equipment at the SCSC Wallops Island land-based site in FY 2020. [P40A / MFTA (MULTI-FUNCTION TOWED ARRAY) MAJOR EQUIPMENT]: 1.10 Procurement of MFTA full module sets required for expeditious replacement in the event of major damage (the TB-37 MFTA component is considered a principle item). The MFTA is a key component of the AN/SQQ-89A(V)15 USW Combat System upgrade on Surface Combatants and enables ships to have active bi-statics, Continuous Active Sonar (CAS), adaptive beamforming, passive bellringers, and the use of new sensors for advanced torpedo detection. FY 2020 and follow MFTA procurements are of the TB-37X version (major engineering change to be completed in FY 2019) which is required to address and resolve deficiencies in the current MFTA TB-37 version's reliability (by changing from a Towed Array Integrated Product Team (TAIPT) telemetry to a more reliable telemetry), address and resolve parts obsolescence issues, as well as procure additional MFTA TB-37X handling sensors and non-acoustic node (NAS) hardware, and the packaging modifications needed to fit the new components. [P40A / DB830 - PRODUCTION ENGINEERING - SQQ-89A(V)15]: DB830 Cost Element/Description as Follows: [P40A / PRODUCTION ENGINEERING]: 2.1 Funding is for AN/SQQ-89A(V)15 program In-Service Engineering Agent (ISEA), Software Support Activity (SSA), Acquisition Engineering Agent (AEA), and Technical Design Agent (TDA) efforts in performing the following functions: writing of contracts; review and evaluation of production design data, documentation and Contract Data Requirements Lists (CDRLs);		

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Line Item MDAP/MAIS Code: N/A		
letting of production contract awards; on-site engineering support at the prime integrator's facility; production configuration control and quality assurance (Production Inspection Test (PIT) and Production Reliability Acceptance Test (PRAT)); witnessing of segment/system integration tests and preparation of reports; conduct of first article and factory acceptance tests; collection of performance metrics; generation/assessment of Software Problem Reports (SPRs) and coordination with vendors; value and maintenance engineering; coordination with AEGIS regarding interface definition and ship integration; support safety review and AEGIS Integration Events (AIE); provide plans, procedures and inputs to support Information Assurance (IA) mandates; provide status reports and technical briefings; support meetings with program office; and all other production support efforts directly related to delivery of AN/SQQ-89A(V)15 software and hardware.		
[P40A / DB900 - CONSULTING SERVICES - SQQ-89A(V)15]: DB900 Cost Element/Description as Follows:		
[P40A / CONSULTING SERVICES]: 3.1 Funding to provide assistance in the following areas: program and financial management; system specification validation; production planning; business case and market analyses; vendor cost, schedule, performance, production, and contract deliverable monitoring; installation planning and coordination; Integrated Logistics Support (ILS) asset management, planning, documentation, and coordination; and evaluation of Engineering Change Proposals (ECPs).		
[P3A / AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE]: See the following:		
AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE - COST CODE DB400 PROCUREMENT: Procurement of AN/SQQ-89A(V)15 equipment for subsequent backfit installation on all DDG79-112 Flight IIA ships. An average, aggregate AN/SQQ-89A(V)15 unit cost is indicated, however, it should be noted that this cost is comprised of multiple contract/funding vehicles. Additionally, the subdivision of these unit costs to a specific ship can vary as they are dependent on the pre-existing configuration of each ship.		
AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE - COST CODE DB6IN INSTALLATION: Funding is for the full-up physical installation of the major AN/SQQ-89A(V)15 upgrade, the ordering of incidental installation material in the year prior to the actual installation, and Design Services Allocation (DSA) required for mandatory planning yard design tasks and ship checks that must be completed within the one year period leading up to the actual installation in the shipyard.		
[P3A / AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE]: See the following:		
AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE - COST CODE DB400 PROCUREMENT: Procurement of AN/SQQ-89A(V)15 equipment for subsequent backfit installation on select DDG51-78 FLT I/II ships. An average, aggregate AN/SQQ-89A(V)15 unit cost is indicated, however, it should be noted that this cost is comprised of multiple contract/funding vehicles. Additionally, the subdivision of these unit costs to a specific ship can vary as they are dependent on the pre-existing configuration of each ship.		
AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE - COST CODE DB6IN INSTALLATION: Funding is for the full-up physical installation of the major AN/SQQ-89A(V)15 upgrade, the ordering of incidental installation material in the year prior to the actual installation, and Design Services Allocation (DSA) required for mandatory planning yard design tasks and ship checks that must be completed within the one year period leading up to the actual installation in the shipyard.		
[P3A - 3 / AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE]: See the following:		
AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE - COST CODE DB400 PROCUREMENT: Procurement of a subset of AN/SQQ-89A(V)15 equipment, specifically the Multi-Function Towed Array (MFTA) and Handling & Stowage Group (H&SG), for subsequent installation on all DDG113-132 ships during their Post Delivery Availability (PDA) or Post Shakedown Availability (PSA) periods, to upgrade the ASW sonar suite from an AN/SQQ-89(V)15 configuration to the AN/SQQ-89A(V)15 configuration.		
AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE - COST CODE DB6IN INSTALLATION: Physical installation of the H&SG and MFTA on DDG113-132 ships during their PDA or PSA period which includes the installation of an egress, under-deck stiffeners, cables, bulkheads, opening and closing of the transom, the winch, levelwind, fairlead and control station, decking, painting, and final system testing, the ordering of incidental installation material in the year prior to the actual installation, and Design Services Allocation (DSA) required for mandatory planning yard design tasks and ship checks that must be completed within the one year period leading up to the actual installation in the shipyard.		

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ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0205620N, 0603553N
Line Item MDAP/MAIS Code: N/A		
[P3A - 4 / AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH]: See the following: AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH - COST CODE DB400 PROCUREMENT: Procurement of software/hardware technology upgrades for all CG47/DDG51 Class surface combatant platforms with a previously fielded AN/SQQ-89A(V)15, as necessary to manage obsolescence, take advantage of commercial development efforts, and continue to pace the threat and ensure the system remains effective well into the 21st century. Updating the hardware and software will ensure the Fleet maintains critical Undersea Warfare capability while reducing obsolescence. Establishing a technology refresh program provides a method for rapid response to meet Fleet Anti-Submarine Warfare (ASW) requirements. AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH - COST CODE DB6IN INSTALLATION: Funding is for the physical installation of the AN/SQQ-89A(V)15 Technology Refresh upgrade, the ordering of incidental installation material in the year prior to the actual installation, and Design Services Allocation (DSA) required for mandatory planning yard design tasks and ship checks that must be completed within the one year period leading up to the actual installation in the shipyard.		

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ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: 0205620N, 0603553N			

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	AN/SQQ-89(V) SURFACE ASW COMBAT SYSTEM	P-5a			- / 1,322.435	- / 28.278	- / 32.679	- / 29.154	- / -	- / 29.154
P-3a	1 / AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE (Warfighting Capability)				- / 427.332	- / 23.437	- / 6.737	- / 17.830	- / 0.000	- / 17.830
P-3a	2 / AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE (Warfighting Capability)				- / 29.789	- / 10.904	- / 23.785	- / 12.764	- / 0.000	- / 12.764
P-3a	3 / AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE (Warfighting Capability)				- / 36.914	- / 15.705	- / 15.301	- / 16.979	- / 0.000	- / 16.979
P-3a	4 / AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH (Warfighting Capability)				- / 61.777	- / 21.898	- / 35.842	- / 48.510	- / 0.000	- / 48.510
P-40	Total Gross/Weapon System Cost				- / 1,878.247	- / 100.222	- / 114.344	- / 125.237	- / 0.000	- / 125.237

Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	AN/SQQ-89(V) SURFACE ASW COMBAT SYSTEM	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE (Warfighting Capability)				- / 1.189	- / 5.897	- / 12.807	- / 1.255	- / 6.233	- / 502.717
P-3a	2 / AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE (Warfighting Capability)				- / 31.874	- / 39.667	- / 13.462	- / 14.935	- / 0.000	- / 177.180
P-3a	3 / AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE (Warfighting Capability)				- / 17.284	- / 17.595	- / 17.913	- / 18.235	- / 10.015	- / 165.941
P-3a	4 / AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH (Warfighting Capability)				- / 42.533	- / 37.634	- / 61.043	- / 68.742	Continuing	Continuing
P-40	Total Gross/Weapon System Cost				- / 127.182	- / 132.416	- / 135.022	- / 137.721	Continuing	Continuing

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.
 Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
 The PB-20 budget request primarily supports the upgrade of legacy, in-service AN/SQQ-89(V) systems to the superior AN/SQQ-89A(V)15 USW Combat System baseline. Additionally, this budget line item will be responsible for periodic technology refresh initiatives in conjunction with previously fielded AN/SQQ-89A(V)15 systems across all CG 47 and DDG 51 Class platforms (software/hardware technology upgrades/ insertions) to pace the threat and remain effective well into the 21st century.

FY 2019 TO FY 2020 INCREASE/DECREASE STATEMENT:
 - FY 2019 (\$114.344 million) to FY 2020 (\$125.237 million) increase is primarily due to the net effect of changes to:

Hardware Buys (+4):
 - 1 additional A(V)15 FLT IIA shipset buy
 - 1 fewer A(V)15 FLT I/II shipset buy

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars		P-1 Line Item Number / Title: 2136 / AN/SQQ-89 Surf ASW Cmbt Sys
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0205620N, 0603553N
Line Item MDAP/MAIS Code: N/A		
- 2 additional A(V)15 Tech Refresh shipset buys - 2 additional standalone Multi-Function Towed Array (MFTA) Major Equipment buys - 1 additional Surface Ship Engineering Site (SSES) upgrade - 1 fewer Surface Combatant Systems Center (SCSC) Wallops upgrade Installations (-1): - 1 fewer A(V)15 FLT I/II shipset install Test Events (-2): - 1 fewer Follow-On Operational Test & Evaluation (FOT&E) event - 1 fewer Combat System Ship Qualification Trial (CSSQT) event The FY 2019 budget reflects -\$1.115M Congressional reduction for installation cost growth. Additionally, starting in FY 2019, AN/SQQ-89A(V)15 DDG113 and Follow MFTA/Handler Upgrade and AN/SQQ-89A(V)15 Technology Insertion/Refresh shipset installation costs have been reduced to reflect actual costs associated with the transition of the shipyards from a Multi-Ship/Multi-Option (MS/MO) to a Firm Fixed Price (FFP) contracting strategy. Starting in FY 2020, the cost to procure the Multi-Function Towed Array (MFTA) (major subsystem within the AN/SQQ-89A(V)15) will increase. This increase is due to the transition to the significantly improved MFTA TB-37X array from the MFTA TB-37 array. This transition is required to address and resolve deficiencies in the current MFTA TB-37 array's reliability (by changing from a Towed Array Integrated Product Team (TAIPT) telemetry to a more reliable telemetry), address and resolve parts obsolescence issues, and driven by the requirement to procure additional MFTA TB-37X handling sensors and non-acoustic node (NAS) hardware, and the packaging modifications needed to fit the new components. This change resulted in an increase to the shipset unit costs associated with the following AN/SQQ-89A(V)15 modification items: AN/SQQ-89A(V)15 DDG51-78 FLT I/II (Select) Upgrade, AN/SQQ-89A(V)15 DDG79-112 FLT IIA Upgrade, and AN/SQQ-89A(V)15 DDG113 and Follow MFTA/Handler Upgrade. FY 2019 to FY 2020 AN/SQQ-89A(V)15 Technology Insertion/Refresh system cost increase is attributable to the incorporation of new System Security requirements.		

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2									P-1 Line Item Number / Title: 2136 / AN/SQQ-89 Surf ASW Cmbt Sys						Aggregated Items Title: AN/SQQ-89(V) SURFACE ASW COMBAT SYSTEM					
Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
1) DB400 - DDG51 CLASS SYSTEM COMPONENTS - SQQ-89A(V)15																				
1.1) SYSTEM UPDATES (NON RECURRING ENGINEERING) ⁽¹⁾			-	-	17.472	-	-	1.848	-	-	1.529	-	-	1.575	-	-	-	-	-	1.575
1.2) EC'S (ENGINEERING CHANGES) ⁽²⁾			-	-	1,095.635	-	-	6.448	-	-	11.731	-	-	2.171	-	-	-	-	-	2.171
1.3) ILS (INTEGRATED LOGISTICS SUPPORT) ⁽³⁾			-	-	39.951	-	-	3.086	-	-	3.096	-	-	3.065	-	-	-	-	-	3.065
1.4) AIE (AEGIS INTEGRATION EVENTS) ⁽⁴⁾			-	-	22.955	-	-	2.587	-	-	2.042	-	-	2.001	-	-	-	-	-	2.001
1.5) CSSQT (COMBAT SYSTEMS SHIP QUALIFICATION TRIALS) ⁽⁵⁾			-	-	31.349	-	-	6.686	-	-	4.903	-	-	3.791	-	-	-	-	-	3.791
1.6) FOT&E (FOLLOW-ON OPERATIONAL TEST & EVALUATION) ⁽⁶⁾			-	-	6.485	-	-	-	-	-	2.048	-	-	-	-	-	-	-	-	-
1.7) FLTASWTRACEN (FLEET ASW TRAINING CENTER) ⁽⁷⁾			-	-	3.472	-	-	0.945	-	-	0.973	-	-	0.992	-	-	-	-	-	0.992
1.8) SSES (SURFACE SHIP ENGINEERING SITE) ⁽⁸⁾			-	-	12.165	-	-	2.032	-	-	-	-	-	2.948	-	-	-	-	-	2.948
1.9) SCSC (SURFACE COMBATANT SYSTEMS CENTER) ⁽⁹⁾			-	-	4.258	-	-	-	-	-	1.910	-	-	-	-	-	-	-	-	-
1.10) MFTA (MULTI-FUNCTION TOWED ARRAY) MAJOR EQUIPMENT ^{(10)(t)}	A		-	-	-	-	-	-	-	-	-	4,134K	2	8.267	-	-	-	4,134K	2	8.267
Subtotal: 1) DB400 - DDG51 CLASS SYSTEM COMPONENTS - SQQ-89A(V)15			-	-	1,233.742	-	-	23.632	-	-	28.232	-	-	24.810	-	-	-	-	-	24.810

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LI 2136 - AN/SQQ-89 Surf ASW Cmbt Sys
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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	P-1 Line Item Number / Title: 2136 / AN/SQQ-89 Surf ASW Cmbt Sys	Aggregated Items Title: AN/SQQ-89(V) SURFACE ASW COMBAT SYSTEM
(6) 1.6 FOT&E (Follow-On Operational Test & Evaluation): Represents the final independent test of each new increment of the AN/SQQ-89A(V)15 production baseline (i.e. ACB-13, ACB-15, ACB-17, etc.) conducted in support of the Director, Operational Test and Evaluation Title X review and report to the Congress. Follow-On Operational Test & Evaluation events are conducted to ensure each increment meets the operational effectiveness and suitability requirements for each incremental AN/SQQ-89 ACB production baseline, along with its readiness and performance goals. Each test cycle is planned the year after initial ACB baseline fielding to allow time for installation and to verify performance prior to conducting the FOT&E. FOT&E costs are primarily biennial driven, and dependent on the scope and complexity of the next new AN/SQQ-89 Advanced Capability Build (ACB) production baseline release being tested. FY 2019 and FY 2020 costs are broken down as follows: In FY 2019 (\$2.048M), funding is required to conduct an FOT&E event on the next new AN/SQQ-89A(V)15 ACB production baseline release. There is no requirement to conduct an FOT&E event in FY 2020. (7) 1.7 FLTASWTRACEN (Fleet ASW Training Center, San Diego, CA): Upgrade of AN/SQQ-89A(V)15 training equipment for the Fleet ASW Training Center, San Diego, CA. Training system improvements are a critical factor in achieving warfighter competencies and mission readiness. Equipment must be upgraded periodically to ensure continued support of the latest backfit Advanced Capability Build (ACB) and AEGIS Weapon System (AWS) baselines and to implement Fleet prioritized warfighting training improvements to meet evolving capabilities. FLTASWTRACEN costs are dependent on the scope and complexity of training equipment to be upgraded to ensure continued support of the latest AN/SQQ-89A(V)15 backfit Advanced Capability Build (ACB) and AEGIS Weapon System (AWS) baselines. (8) 1.8 SSES (Surface Ship Engineering Site, Prime Vendor's Facility): Procurement of AN/SQQ-89A(V)15 equipment for land-based sites, including the SSES at the prime vendor's facility, to support production system integration and interoperability testing. Equipment includes simulation hardware, test tools, fabrication and test of mod kits (hardware and operational software), and laboratory equipment. Equipment must be upgraded periodically to ensure continued support of the latest backfit AN/SQQ-89A(V)15 Advanced Capability Build (ACB) and AEGIS Weapon System (AWS) baselines. SSES costs are primarily biennial driven, and dependent on the scope and complexity of shore site equipment to be upgraded to ensure continued support of the latest AN/SQQ-89A(V)15 backfit Advanced Capability Build (ACB) and AEGIS Weapon System (AWS) baselines. FY 2019 and FY 2020 costs are broken down as follows: There is no requirement to upgrade equipment at the SSES land-based site in FY 2019. In FY 2020 (\$2.948M), funding is required to upgrade the equipment at the SSES land-based site. (9) 1.9 SCSC (Surface Combatant Systems Center, Wallops Island, VA): Procurement of AN/SQQ-89A(V)15 equipment for land-based sites including the Surface Combatant Systems Center (SCSC) at Wallops Island, VA, to support production system integration and interoperability testing. Equipment includes simulation hardware, test tools, fabrication and test of mod kits (hardware and operational software), and laboratory equipment. Equipment must be upgraded periodically to ensure continued support of the latest backfit Advanced Capability Build (ACB) and AEGIS Weapon System (AWS) baselines. SCSC Wallops costs are primarily biennial driven, and dependent on the scope and complexity of shore site equipment to be upgraded to ensure continued support of the latest AN/SQQ-89A(V)15 backfit Advanced Capability Build (ACB) and AEGIS Weapon System (AWS) baselines. FY 2019 and FY 2020 costs are broken down as follows: In FY 2019 (\$1.910M), funding is required to upgrade the equipment at the SCSC Wallops Island land-based site. There is no requirement to upgrade equipment at the SCSC Wallops Island land-based site in FY 2020. (10) 1.10 MFTA (MULTI-FUNCTION TOWED ARRAY) MAJOR EQUIPMENT: Procurement of MFTA full module sets required for expeditious replacement in the event of major damage (the TB-37 MFTA component is considered a principle item). The MFTA is a key component of the AN/SQQ-89A(V)15 USW Combat System upgrade on Surface Combatants and enables ships to have active bi-statics, Continuous Active Sonar (CAS), adaptive beamforming, passive bellringers, and the use of new sensors for advanced torpedo detection. FY 2020 and follow MFTA procurements are of the TB-37X version (major engineering change to be completed in FY 2019) which is required to address and resolve deficiencies in the current MFTA TB-37 version's reliability (by changing from a Towed Array Integrated Product Team (TAIPT) telemetry to a more reliable telemetry), address and resolve parts obsolescence issues, as well as procure additional MFTA TB-37X handling sensors and non-acoustic node (NAS) hardware, and the packaging modifications needed to fit the new components. (11) 2.1 PRODUCTION ENGINEERING: Funding is for AN/SQQ-89A(V)15 program In-Service Engineering Agent (ISEA), Software Support Activity (SSA), Acquisition Engineering Agent (AEA), and Technical Design Agent (TDA) efforts in performing the following functions: writing of contracts; review and evaluation of production design data, documentation and Contract Data Requirements Lists (CDRLs); letting of production contract awards; on-site engineering support at the prime integrator's facility; production configuration control and quality assurance (Production Inspection Test (PIT) and Production Reliability Acceptance Test (PRAT)); witnessing of segment/system integration tests and preparation of reports; conduct of first article and factory acceptance tests; collection of performance metrics; generation/assessment of Software Problem Reports (SPRs) and coordination with vendors; value and maintenance engineering; coordination with AEGIS regarding interface definition and ship integration; support safety review and AEGIS Integration Events (AIE); provide plans, procedures and inputs to support Information Assurance (IA) mandates; provide status reports and technical briefings; support meetings with program office; and all other production support efforts directly related to delivery of AN/SQQ-89A(V)15 software and hardware. (12) 3.1 CONSULTING SERVICES: Funding to provide assistance in the following areas: program and financial management; system specification validation; production planning; business case and market analyses; vendor cost, schedule, performance, production, and contract deliverable monitoring; installation planning and coordination; Integrated Logistics Support (ILS) asset management, planning, documentation, and coordination; and evaluation of Engineering Change Proposals (ECPs).		

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2				P-1 Line Item Number / Title: 2136 / AN/SQQ-89 Surf ASW Cmbt Sys						Aggregated Items: AN/SQQ-89(V) SURFACE ASW COMBAT SYSTEM			
Item Number / Title [DODIC]	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date	
1) DB400 - DDG51 CLASS SYSTEM COMPONENTS - SQQ-89A(V)15													
1.10) MFTA (MULTI-FUNCTION TOWED ARRAY) MAJOR EQUIPMENT ⁽¹⁰⁾		2020	TBD (Competitive Procurement) / TBD (Competitive Procurement)	C / FFP	NAVSEA	Mar 2020	Sep 2021	2	4,134K	Y		Mar 2018	

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Exhibit P-3a, Individual Modification: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2				P-1 Line Item Number / Title: 2136 / AN/SQQ-89 Surf ASW Cmbt Sys					Modification Number / Title: 1 / AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	427.332	23.437	6.737	17.830	0.000	17.830	1.189	5.897	12.807	1.255	6.233	502.717
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	427.332	23.437	6.737	17.830	0.000	17.830	1.189	5.897	12.807	1.255	6.233	502.717
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	427.332	23.437	6.737	17.830	0.000	17.830	1.189	5.897	12.807	1.255	6.233	502.717
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-

Description:
[AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE] See the following:

Starting in FY 2020, the cost to procure the Multi-Function Towed Array (MFTA) (major subsystem within the AN/SQQ-89A(V)15) will increase. This increase is due to the transition to the significantly improved MFTA TB-37X array from the MFTA TB-37 array. This transition is required to address and resolve deficiencies in the current MFTA TB-37 array's reliability (by changing from a Towed Array Integrated Product Team (TAIPT) telemetry to a more reliable telemetry), address and resolve parts obsolescence issues, and driven by the requirement to procure additional MFTA TB-37X handling sensors and non-acoustic node (NAS) hardware, and the packaging modifications needed to fit the new components. This change resulted in an increase to the shipset unit costs associated with the following AN/SQQ-89A(V)15 modification items: AN/SQQ-89A(V)15 DDG51-78 FLT I/II (Select) Upgrade, AN/SQQ-89A(V)15 DDG79-112 FLT IIA Upgrade, and AN/SQQ-89A(V)15 DDG113 and Follow MFTA/Handler Upgrade.

AN/SQQ-89A(V)15 YEAR TO YEAR FUNDING PROFILE FROM PROCUREMENT TO INSTALL:

1st Year - Procurement of Equipment.

2nd Year - Ordering of incidental installation material and perform mandatory planning yard design tasks and ship checks. This is shown as a quantity of "0" with requested funds in the year before the installation of equipment.

3rd Year - Installation of Equipment.

AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE - COST CODE DB400 PROCUREMENT: Procurement of AN/SQQ-89A(V)15 equipment for subsequent backfit installation on all DDG79-112 Flight IIA ships. An average, aggregate AN/SQQ-89A(V)15 unit cost is indicated, however, it should be noted that this cost is comprised of multiple contract/funding vehicles. Additionally, the subdivision of these unit costs to a specific ship can vary as they are dependent on the pre-existing configuration of each ship.

AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE - COST CODE DB6IN INSTALLATION: Funding is for the full-up physical installation of the major AN/SQQ-89A(V)15 upgrade, the ordering of incidental installation material in the year prior to the actual installation, and Design Services Allocation (DSA) required for mandatory planning yard design tasks and ship checks that must be completed within the one year period leading up to the actual installation in the shipyard.

The AN/SQQ-89A(V)15 requires a CNO (Chief of Naval Operations) availability period. The installation is accomplished by Alteration Installation Team (AIT) and shipyard personnel together. The AIT personnel are responsible for the removal of all AN/SQQ-89(V) legacy equipment, addition and modification of foundations, and installation, connectorization, and test of all new AN/SQQ-89A(V)15 equipment. The

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	P-1 Line Item Number / Title: 2136 / AN/SQQ-89 Surf ASW Cmbt Sys	Modification Number / Title: 1 / AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
shipyard personnel are responsible for all rigging activities, hull access cuts, and installation of the Handling & Stowage Gear (H&SG) on non-tailed (i.e. no towed array) DDG51 Class Flight IIA hulls, which is required for the operation of the tactical towed sonar, the Multi-Function Towed Array (MFTA). AN/SQQ-89A(V)15 production shipset delivery time is 18 months after contract award. Each subsequent system procured in an FY is delivered one month later than the previous system. Delivery of equipment to the shipyard is preferably no later than 30-90 days prior to a CONUS (Continental U.S.) installation start date and no later than 120 days prior to a non-CONUS installation start date. Installations are assigned to specific ships as per Fleet priorities/requirements, and based on ship availabilities, as identified in the Fleet Modernization Program Management Information System (FMPMIS). Significant maintenance availability periods to support a major upgrade such as the AN/SQQ-89A(V)15 normally occur only once every three years in a ship's schedule.		

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2					P-1 Line Item Number / Title: 2136 / AN/SQQ-89 Surf ASW Cmbt Sys					Modification Number / Title: 1 / AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: Upgrade of legacy AN/SQQ-89(V) systems on all DDG79-112 ships to AN/SQQ-89A(V)15 configuration					Modification Type: Warfighting Capability				Related RDT&E PEs: 0205620N				
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	
Procurement													
<i>Modification Item 1 of 1:</i> AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE													
B Kits													
Recurring													
1.1.1) AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE - NonOrganic ⁽¹³⁾	31 / 286.722	1 / 11.328	- / -	1 / 12.139	- / -	1 / 12.139	- / -	- / -	1 / 12.807	- / -	- / -	34 / 322.996	
<i>Subtotal: Recurring</i>	- / 286.722	- / 11.328	- / -	- / 12.139	- / -	- / 12.139	- / -	- / -	- / 12.807	- / -	- / 0.000	- / 322.996	
<i>Subtotal: AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE</i>	31 / 286.722	1 / 11.328	- / -	1 / 12.139	- / -	1 / 12.139	- / -	- / -	1 / 12.807	- / -	- / -	34 / 322.996	
<i>Subtotal: Procurement, All Modification Items</i>	- / 286.722	- / 11.328	- / -	- / 12.139	- / -	- / 12.139	- / -	- / -	- / 12.807	- / -	- / 0.000	- / 322.996	
Installation													
<i>Modification Item 1 of 1:</i> AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE	- / 140.610	- / 12.109	- / 6.737	- / 5.691	- / 0.000	- / 5.691	- / 1.189	- / 5.897	- / 0.000	- / 1.255	- / 6.233	- / 179.721	
<i>Subtotal: Installation</i>	- / 140.610	- / 12.109	- / 6.737	- / 5.691	- / -	- / 5.691	- / 1.189	- / 5.897	- / -	- / 1.255	- / 6.233	- / 179.721	
Total													
Total Cost (Procurement + Support + Installation)	427.332	23.437	6.737	17.830	0.000	17.830	1.189	5.897	12.807	1.255	6.233	502.717	

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2				P-1 Line Item Number / Title: 2136 / AN/SQQ-89 Surf ASW Cmbt Sys				Modification Number / Title: 1 / AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE				
ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Modification Item 1 of 1: AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE												
Manufacturer Information												
Manufacturer Name: Lockheed Martin						Manufacturer Location: Manassas, VA						
Administrative Leadtime <i>(in Months)</i> : 3						Production Leadtime <i>(in Months)</i> : 18						
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates	Sep 2018		Mar 2020									
Delivery Dates	Mar 2020		Sep 2021									
Manufacturer Name: TBD (Competitive Procurement)						Manufacturer Location: TBD (Competitive Procurement)						
Administrative Leadtime <i>(in Months)</i> : 3						Production Leadtime <i>(in Months)</i> : 18						
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates						Mar 2023						
Delivery Dates						Sep 2024						
Installation Information												
Method of Implementation: AIT and SHIPYARD:: Installation Name: AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE												
Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>
Prior Years	28 / 140.610	2 / 12.109	1 / 5.590	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	31 / 158.309
FY 2018	- / -	- / -	0 / 1.147	1 / 5.691	0 / 0.000	1 / 5.691	- / -	- / -	- / -	- / -	0 / 0.000	1 / 6.838
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	0 / 1.189	1 / 5.897	- / -	- / -	0 / 0.000	1 / 7.086
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 1.255	1 / 6.233	1 / 7.488
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	28 / 140.610	2 / 12.109	1 / 6.737	1 / 5.691	0 / 0.000	1 / 5.691	0 / 1.189	1 / 5.897	- / -	0 / 1.255	1 / 6.233	34 / 179.721

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019																													
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	P-1 Line Item Number / Title: 2136 / AN/SQQ-89 Surf ASW Cmbt Sys	Modification Number / Title: 1 / AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE																													
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:																													
Modification Item 1 of 1: AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE																															
Installation Information																															
Method of Implementation: AIT and SHIPYARD:: Installation Name: AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE																															
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	28	-	1	1	-	-	-	1	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	34
Out	28	-	-	1	1	-	-	-	1	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	34

Footnotes:

⁽¹³⁾ Starting in FY 2020, the cost to procure the Multi-Function Towed Array (MFTA) (major subsystem within the AN/SQQ-89A(V)15) will increase. This increase is due to the transition to the significantly improved MFTA TB-37X array from the MFTA TB-37 array. This transition is required to address and resolve deficiencies in the current MFTA TB-37 array's reliability (by changing from a Towed Array Integrated Product Team (TAIPT) telemetry to a more reliable telemetry), address and resolve parts obsolescence issues, and driven by the requirement to procure additional MFTA TB-37X handling sensors and non-acoustic node (NAS) hardware, and the packaging modifications needed to fit the new components. This change resulted in an increase to the shipset unit costs associated with the following AN/SQQ-89A(V)15 modification items: AN/SQQ-89A(V)15 DDG51-78 FLT I/II (Select) Upgrade, AN/SQQ-89A(V)15 DDG79-112 FLT IIA Upgrade, and AN/SQQ-89A(V)15 DDG113 and Follow MFTA/Handler Upgrade. AN/SQQ-89A(V)15 production shipset delivery time is 18 months after contract award. Each subsequent system procured in an FY is delivered one month later than the previous system. Delivery of equipment to the shipyard is preferably no later than 30-90 days prior to a CONUS (Continental U.S.) installation start date and no later than 120 days prior to a non-CONUS installation start date. Installations are assigned to specific ships as per Fleet priorities/requirements, and based on ship availabilities, as identified in the Fleet Modernization Program Management Information System (FMPMIS). Significant maintenance availability periods to support a major upgrade such as the AN/SQQ-89A(V)15 normally occur only once every three years in a ship's schedule.

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2				P-1 Line Item Number / Title: 2136 / AN/SQQ-89 Surf ASW Cmbt Sys				Modification Number / Title: 2 / AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	29.789	10.904	23.785	12.764	0.000	12.764	31.874	39.667	13.462	14.935	0.000	177.180
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	29.789	10.904	23.785	12.764	0.000	12.764	31.874	39.667	13.462	14.935	0.000	177.180
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	29.789	10.904	23.785	12.764	0.000	12.764	31.874	39.667	13.462	14.935	0.000	177.180
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-

Description:
[AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE] See the following:

Starting in FY 2020, the cost to procure the Multi-Function Towed Array (MFTA) (major subsystem within the AN/SQQ-89A(V)15) will increase. This increase is due to the transition to the significantly improved MFTA TB-37X array from the MFTA TB-37 array. This transition is required to address and resolve deficiencies in the current MFTA TB-37 array's reliability (by changing from a Towed Array Integrated Product Team (TAIPT) telemetry to a more reliable telemetry), address and resolve parts obsolescence issues, and driven by the requirement to procure additional MFTA TB-37X handling sensors and non-acoustic node (NAS) hardware, and the packaging modifications needed to fit the new components. This change resulted in an increase to the shipset unit costs associated with the following AN/SQQ-89A(V)15 modification items: AN/SQQ-89A(V)15 DDG51-78 FLT I/II (Select) Upgrade, AN/SQQ-89A(V)15 DDG79-112 FLT IIA Upgrade, and AN/SQQ-89A(V)15 DDG113 and Follow MFTA/Handler Upgrade.

AN/SQQ-89A(V)15 YEAR TO YEAR FUNDING PROFILE FROM PROCUREMENT TO INSTALL:
1st Year - Procurement of Equipment.
2nd Year - Ordering of incidental installation material and perform mandatory planning yard design tasks and ship checks. This is shown as a quantity of "0" with requested funds in the year before the installation of equipment.
3rd Year - Installation of Equipment.

AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE - COST CODE DB400 PROCUREMENT: Procurement of AN/SQQ-89A(V)15 equipment for subsequent backfit installation on select DDG51-78 FLT I/II ships. An average, aggregate AN/SQQ-89A(V)15 unit cost is indicated, however, it should be noted that this cost is comprised of multiple contract/funding vehicles. Additionally, the subdivision of these unit costs to a specific ship can vary as they are dependent on the pre-existing configuration of each ship. NOTE: Procurement of an AN/SQQ-89A(V)15 for DDG51 Class FLT I/II ships does not require the OK-410 Handling & Stowage Group (H&SG) subsystem as needed with DDG51 Class FLT IIA ships.

AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE - COST CODE DB6IN INSTALLATION: Funding is for the full-up physical installation of the major AN/SQQ-89A(V)15 upgrade, the ordering of incidental installation material in the year prior to the actual installation, and Design Services Allocation (DSA) required for mandatory planning yard design tasks and ship checks that must be completed within the one year period leading up to the actual installation in the shipyard.

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	P-1 Line Item Number / Title: 2136 / AN/SQQ-89 Surf ASW Cmbt Sys	Modification Number / Title: 2 / AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
The AN/SQQ-89A(V)15 requires a CNO (Chief of Naval Operations) availability period. The installation is accomplished by Alteration Installation Team (AIT) and shipyard personnel together. The AIT personnel are responsible for the removal of all AN/SQQ-89(V) legacy equipment, addition and modification of foundations, and installation, connectorization, and test of all new AN/SQQ-89A(V)15 equipment. The shipyard personnel are responsible for all rigging activities and hull access cuts. AN/SQQ-89A(V)15 production shipset delivery time is 18 months after contract award. Each subsequent system procured in an FY is delivered one month later than the previous system. Delivery of equipment to the shipyard is preferably no later than 30-90 days prior to a CONUS (Continental U.S.) installation start date and no later than 120 days prior to a non-CONUS installation start date. Installations are assigned to specific ships as per Fleet priorities/requirements, and based on ship availabilities, as identified in the Fleet Modernization Program Management Information System (FMPMIS). Significant maintenance availability periods to support a major upgrade such as the AN/SQQ-89A(V)15 normally occur only once every three years in a ship's schedule.		

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2					P-1 Line Item Number / Title: 2136 / AN/SQQ-89 Surf ASW Cmbt Sys					Modification Number / Title: 2 / AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: Upgrade of legacy AN/SQQ-89(V) systems on select DDG51-78 ships to AN/SQQ-89A(V)15 configuration					Modification Type: Warfighting Capability				Related RDT&E PEs: 0205620N				
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	
Procurement													
Modification Item 1 of 1: AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE													
B Kits													
Recurring													
1.1.1) AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE - NonOrganic ⁽¹⁴⁾	3 / 28.420	- / -	2 / 19.231	1 / 10.438	- / -	1 / 10.438	2 / 21.252	3 / 32.452	- / -	- / -	- / -	11 / 111.793	
<i>Subtotal: Recurring</i>	- / 28.420	- / -	- / 19.231	- / 10.438	- / -	- / 10.438	- / 21.252	- / 32.452	- / -	- / -	- / 0.000	- / 111.793	
<i>Subtotal: AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE</i>	3 / 28.420	- / -	2 / 19.231	1 / 10.438	- / -	1 / 10.438	2 / 21.252	3 / 32.452	- / -	- / -	- / -	11 / 111.793	
<i>Subtotal: Procurement, All Modification Items</i>	- / 28.420	- / -	- / 19.231	- / 10.438	- / -	- / 10.438	- / 21.252	- / 32.452	- / -	- / -	- / 0.000	- / 111.793	
Installation													
Modification Item 1 of 1: AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE	- / 1.369	- / 10.904	- / 4.554	- / 2.326	- / 0.000	- / 2.326	- / 10.622	- / 7.215	- / 13.462	- / 14.935	- / 0.000	- / 65.387	
<i>Subtotal: Installation</i>	- / 1.369	- / 10.904	- / 4.554	- / 2.326	- / -	- / 2.326	- / 10.622	- / 7.215	- / 13.462	- / 14.935	- / 0.000	- / 65.387	
Total													
Total Cost (Procurement + Support + Installation)	29.789	10.904	23.785	12.764	0.000	12.764	31.874	39.667	13.462	14.935	0.000	177.180	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2				P-1 Line Item Number / Title: 2136 / AN/SQQ-89 Surf ASW Cmbt Sys				Modification Number / Title: 2 / AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE				
ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Modification Item 1 of 1: AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE												
Manufacturer Information												
Manufacturer Name: Lockheed Martin						Manufacturer Location: Manassas, VA						
Administrative Leadtime <i>(in Months)</i> : 3						Production Leadtime <i>(in Months)</i> : 18						
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates		Mar 2019	Mar 2020									
Delivery Dates		Sep 2020	Sep 2021									
Manufacturer Name: TBD (Competitive Procurement)						Manufacturer Location: TBD (Competitive Procurement)						
Administrative Leadtime <i>(in Months)</i> : 3						Production Leadtime <i>(in Months)</i> : 18						
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates				Mar 2021	Mar 2022							
Delivery Dates				Sep 2022	Sep 2023							
Installation Information												
Method of Implementation: AIT and SHIPYARD:: Installation Name: AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE												
Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>
Prior Years	0 / 1.369	2 / 10.904	1 / 4.554	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 16.827
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	0 / 2.326	0 / 0.000	0 / 2.326	2 / 9.438	- / -	- / -	- / -	0 / 0.000	2 / 11.764
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	0 / 1.184	1 / 4.804	- / -	- / -	0 / 0.000	1 / 5.988
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 2.411	2 / 9.781	- / -	0 / 0.000	2 / 12.192
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 3.681	3 / 14.935	0 / 0.000	3 / 18.616
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	0 / 1.369	2 / 10.904	1 / 4.554	0 / 2.326	0 / 0.000	0 / 2.326	2 / 10.622	1 / 7.215	2 / 13.462	3 / 14.935	0 / 0.000	11 / 65.387

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019																													
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	P-1 Line Item Number / Title: 2136 / AN/SQQ-89 Surf ASW Cmbt Sys	Modification Number / Title: 2 / AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE																													
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:																													
Modification Item 1 of 1: AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE																															
Installation Information																															
Method of Implementation: AIT and SHIPYARD:: Installation Name: AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE																															
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	1	1	-	-	1	-	-	-	-	-	-	1	1	-	-	-	1	-	-	1	1	-	-	1	2	-	-	11
Out	-	-	-	-	1	1	-	-	1	-	-	-	-	-	-	1	1	-	-	-	1	-	-	1	1	-	-	1	2	-	11

Footnotes:

⁽¹⁴⁾ Starting in FY 2020, the cost to procure the Multi-Function Towed Array (MFTA) (major subsystem within the AN/SQQ-89A(V)15) will increase. This increase is due to the transition to the significantly improved MFTA TB-37X array from the MFTA TB-37 array. This transition is required to address and resolve deficiencies in the current MFTA TB-37 array's reliability (by changing from a Towed Array Integrated Product Team (TAIPT) telemetry to a more reliable telemetry), address and resolve parts obsolescence issues, and driven by the requirement to procure additional MFTA TB-37X handling sensors and non-acoustic node (NAS) hardware, and the packaging modifications needed to fit the new components. This change resulted in an increase to the shipset unit costs associated with the following AN/SQQ-89A(V)15 modification items: AN/SQQ-89A(V)15 DDG51-78 FLT I/II (Select) Upgrade, AN/SQQ-89A(V)15 DDG79-112 FLT IIA Upgrade, and AN/SQQ-89A(V)15 DDG113 and Follow MFTA/Handler Upgrade. AN/SQQ-89A(V)15 production shipset delivery time is 18 months after contract award. Each subsequent system procured in an FY is delivered one month later than the previous system. Delivery of equipment to the shipyard is preferably no later than 30-90 days prior to a CONUS (Continental U.S.) installation start date and no later than 120 days prior to a non-CONUS installation start date. Installations are assigned to specific ships as per Fleet priorities/requirements, and based on ship availabilities, as identified in the Fleet Modernization Program Management Information System (FMPMIS). Significant maintenance availability periods to support a major upgrade such as the AN/SQQ-89A(V)15 normally occur only once every three years in a ship's schedule.

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2				P-1 Line Item Number / Title: 2136 / AN/SQQ-89 Surf ASW Cmbt Sys						Modification Number / Title: 3 / AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	36.914	15.705	15.301	16.979	0.000	16.979	17.284	17.595	17.913	18.235	10.015	165.941
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	36.914	15.705	15.301	16.979	0.000	16.979	17.284	17.595	17.913	18.235	10.015	165.941
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	36.914	15.705	15.301	16.979	0.000	16.979	17.284	17.595	17.913	18.235	10.015	165.941
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Description: [AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE] See the following: FY 2019 and follow AN/SQQ-89A(V)15 DDG113 and Follow MFTA/Handler Upgrade shipset installation costs have been reduced to reflect actual costs associated with the transition of the shipyards from a Multi-Ship/Multi-Option (MS/MO) to a Firm Fixed Price (FFP) contracting strategy. FY 2019 AN/SQQ-89A(V)15 DDG113 and Follow MFTA/Handler Upgrade shipset installation costs were further reduced to reflect a Congressionally reduction for installation cost growth. Starting in FY 2020, the cost to procure the Multi-Function Towed Array (MFTA) (major subsystem within the AN/SQQ-89A(V)15) will increase. This increase is due to the transition to the significantly improved MFTA TB-37X array from the MFTA TB-37 array. This transition is required to address and resolve deficiencies in the current MFTA TB-37 array's reliability (by changing from a Towed Array Integrated Product Team (TAIPT) telemetry to a more reliable telemetry), address and resolve parts obsolescence issues, and driven by the requirement to procure additional MFTA TB-37X handling sensors and non-acoustic node (NAS) hardware, and the packaging modifications needed to fit the new components. This change resulted in an increase to the shipset unit costs associated with the following AN/SQQ-89A(V)15 modification items: AN/SQQ-89A(V)15 DDG51-78 FLT I/II (Select) Upgrade, AN/SQQ-89A(V)15 DDG79-112 FLT IIA Upgrade, and AN/SQQ-89A(V)15 DDG113 and Follow MFTA/Handler Upgrade. AN/SQQ-89A(V)15 YEAR TO YEAR FUNDING PROFILE FROM PROCUREMENT TO INSTALL: 1st Year - Procurement of Equipment. 2nd Year - Ordering of incidental installation material and perform mandatory planning yard design tasks and ship checks. This is shown as a quantity of "0" with requested funds in the year before the installation of equipment. 3rd Year - Installation of Equipment. AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE - COST CODE DB400 PROCUREMENT: Procurement of a subset of AN/SQQ-89A(V)15 equipment, specifically the Multi-Function Towed Array (MFTA) and Handling & Stowage Group (H&SG), for subsequent installation on all DDG113-132 ships during their Post Delivery Availability (PDA) or Post Shakedown Availability (PSA) periods, to upgrade the ASW sonar suite from an AN/SQQ-89(V)15 configuration to the AN/SQQ-89A(V)15 configuration. AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE - COST CODE DB6IN INSTALLATION: Physical installation of the H&SG and MFTA on DDG113-132 ships during their PDA or PSA period which includes the installation of an egress, under-deck stiffeners, cables, bulkheads, opening and closing of the transom, the winch, levelwind, fairlead and control station, decking, painting, and final												

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	P-1 Line Item Number / Title: 2136 / AN/SQQ-89 Surf ASW Cmbt Sys	Modification Number / Title: 3 / AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
system testing, the ordering of incidental installation material in the year prior to the actual installation, and Design Services Allocation (DSA) required for mandatory planning yard design tasks and ship checks that must be completed within the one year period leading up to the actual installation in the shipyard.		

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2					P-1 Line Item Number / Title: 2136 / AN/SQQ-89 Surf ASW Cmbt Sys					Modification Number / Title: 3 / AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: Upgrade of in-line AN/SQQ-89(V)15 on all DDG113-132 ships to AN/SQQ-89A(V)15 configuration					Modification Type: Warfighting Capability					Related RDT&E PEs: 0205620N			
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	
Procurement													
Modification Item 1 of 1: AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE													
B Kits													
Recurring													
1.1.1) AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE - NonOrganic ⁽¹⁵⁾	6 / 32.476	2 / 11.157	2 / 11.074	2 / 12.267	- / -	2 / 12.267	2 / 12.488	2 / 12.713	2 / 12.942	2 / 13.175	- / -	20 / 118.292	
<i>Subtotal: Recurring</i>	- / 32.476	- / 11.157	- / 11.074	- / 12.267	- / -	- / 12.267	- / 12.488	- / 12.713	- / 12.942	- / 13.175	- / 0.000	- / 118.292	
<i>Subtotal: AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE</i>	6 / 32.476	2 / 11.157	2 / 11.074	2 / 12.267	- / -	2 / 12.267	2 / 12.488	2 / 12.713	2 / 12.942	2 / 13.175	- / -	20 / 118.292	
<i>Subtotal: Procurement, All Modification Items</i>	- / 32.476	- / 11.157	- / 11.074	- / 12.267	- / -	- / 12.267	- / 12.488	- / 12.713	- / 12.942	- / 13.175	- / 0.000	- / 118.292	
Installation													
Modification Item 1 of 1: AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE	- / 4.438	- / 4.548	- / 4.227	- / 4.712	- / 0.000	- / 4.712	- / 4.796	- / 4.882	- / 4.971	- / 5.060	- / 10.015	- / 47.649	
<i>Subtotal: Installation</i>	- / 4.438	- / 4.548	- / 4.227	- / 4.712	- / -	- / 4.712	- / 4.796	- / 4.882	- / 4.971	- / 5.060	- / 10.015	- / 47.649	
Total													
Total Cost (Procurement + Support + Installation)	36.914	15.705	15.301	16.979	0.000	16.979	17.284	17.595	17.913	18.235	10.015	165.941	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2					P-1 Line Item Number / Title: 2136 / AN/SQQ-89 Surf ASW Cmbt Sys					Modification Number / Title: 3 / AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Modification Item 1 of 1: AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE												
Manufacturer Information												
Manufacturer Name: Lockheed Martin							Manufacturer Location: Syracuse, NY					
Administrative Leadtime (in Months): 3							Production Leadtime (in Months): 18					
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates	Sep 2018	Mar 2019										
Delivery Dates	Mar 2020	Sep 2020										
Manufacturer Name: TBD (Competitive Procurement)							Manufacturer Location: TBD (Competitive Procurement)					
Administrative Leadtime (in Months): 3							Production Leadtime (in Months): 18					
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates			Mar 2020	Mar 2021	Mar 2022	Mar 2023	Mar 2024					
Delivery Dates			Sep 2021	Sep 2022	Sep 2023	Sep 2024	Sep 2025					
Installation Information												
Method of Implementation: AIT and SHIPYARD:: Installation Name: AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE												
Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	2 / 4.438	2 / 4.548	2 / 3.782	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	6 / 12.768
FY 2018	- / -	- / -	0 / 0.445	2 / 4.259	0 / 0.000	2 / 4.259	- / -	- / -	- / -	- / -	0 / 0.000	2 / 4.704
FY 2019	- / -	- / -	- / -	0 / 0.453	0 / 0.000	0 / 0.453	2 / 4.335	- / -	- / -	- / -	0 / 0.000	2 / 4.788
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.461	2 / 4.413	- / -	- / -	0 / 0.000	2 / 4.874
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.469	2 / 4.493	- / -	0 / 0.000	2 / 4.962
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.478	2 / 4.574	0 / 0.000	2 / 5.052
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.486	2 / 4.665	2 / 5.151
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 5.350	2 / 5.350
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	2 / 4.438	2 / 4.548	2 / 4.227	2 / 4.712	0 / 0.000	2 / 4.712	2 / 4.796	2 / 4.882	2 / 4.971	2 / 5.060	4 / 10.015	20 / 47.649

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Exhibit P-3a, Individual Modification: PB 2020 Navy																			Date: March 2019												
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2										P-1 Line Item Number / Title: 2136 / AN/SQQ-89 Surf ASW Cmbt Sys										Modification Number / Title: 3 / AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE											
ID Code (A=Service Ready, B=Not Service Ready) :																	MDAP/MAIS Code:														
Modification Item 1 of 1: AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE																															
Installation Information																															
Method of Implementation: AIT and SHIPYARD:: Installation Name: AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE																															
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	2	-	2	-	-	-	1	1	-	-	-	1	1	-	1	1	-	-	1	1	-	-	1	1	-	-	1	1	-	4	20
Out	2	-	2	-	-	-	1	1	-	-	-	1	1	-	1	1	-	-	1	1	-	-	1	1	-	-	1	1	-	4	20

Footnotes:

(15) FY 2019 and follow AN/SQQ-89A(V)15 DDG113 and Follow MFTA/Handler Upgrade shipset installation costs have been reduced to reflect actual costs associated with the transition of the shipyards from a Multi-Ship/Multi-Option (MS/MO) to a Firm Fixed Price (FFP) contracting strategy. FY 2019 AN/SQQ-89A(V)15 DDG113 and Follow MFTA/Handler Upgrade shipset installation costs were further reduced to reflect a Congressionally reduction for installation cost growth. Starting in FY 2020, the cost to procure the Multi-Function Towed Array (MFTA) (major subsystem within the AN/SQQ-89A(V)15) will increase. This increase is due to the transition to the significantly improved MFTA TB-37X array from the MFTA TB-37 array. This transition is required to address and resolve deficiencies in the current MFTA TB-37 array's reliability (by changing from a Towed Array Integrated Product Team (TAIPT) telemetry to a more reliable telemetry), address and resolve parts obsolescence issues, and driven by the requirement to procure additional MFTA TB-37X handling sensors and non-acoustic node (NAS) hardware, and the packaging modifications needed to fit the new components. This change resulted in an increase to the shipset unit costs associated with the following AN/SQQ-89A(V)15 modification items: AN/SQQ-89A(V)15 DDG51-78 FLT I/II (Select) Upgrade, AN/SQQ-89A(V)15 DDG79-112 FLT IIA Upgrade, and AN/SQQ-89A(V)15 DDG113 and Follow MFTA/Handler Upgrade.

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2					P-1 Line Item Number / Title: 2136 / AN/SQQ-89 Surf ASW Cmbt Sys					Modification Number / Title: 4 / AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	61.777	21.898	35.842	48.510	0.000	48.510	42.533	37.634	61.043	68.742	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	61.777	21.898	35.842	48.510	0.000	48.510	42.533	37.634	61.043	68.742	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	61.777	21.898	35.842	48.510	0.000	48.510	42.533	37.634	61.043	68.742	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: [AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH] See the following: FY 2019 and follow AN/SQQ-89A(V)15 Technology Insertion/Refresh shipset installation costs have been reduced to reflect actual costs associated with the transition of the shipyards from a Multi-Ship/Multi-Option (MS/MO) to a Firm Fixed Price (FFP) contracting strategy. FY 2019 AN/SQQ-89A(V)15 Technology Insertion/Refresh shipset installation costs were reduced to reflect Congressional reduction for installation cost growth. FY 2019 to FY 2020 AN/SQQ-89A(V)15 Technology Insertion/Refresh shipset hardware unit cost increase is attributable to the incorporation of new Cybersecurity hardening requirements. AN/SQQ-89A(V)15 YEAR TO YEAR FUNDING PROFILE FROM PROCUREMENT TO INSTALL: 1st Year - Procurement of Equipment. 2nd Year - Ordering of incidental installation material and perform mandatory planning yard design tasks and ship checks. This is shown as a quantity of "0" with requested funds in the year before the installation of equipment. 3rd Year - Installation of Equipment. AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH - COST CODE DB400 PROCUREMENT: Leveraging the submarine community's Acoustic Rapid Commercial-off-the-Shelf (COTS) Insertion (ARCI) process, the AN/SQQ-89A(V)15 Tech Refresh program procures upgraded software/hardware technology for all CG47/DDG51 Class surface combatant platforms with a previously fielded AN/SQQ-89A(V)15. This process has proven to manage obsolescence, take advantage of commercial development efforts, and continue to pace the threat to ensure systems remain effective well into the 21st century. Studies of the submarine and surface ASW technology show that system upgrades are most critical 6-9 years after initial installation of the AN/SQQ-89A(V)15, as failure rates within this period begin to rise. Establishing a stable technology refresh program will ensure the Fleet maintains critical Undersea Warfare capability (threat-pacing improvements) and productivity (Increased Operational Availability (Ao)) while reducing the Total Ownership Cost (TOC) to the Navy. AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH - COST CODE DB6IN INSTALLATION: Funding is for the physical installation of the AN/SQQ-89A(V)15 Technology Refresh upgrade, the ordering of incidental installation material in the year prior to the actual installation, and Design Services Allocation (DSA) required for mandatory planning yard design tasks and ship checks that must be completed within the one year period leading up to the actual installation in the shipyard.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2				P-1 Line Item Number / Title: 2136 / AN/SQQ-89 Surf ASW Cmbt Sys						Modification Number / Title: 4 / AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: Technology refresh of previously fielded AN/SQQ-89A(V)15 USW Combat Systems				Modification Type: Warfighting Capability				Related RDT&E PEs: 0205620N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH													
B Kits													
Recurring													
1.1.1) AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH - NonOrganic ⁽¹⁶⁾	11 / 48.524	3 / 13.874	6 / 28.388	8 / 39.516	- / -	8 / 39.516	5 / 25.142	3 / 15.357	9 / 46.900	11 / 58.354	Continuing	Continuing	
<i>Subtotal: Recurring</i>	- / 48.524	- / 13.874	- / 28.388	- / 39.516	- / -	- / 39.516	- / 25.142	- / 15.357	- / 46.900	- / 58.354	Continuing	Continuing	
<i>Subtotal: AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH</i>	11 / 48.524	3 / 13.874	6 / 28.388	8 / 39.516	- / -	8 / 39.516	5 / 25.142	3 / 15.357	9 / 46.900	11 / 58.354	Continuing	Continuing	
<i>Subtotal: Procurement, All Modification Items</i>	- / 48.524	- / 13.874	- / 28.388	- / 39.516	- / -	- / 39.516	- / 25.142	- / 15.357	- / 46.900	- / 58.354	Continuing	Continuing	
Installation													
Modification Item 1 of 1: AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH	- / 13.253	- / 8.024	- / 7.454	- / 8.994	- / 0.000	- / 8.994	- / 17.391	- / 22.277	- / 14.143	- / 10.388	- / 59.113	- / 161.037	
<i>Subtotal: Installation</i>	- / 13.253	- / 8.024	- / 7.454	- / 8.994	- / -	- / 8.994	- / 17.391	- / 22.277	- / 14.143	- / 10.388	- / 59.113	- / 161.037	
Total													
Total Cost (Procurement + Support + Installation)	61.777	21.898	35.842	48.510	0.000	48.510	42.533	37.634	61.043	68.742	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2					P-1 Line Item Number / Title: 2136 / AN/SQQ-89 Surf ASW Cmbt Sys					Modification Number / Title: 4 / AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Modification Item 1 of 1: AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH												
Manufacturer Information												
Manufacturer Name: Lockheed Martin							Manufacturer Location: Manassas, VA					
Administrative Leadtime (<i>in Months</i>): 3							Production Leadtime (<i>in Months</i>): 17					
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates	Sep 2018	Mar 2019	Mar 2020									
Delivery Dates	Feb 2020	Aug 2020	Aug 2021									
Manufacturer Name: TBD (Competitive Procurement)							Manufacturer Location: TBD (Competitive Procurement)					
Administrative Leadtime (<i>in Months</i>): 3							Production Leadtime (<i>in Months</i>): 17					
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates				Mar 2021	Mar 2022	Mar 2023	Mar 2024					
Delivery Dates				Aug 2022	Aug 2023	Aug 2024	Aug 2025					
Installation Information												
Method of Implementation: AIT:: Installation Name: AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH												
Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>
Prior Years	5 / 13.253	3 / 8.024	3 / 6.787	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	11 / 28.064
FY 2018	- / -	- / -	0 / 0.667	3 / 7.636	0 / 0.000	3 / 7.636	- / -	- / -	- / -	- / -	0 / 0.000	3 / 8.303
FY 2019	- / -	- / -	- / -	0 / 1.358	0 / 0.000	0 / 1.358	6 / 15.548	- / -	- / -	- / -	0 / 0.000	6 / 16.906
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	0 / 1.843	8 / 21.104	- / -	- / -	0 / 0.000	8 / 22.947
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 1.173	5 / 13.427	- / -	0 / 0.000	5 / 14.600
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.716	3 / 8.201	0 / 0.000	3 / 8.917
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 2.187	9 / 25.098	9 / 27.285
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	11 / 34.015	11 / 34.015
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	- / -
Total	5 / 13.253	3 / 8.024	3 / 7.454	3 / 8.994	0 / 0.000	3 / 8.994	6 / 17.391	8 / 22.277	5 / 14.143	3 / 10.388	20 / 59.113	56 / 161.037

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Exhibit P-3a, Individual Modification: PB 2020 Navy																		Date: March 2019													
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2										P-1 Line Item Number / Title: 2136 / AN/SQQ-89 Surf ASW Cmbt Sys										Modification Number / Title: 4 / AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH											
ID Code (A=Service Ready, B=Not Service Ready) :																		MDAP/MAIS Code:													
Modification Item 1 of 1: AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH																															
Installation Information																															
Method of Implementation: AIT:: Installation Name: AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH																															
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	5	-	2	1	-	-	1	1	1	-	1	2	-	1	2	2	1	1	2	3	2	-	2	2	1	-	1	2	-	20	56
Out	5	-	2	1	-	-	1	1	1	-	1	2	-	1	2	2	1	1	2	3	2	-	2	2	1	-	1	2	-	20	56

Footnotes:

(16) FY 2019 and follow AN/SQQ-89A(V)15 Technology Insertion/Refresh shipset installation costs have been reduced to reflect actual costs associated with the transition of the shipyards from a Multi-Ship/Multi-Option (MS/MO) to a Firm Fixed Price (FFP) contracting strategy. FY 2019 AN/SQQ-89A(V)15 Technology Insertion/Refresh shipset installation costs were reduced to reflect Congressional reduction for installation cost growth. FY 2019 to FY 2020 AN/SQQ-89A(V)15 Technology Insertion/Refresh shipset hardware unit cost increase is attributable to the incorporation of new Cybersecurity hardening requirements.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars							P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment					
ID Code (A=Service Ready, B=Not Service Ready): B			Program Elements for Code B Items: N/A				Other Related Program Elements: N/A					
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	286.083	354.253	328.658	366.968	0.000	366.968	381.207	430.868	518.736	534.697	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	286.083	354.253	328.658	366.968	0.000	366.968	381.207	430.868	518.736	534.697	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	286.083	354.253	328.658	366.968	0.000	366.968	381.207	430.868	518.736	534.697	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	37.233	20.540	22.295	-	22.295	13.235	18.000	15.239	25.103	Continuing	Continuing
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program procures submarine systems and equipment for installation on all classes of submarines to maintain clear acoustical, tactical, and operational superiority over submarine and surface combatants in all scenarios through detection, classification, localization, and contact following. All future acoustic upgrades of Acoustic Rapid COTS Insertion (A-RCI) equipment are incorporated into this budget item. Future procurements, detailed below, are focused on supporting Littoral Warfare, Regional Sea Denial, Strike Group Support, Diesel Submarine Detection, Surveillance, and Peacetime Engagement. A-RCI is a multi-phased, evolutionary development effort geared toward addressing acoustic superiority issues through the rapid introduction of interim products applicable to SSN 688, 688I Flight, SSN21, SSGN, VA Class, and SSBN 726 Class Submarines. A-RCI Phase II provided towed array processing improvements; A-RCI Phase III provides spherical array processing improvements, and A-RCI Phase IV provides AN/BSY-1 High Frequency Upgrades for SSN 688I, SSGN, and Seawolf Classes. As part of Navy's plan to maintain acoustic superiority for in-service submarines, reduce obsolescence, and provide increased capability, the A-RCI program will modernize and sustain approximately 8-12 SSNs and 2-3 SSBNs per year through executing bi-annual software Advanced Processing Builds (APBs) and bi-annual hardware Technical Insertions (TIs). A-RCI annual funding varies based on the number of modernizations funded as well as the particular class of submarine being modernized.

Towed system procurements of TB-29C and TB-34A provide reliability improvements to maintain acoustic superiority, increase the service life, reduce failures, and maintain the inventory of arrays available for fleet use. Towed Array Refurbishment & Reliability Upgrades sustain current in-service TB-16/34 fat line and TB-23/29A thin line towed arrays. Towed System procurements provide upgrade/support for OK-276, OK-634, OK-542 and OA-9070 Series Towed Array Handlers installed on SSN688, SSN 688I, SSN21, SSGN, VA Class, and SSBN 726 Class Submarines.

Procurement of Low Cost Conformal Array (LCCA) provides enhanced situational awareness and collision avoidance capability in high contact density environments experienced in the littorals. Procurement of VA Unique Sensors sustains unique hull sensor systems for the VA platforms under the Critical Transducer Program as VA Class submarines transition into fleet service.

Procurement of the OHIO Class Large Vertical Array (LVA) provides improved detection and enhanced tactical situational awareness capability for tracking targets of interest, and supports acoustic superiority objectives for the OHIO class submarines. SSBN systems will be approximately half the width of their SSN counterparts. This variance reflects the difference in mission, expected environment, and requirements.

Procurement of the VIRGINIA Class Large Vertical Array (LVA) provides improved detection and enhanced tactical situational awareness capability for tracking targets of interest, and supports acoustic superiority objectives for the VIRGINIA class submarines. SSN systems will be approximately twice the width of their SSBN counterparts. This variance reflects the difference in mission, expected environment, and requirements.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars		P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
Procurement of the High Frequency Sail Array (HFSA) provides high frequency active and passive capability supporting ASW and ASUW for SSNs, and contact avoidance for SSNs and SSBNs. This capability enables close in situational awareness with high bearing accuracy. HFSA improves situational awareness and tactical control in high density contact areas, of particular importance for Pacific Fleet SSBNs based at Bangor WA inside the Puget Sound with three major commercial shipping ports. Procurement of hydrophones, transducers, cables, associated Out-Board Electronics bottles (OBE), and acoustic windows for In-Service Undersea Warfare Sonars on all classes of submarines are required to support units in the fleet on a replacement basis, at regularly scheduled ship overhauls, and at interim availabilities when units are defective, and for upgrades. Installation funds are for actual hardware installations during shipyard and pier-side availabilities. Procurements support a 12-24 month lead time for installations. [P40A / SA102 TOWED SYSTEMS]: Procures TB-34A Fatline and TB-29C Thinline Arrays to provide increase acoustic capability and reliability to the fleet. The program supports N8's response to the Fleet Forces Command's Urgent Operational Needs Statement message (dated 15 June 2009) which requests that a reliable Thinline Towed Array is critically needed to support submarine operations in the Western Pacific Area of Operations, refurbishment/upgrades reliability improvements to TB-16 series, TB-23, TB-29A to maintain in-service Towed Array inventory and increased array availability. Reliability improvements include new telemetry, hose material, improved internal connectors, hydrophones, tow cables, Vibration Isolation Modules (VIMS), and Heading Sensors. [P40A / SA105 SONAR SUPPORT EQUIPMENT]: Funds provided to procure BQN-17(A) and associated equipment. [P40A / SA106 HULL SENSORS]: Procurement of Low Cost Conformal Array (LCCA) provides enhanced situational awareness and collision avoidance capability, and VA Unique Sensors required to sustain unique hull sensor systems for the VA platforms under the Critical Transducer Program. [P40A / SA201 BLOCK CHANGES]: Minor Engineering Change Proposals (ECP's) and hardware changes affecting all classes of submarines are procured through this line. Funding will be used to support non-recurring first article test efforts associated with the changing COTS environment as well as Reliability, Maintainability, and Availability modifications requested by the Fleet. This line also supports the procurement of hardware necessary to implement the ECP's into the System or end item being procured. [P40A / SA202 PRODUCTION/ENGINEERING SUPPORT]: Funding supports the procurement of Acoustics Upgrades equipment, Towed Systems hardware, Large Vertical Array in-board processing equipment, and Large Vertical Array shipyard installation support equipment. [P40A / SA203 TOWED ARRAY UNIQUE TEST EQUIPMENT]: Funding procures various towed array test equipment simulators and handling system/stowage tube inspection test equipment. [P40A / SA302 OP TRAINER UPGRADES]: Funding procures hardware upgrades and production engineering for Acoustic Upgrades operational trainer sites. [P40A / SA303 COTS SUPPORTABILITY UPGRADES]: Provides for Technology Refresh/Insertion for A-RCI kits. Tech Refresh provides for Software and Hardware updates to accommodate shifts in technology to the execution procurement years' "current state-of-the-practice" hardware. A-RCI has already undergone several technology insertion phases to accommodate integrating Advanced Processing Builds (APBs). Updates are necessary for signal and display processing hardware as APBs are introduced or as commercial support for the hardware is phased out. Tech Insertion procures the hardware necessary to upgrade and back fit the A-RCI kits. When A-RCI systems are being upgraded to subsequent phases of A-RCI, signal processing and display hardware will be procured from this line to accommodate common technology consistent with the APB being implemented in the year of introduction. In future years, requirements include additional equipment in technology insertion to prevent COTS hardware from becoming unsupportable/obsolete. Funding also supports the procurement and engineering for COTS Underwater Comms. [P40A / SA401 INITIAL TRAINING]: Provides for initial training curriculum development, training management materials, exercise control group development, pilot services, and services to the Fleet.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars		P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
[P40A / SA900 CONSULTING SERVICES]: Includes specification validation, contract deliverable monitoring, prime contractor monitoring for cost, schedule, and performance slips, ILS planning, and coordination of GFI. Additional support will include production planning, business case analysis, technical refresh and insertion planning and market analysis to review implementation strategies for procurement of current year "state of the practice" hardware in Acoustics programs. Consulting services will also provide production monitoring, installation planning and coordination support. [P40A - 2 / PU100 SONAR SWITCHES AND TRANSDUCERS]: Included in this line are procurements of transducers, hydrophones, windows, cables, Out-Board Electronics (OBE), domes and their associated mounting hardware, and other support equipment and materials for the following Undersea Warfare Sonars: BSY-1, BSY-2, BQQ-5, BQQ-6, BQQ-10, BQG-5, BQS-15, BQS-14A, WQC-2, WLR-9/12, BQN-13, BQN-17, BQA-8, BQH-1 and BQS-25. [P40A - 2 / PU200 ENGINEERING CHANGES]: Funds ECPs, Value Engineering awards, and hardware changes affecting the SSN 688, 688I, SEAWOLF, SSBN 726 (TRIDENT), SSGN/SSBN, and VA Class submarines. [P40A - 2 / PU300 PROGRAM SUPPORT]: Supports the procurement of equipment of sonar hydrophones, transducers, cables, Out-Board Electronics (OBEs), and acoustic windows for In-Service Undersea Warfare Sonars.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy					Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars					P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment				
ID Code (A=Service Ready, B=Not Service Ready): B			Program Elements for Code B Items: N/A			Other Related Program Elements: N/A			
Line Item MDAP/MAIS Code: N/A									

Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	SSN Acoustics				- / 135.585	- / 166.024	- / 153.005	- / 133.470	- / -	- / 133.470
P-40a	Sonar Switches and Transducers				- / 11.592	- / 12.012	- / 12.562	- / 13.638	- / -	- / 13.638
P-3a	1 / SA101 SSBN LEGACY INTERFACE HARDWARE (SHIPALT)				- / 0.000	- / 0.000	- / 11.652	- / 27.527	- / 0.000	- / 27.527
P-3a	2 / SA106 LOW COST CONFORMAL ARRAY KITS (SHIPALT)				- / 12.974	- / 13.234	- / 3.680	- / 10.015	- / 0.000	- / 10.015
P-3a	3 / SA106 HIGH FREQUENCY SAIL ARRAY (SHIPALT)				- / 3.846	- / 6.117	- / 6.120	- / 8.405	- / 0.000	- / 8.405
P-3a	4 / SA106 OHIO CLASS LARGE VERTICAL ARRAY (SHIPALT)				- / 0.000	- / 0.000	- / 18.525	- / 18.896	- / 0.000	- / 18.896
P-3a	5 / SA106 VIRGINIA CLASS LARGE VERTICAL ARRAY (SHIPALT)				- / 0.000	- / 0.000	- / 0.000	- / 43.405	- / 0.000	- / 43.405
P-3a	6 / SA303 688/688I TECHNOLOGY INSERTION KITS (SWFTS) (SHIPALT)				- / 13.274	- / 47.836	- / 62.603	- / 55.560	- / 0.000	- / 55.560
P-3a	7 / SA303 SSGN TECHNOLOGY INSERTION KITS (SWFTS) (SHIPALT)				- / 0.000	- / 0.000	- / 16.264	- / 21.283	- / 0.000	- / 21.283
P-3a	8 / SA303 SSN 21 TECHNICAL INSERTION KITS (SWFTS) (SHIPALT)				- / 12.037	- / 12.278	- / 3.415	- / 0.000	- / 0.000	- / 0.000
P-3a	9 / SA303 VIRGINIA CLASS TECHNICAL INSERTION W/ CONVERSION KITS (SWFTS) (SHIPALT)				- / 16.957	- / 3.348	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	10 / SA303 VIRGINIA CLASS TECHNICAL INSERTION KITS (SWFTS) (SHIPALT)				- / 55.810	- / 64.737	- / 17.075	- / 9.291	- / 0.000	- / 9.291
P-3a	11 / SA303 SSBN TECHNICAL INSERTION CONVERSION (SWFTS) (SHIPALT)				- / 24.008	- / 28.667	- / 23.757	- / 25.478	- / 0.000	- / 25.478
P-40	Total Gross/Weapon System Cost				- / 286.083	- / 354.253	- / 328.658	- / 366.968	- / 0.000	- / 366.968

Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	SSN Acoustics				- / -	- / -	- / -	- / -	- / -	- / -
P-40a	Sonar Switches and Transducers				- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / SA101 SSBN LEGACY INTERFACE HARDWARE (SHIPALT)				- / 20.902	- / 5.046	- / 0.000	- / 0.000	- / 0.000	- / 65.127
P-3a	2 / SA106 LOW COST CONFORMAL ARRAY KITS (SHIPALT)				- / 14.044	- / 14.325	- / 14.612	- / 14.903	Continuing	Continuing
P-3a	3 / SA106 HIGH FREQUENCY SAIL ARRAY (SHIPALT)				- / 6.492	- / 2.249	- / 0.000	- / 0.000	- / 0.000	- / 33.229
P-3a	4 / SA106 OHIO CLASS LARGE VERTICAL ARRAY (SHIPALT)				- / 29.400	- / 29.989	- / 30.588	- / 31.200	Continuing	Continuing
P-3a	5 / SA106 VIRGINIA CLASS LARGE VERTICAL ARRAY (SHIPALT)				- / 44.273	- / 65.077	- / 66.379	- / 67.706	Continuing	Continuing
P-3a	6 / SA303 688/688I TECHNOLOGY INSERTION KITS (SWFTS) (SHIPALT)				- / 11.974	- / 43.149	- / 100.481	- / 52.348	Continuing	Continuing
P-3a	7 / SA303 SSGN TECHNOLOGY INSERTION KITS (SWFTS) (SHIPALT)				- / 4.788	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 42.335
P-3a	8 / SA303 SSN 21 TECHNICAL INSERTION KITS (SWFTS) (SHIPALT)				- / 0.000	- / 9.666	- / 13.555	- / 13.826	Continuing	Continuing

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars						P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment				
ID Code (A=Service Ready, B=Not Service Ready): B			Program Elements for Code B Items: N/A			Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	9 / SA303 VIRGINIA CLASS TECHNICAL INSERTION W/ CONVERSION KITS (SWFTS) (SHIPALT)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 20.305
P-3a	10 / SA303 VIRGINIA CLASS TECHNICAL INSERTION KITS (SWFTS) (SHIPALT)				- / 79.363	- / 77.321	- / 18.482	- / 70.394	Continuing	Continuing
P-3a	11 / SA303 SSBN TECHNICAL INSERTION CONVERSION (SWFTS) (SHIPALT)				- / 19.010	- / 27.803	- / 42.202	- / 30.935	Continuing	Continuing
P-40	Total Gross/Weapon System Cost				- / 381.207	- / 430.868	- / 518.736	- / 534.697	Continuing	Continuing

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
 FY 2020 marks the first procurement of the VIRGINIA Class Large Vertical Array (LVA) which is the primary driver of increased funding in this fiscal year (\$43 million). Increased funding in FY 2020 is also driven by the first installations of SSBN Legacy Interface Hardware. The continuation of SSBN Legacy Interface Hardware procurement in FY 2020 supports emergent Engineering Change Proposals (ECPs) and hardware changes necessary to address significantly expanded power and infrastructure driven by required capability improvements. These funds support the conversion of the SSBN from a legacy Sonar system to the A-RCI model requiring upgrades to the power and infrastructure of the platform. Funds also support the following procurement requirements to support submarine modernizations: Acoustic Rapid COTS Insertion (A-RCI) equipment (5 SSN 688I, 2 SSGN, 1 VA Class, and 3 SSBN); TB-34A Fatline (5) and TB-29C Thinline (5) towed arrays; towed array refurbishment & reliability upgrades to sustain current in-service TB-16/34 Fatline and TB-23/29A Thinline arrays; OK-276, OK-634, OK-542, and OA-9070 Series Towed Array Handlers; HFSA (2) for SSBNs, LVA (1 SSBN, 1 VA); and various hull sensors, transducers, and associated equipment for all classes of In-Service submarines.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2							P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment								Aggregated Items Title: SSN Acoustics					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
1) SA102 TOWED SYSTEMS																				
1.1) TB-34A FATLINE TOWED ARRAYS ⁽¹⁾	B		1,248K	9	11.236	1,273K	12	15.281	1,299K	6	7.794	1,325K	5	6.624	-	-	-	1,325K	5	6.624
1.2) TB-29C THIN LINE TOWED ARRAYS ⁽²⁾	B		4,200K	7	29.400	4,284K	12	51.408	4,370K	8	34.957	4,457K	5	22.285	-	-	-	4,457K	5	22.285
1.3) TOWED ARRAY REFURBISHMENT & UPGRADES ⁽³⁾	A		-	-	29.219	-	-	32.294	-	-	30.373	-	-	32.810	-	-	-	-	-	32.810
1.4) TOWED ARRAY HANDLER SYSTEM UPGRADE	A		-	-	7.408	-	-	7.556	-	-	7.940	-	-	7.862	-	-	-	-	-	7.862
Subtotal: 1) SA102 TOWED SYSTEMS			-	-	77.263	-	-	106.539	-	-	81.064	-	-	69.581	-	-	-	-	-	69.581
2) SA105 SONAR SUPPORT EQUIPMENT																				
2.1) BQN-17	A		-	-	0.887	-	-	0.905	-	-	0.923	-	-	0.941	-	-	-	-	-	0.941
Subtotal: 2) SA105 SONAR SUPPORT EQUIPMENT			-	-	0.887	-	-	0.905	-	-	0.923	-	-	0.941	-	-	-	-	-	0.941
3) SA106 HULL SENSORS																				
3.1) VA UNIQUE SENSOR	A		-	-	5.405	-	-	5.513	-	-	5.623	-	-	5.735	-	-	-	-	-	5.735
Subtotal: 3) SA106 HULL SENSORS			-	-	5.405	-	-	5.513	-	-	5.623	-	-	5.735	-	-	-	-	-	5.735
4) SA201 BLOCK CHANGES																				
4.1) TOWED SYSTEMS ECP'S	A		-	-	1.701	-	-	1.735	-	-	1.770	-	-	1.805	-	-	-	-	-	1.805
4.2) ACOUSTICS ⁽⁴⁾	A		-	-	3.022	-	-	3.082	-	-	5.385	-	-	3.208	-	-	-	-	-	3.208
Subtotal: 4) SA201 BLOCK CHANGES			-	-	4.723	-	-	4.817	-	-	7.155	-	-	5.013	-	-	-	-	-	5.013
5) SA202 PRODUCTION/ENGINEERING SUPPORT																				
5.1) ACOUSTICS ⁽⁵⁾	A		-	-	3.168	-	-	3.231	-	-	5.644	-	-	3.362	-	-	-	-	-	3.362
5.2) TOWED ARRAYS/HANDLING EQUIPMENT	A		-	-	3.111	-	-	3.173	-	-	3.236	-	-	3.301	-	-	-	-	-	3.301
5.3) LARGE VERTICAL ARRAY ⁽⁶⁾	A		-	-	-	-	-	-	-	-	-	-	-	2.000	-	-	-	-	-	2.000
Subtotal: 5) SA202 PRODUCTION/ENGINEERING SUPPORT			-	-	6.279	-	-	6.404	-	-	8.880	-	-	8.663	-	-	-	-	-	8.663
6) SA203 TOWED ARRAY UNIQUE TEST EQUIPMENT																				
6.1) TOWED ARRAY UNIQUE TEST EQUIPMENT	A		-	-	1.259	-	-	1.284	-	-	1.310	-	-	1.336	-	-	-	-	-	1.336

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2						P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment									Aggregated Items Title: SSN Acoustics					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
Subtotal: 6) SA203 TOWED ARRAY UNIQUE TEST EQUIPMENT			-	-	1.259	-	-	1.284	-	-	1.310	-	-	1.336	-	-	-	-	-	1.336
7) SA302 OP TRAINER UPGRADES																				
7.1) OP TRAINER GFE	A		-	-	1.112	-	-	1.134	-	-	1.157	-	-	1.180	-	-	-	-	-	1.180
Subtotal: 7) SA302 OP TRAINER UPGRADES			-	-	1.112	-	-	1.134	-	-	1.157	-	-	1.180	-	-	-	-	-	1.180
8) SA303 COTS SUPPORTABILITY UPGRADES ⁽⁷⁾																				
8.1) INSTALL SUPPORT	A		-	-	1.534	-	-	1.565	-	-	2.732	-	-	1.628	-	-	-	-	-	1.628
8.2) AEMP	A		-	-	5.559	-	-	5.670	-	-	5.783	-	-	5.899	-	-	-	-	-	5.899
8.3) COTS UWC ENGINEERING SUPPORT	A		-	-	1.764	-	-	1.799	-	-	3.142	-	-	1.872	-	-	-	-	-	1.872
8.4) COTS TECH INSERTION	A		-	-	19.521	-	-	19.911	-	-	20.309	-	-	20.715	-	-	-	-	-	20.715
8.5) SHIPYARD INSTALLATION INDUSTRIAL SUPPORT	A		-	-	5.713	-	-	5.827	-	-	10.178	-	-	6.062	-	-	-	-	-	6.062
Subtotal: 8) SA303 COTS SUPPORTABILITY UPGRADES			-	-	34.091	-	-	34.772	-	-	42.144	-	-	36.176	-	-	-	-	-	36.176
9) SA401 INITIAL TRAINING																				
9.1) ACOUSTICS	A		-	-	1.777	-	-	1.812	-	-	1.848	-	-	1.885	-	-	-	-	-	1.885
9.2) TOWED ARRAY	A		-	-	0.667	-	-	0.680	-	-	0.694	-	-	0.708	-	-	-	-	-	0.708
Subtotal: 9) SA401 INITIAL TRAINING			-	-	2.444	-	-	2.492	-	-	2.542	-	-	2.593	-	-	-	-	-	2.593
10) SA900 CONSULTING SERVICES																				
10.1) ACOUSTICS	A		-	-	1.419	-	-	1.447	-	-	1.476	-	-	1.506	-	-	-	-	-	1.506
10.2) TOWED SYSTEMS	A		-	-	0.703	-	-	0.717	-	-	0.731	-	-	0.746	-	-	-	-	-	0.746
Subtotal: 10) SA900 CONSULTING SERVICES			-	-	2.122	-	-	2.164	-	-	2.207	-	-	2.252	-	-	-	-	-	2.252
Total			-	-	135.585	-	-	166.024	-	-	153.005	-	-	133.470	-	-	-	-	-	133.470

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

Footnotes:

- (1) SA102 TOWED SYSTEMS - TB-34X has received official nomenclature designation as TB-34A from Joint Electronics Type Designation Automated System (JETDAS).
- (2) SA102 TOWED SYSTEMS - TB-29X has received official nomenclature designation as TB-29C from Joint Electronics Type Designation Automated System (JETDAS).
- (3) SA102 TOWED SYSTEMS - Refurbishment & Upgrades are variable year-to-year based on projected Towed Array inventory requirements necessary to support submarine deployment schedules.
- (4) SA201 BLOCK CHANGES - Acoustics decrease in FY20 reflects a return to consistent funding profile following a one-time increase in FY19 to address emergent Engineering Change Proposals (ECPs) and hardware changes necessary to address significantly expanded power and infrastructure driven by required capability improvements of SSBN modernization equipment.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment	Aggregated Items Title: SSN Acoustics
⁽⁵⁾ SA202 PRODUCTION/ENGINEERING SUPPORT - Acoustics decrease in FY20 reflects a return to consistent funding profile following a one-time increase to support expedited procurement of Acoustics Upgrades equipment to address increased power and infrastructure requirements driven by required capability improvements of SSBN modernization equipment. ⁽⁶⁾ SA202 PRODUCTION/ENGINEERING SUPPORT - FY20 continues procurement of OHIO Class Large Vertical Array (LVA) and begins procurement of VA Class LVA. Funding increase in FY20 supports production and engineering requirements specific to LVA on OHIO and VA Class submarines. ⁽⁷⁾ SA303 COTS SUPPORTABILITY UPGRADES - FY20 marks a return to a consistent funding profile following a one-time increase in FY19 for Install Support, COTS UWC Engineering Support, and Shipyard Installation Industrial Support. FY19 increases supported expedited procurement and emergent installation support to address increased power and infrastructure requirements of SSBN modernization equipment.		

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2							P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment							Aggregated Items Title: Sonar Switches and Transducers						
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
1) PU100 SONAR SWITCHES AND TRANSDUCERS ⁽⁸⁾																				
1.1) TR-353	A		-	-	-	6,367.25	100	0.637	6,494.59	100	0.649	6,624.48	100	0.662	-	-	-	6,624.48	100	0.662
1.2) CW-1147 DOME	A		18,700.00	10	0.187	19,101.74	10	0.191	19,483.78	10	0.195	19,873.45	10	0.199	-	-	-	19,873.45	10	0.199
1.3) CW-1181E DOME	A		5,200.00	15	0.078	5,306.04	18	0.096	5,412.16	18	0.097	5,520.40	18	0.099	-	-	-	5,520.40	18	0.099
1.4) DT-574 100FT	A		2,080.00	100	0.208	2,122.42	100	0.212	2,164.86	100	0.216	2,208.16	100	0.221	-	-	-	2,208.16	100	0.221
1.5) MX-12309 SSGN HFSA WINDOW	A		-	-	-	188,213.00	1	0.188	191,977.26	1	0.192	195,816.81	1	0.196	-	-	-	195,816.81	1	0.196
1.6) CABLES	A		-	-	0.710	-	-	0.550	-	-	0.748	-	-	0.752	-	-	-	-	-	0.752
1.7) DT-574 50FT	A		573.33	300	0.172	584.15	300	0.175	595.84	300	0.179	607.75	300	0.182	-	-	-	607.75	300	0.182
1.8) CW-1181C	A		5,200.00	20	0.104	5,306.04	20	0.106	5,412.16	20	0.108	5,520.40	20	0.110	-	-	-	5,520.40	20	0.110
1.9) MX-10624 Window	A		13,900.00	10	0.139	14,220.19	10	0.142	14,504.59	10	0.145	14,794.68	10	0.148	-	-	-	14,794.68	10	0.148
1.10) DT-5740 LSA OBE	A		17,000.00	20	0.340	17,346.67	20	0.347	17,693.60	20	0.354	18,047.47	20	0.361	-	-	-	18,047.47	20	0.361
1.11) DT-511 Hydrophone	A		29,400.00	15	0.441	29,996.82	15	0.450	30,596.75	15	0.459	31,208.69	15	0.468	-	-	-	31,208.69	15	0.468
1.12) DT-592 Hydrophone	A		41,333.33	18	0.744	42,173.47	18	0.759	43,016.94	18	0.774	43,877.28	18	0.790	-	-	-	43,877.28	18	0.790
1.13) TR-233 Transducer	A		10,400.00	20	0.208	10,612.08	20	0.212	10,824.32	20	0.216	11,040.81	20	0.221	-	-	-	11,040.81	20	0.221
1.14) TR-282 Transducer	A		28,428.57	7	0.199	29,038.51	7	0.203	29,619.28	7	0.207	30,211.67	7	0.211	-	-	-	30,211.67	7	0.211
1.15) TR-302 Transducer	A		-	-	-	23,801.38	18	0.428	24,277.41	18	0.437	24,762.95	18	0.446	-	-	-	24,762.95	18	0.446
1.16) TR-302 Window	A		1,000.00	10	0.010	1,061.21	10	0.011	1,082.43	10	0.011	1,104.08	10	0.011	-	-	-	1,104.08	10	0.011
1.17) TR-321 Transducer	A		17,000.00	9	0.153	17,340.00	9	0.156	17,686.80	9	0.159	18,040.54	9	0.162	-	-	-	18,040.54	9	0.162
1.18) TR-321 V CTD	A		19,050.00	20	0.381	19,439.40	20	0.389	19,828.19	20	0.397	20,224.75	20	0.404	-	-	-	20,224.75	20	0.404
1.19) TR-338 Transducer	A		24,000.00	15	0.360	24,480.00	15	0.367	24,969.60	15	0.375	25,468.99	15	0.382	-	-	-	25,468.99	15	0.382
1.20) TR-341 Transducer	A		18,350.00	20	0.367	18,727.20	20	0.375	19,101.74	20	0.382	19,483.78	20	0.390	-	-	-	19,483.78	20	0.390
1.21) WAA OBE	A		12,480.00	50	0.624	12,734.50	50	0.637	12,989.19	50	0.649	13,248.97	50	0.662	-	-	-	13,248.97	50	0.662
1.22) NCC CONNECTORS	A		1,038.46	52	0.054	1,061.21	52	0.055	1,082.43	50	0.054	1,104.08	50	0.055	-	-	-	1,104.08	50	0.055
1.23) DT-699 HFSA RECEIVE	A		73,833.33	6	0.443	75,345.77	6	0.452	76,852.68	6	0.461	78,389.74	6	0.470	-	-	-	78,389.74	6	0.470
1.24) TR-364 HFSP XMIT	A		162,000.00	1	0.162	165,043.28	1	0.165	168,344.15	1	0.168	171,711.03	1	0.172	-	-	-	171,711.03	1	0.172
1.25) TR-317 ⁽⁹⁾	A		-	-	-	4,244.83	650	2.759	4,329.73	650	2.814	4,416.32	850	3.754	-	-	-	4,416.32	850	3.754
1.26) TR-281	A		23,333.33	6	0.140	23,794.18	6	0.143	24,270.06	6	0.146	24,755.46	6	0.149	-	-	-	24,755.46	6	0.149

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2								P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment							Aggregated Items Title: Sonar Switches and Transducers				

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
1.27) TR-302 Transducer First Article	A		150,000.00	2	0.300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.28) TR-317 FIRST ARTICLE	A		81,650.00	20	1.633	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.29) TR-353 FIRST ARTICLE	A		81,650.00	20	1.633	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.30) DT-513 Hydrophone	A		4,378.05	82	0.359	4,460.63	75	0.335	4,549.84	85	0.387	4,640.84	75	0.348	-	-	-	4,640.84	75	0.348
1.31) DT-100 HFSA RECEIVE	A		78,000.00	2	0.156	79,590.60	2	0.159	81,182.41	3	0.244	82,806.06	3	0.248	-	-	-	82,806.06	3	0.248
Subtotal: 1) PU100 SONAR SWITCHES AND TRANSDUCERS			-	-	10.305	-	-	10.699	-	-	11.223	-	-	12.273	-	-	-	-	-	12.273
2) PU200 ENGINEERING CHANGES																				
2.1) ENGINEERING CHANGES	A		-	-	0.214	-	-	0.219	-	-	0.223	-	-	0.227	-	-	-	-	-	0.227
Subtotal: 2) PU200 ENGINEERING CHANGES			-	-	0.214	-	-	0.219	-	-	0.223	-	-	0.227	-	-	-	-	-	0.227
3) PU300 PROGRAM SUPPORT																				
3.1) PROGRAM SUPPORT	A		-	-	1.073	-	-	1.094	-	-	1.116	-	-	1.138	-	-	-	-	-	1.138
Subtotal: 3) PU300 PROGRAM SUPPORT			-	-	1.073	-	-	1.094	-	-	1.116	-	-	1.138	-	-	-	-	-	1.138
Total			-	-	11.592	-	-	12.012	-	-	12.562	-	-	13.638	-	-	-	-	-	13.638

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

Footnotes:

- ⁽⁸⁾ PU100 SONAR SWITCHES AND TRANSDUCERS - Due to Fleet usage requirements to maintain submarines in an operational status, adjustments are made to quantities throughout the FYDP. Items not procured in a single year do not impact the production line.
- ⁽⁹⁾ PU100 SONAR SWITCHES AND TRANSDUCERS - TR-317 procurements increase beginning FY 2020 to support transducer requirements associated with continued Los Angeles Class submarine deployments as well as additional Virginia Class submarines entering service.

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2					P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment					Modification Number / Title: 1 / SA101 SSBN LEGACY INTERFACE HARDWARE		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	0.000	11.652	27.527	0.000	27.527	20.902	5.046	0.000	0.000	0.000	65.127
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	0.000	11.652	27.527	0.000	27.527	20.902	5.046	0.000	0.000	0.000	65.127
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	0.000	11.652	27.527	0.000	27.527	20.902	5.046	0.000	0.000	0.000	65.127
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Funding supports procurement of hardware to accommodate increased power requirements of SSBN modernization equipment. The addition of SSBN Legacy Interface Hardware in FY 2019 supports emergent Engineering Change Proposals (ECPs) and hardware changes necessary to address significantly expanded power and infrastructure driven by required capability improvements. These funds support the conversion of the SSBN from a legacy Sonar system to the A-RCI model requiring upgrades to the power and infrastructure of the platform. [SA101 SSBN LEGACY INTERFACE HARDWARE] Increases in FY 2020 due to funding the installation of two kits purchased in FY 2019 and the procurement of three additional kits in FY 2020.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2				P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment						Modification Number / Title: 1 / SA101 SSBN LEGACY INTERFACE HARDWARE			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: SSBN				Modification Type: SHIPALT				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	
Procurement													
<i>Modification Item 1 of 1:</i> SA101 SSBN LEGACY INTERFACE HARDWARE													
B Kits													
Recurring													
1.1.1) SA101 SSBN LEGACY INTERFACE HARDWARE - NonOrganic	- / -	- / -	2 / 11.652	3 / 17.828	- / -	3 / 17.828	1 / 6.062	- / -	- / -	- / -	- / -	6 / 35.542	
<i>Subtotal: Recurring</i>	<i>- / 0.000</i>	<i>- / -</i>	<i>- / 11.652</i>	<i>- / 17.828</i>	<i>- / -</i>	<i>- / 17.828</i>	<i>- / 6.062</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 0.000</i>	<i>- / 35.542</i>	
<i>Subtotal: SA101 SSBN LEGACY INTERFACE HARDWARE</i>	<i>- / -</i>	<i>- / -</i>	<i>2 / 11.652</i>	<i>3 / 17.828</i>	<i>- / -</i>	<i>3 / 17.828</i>	<i>1 / 6.062</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>6 / 35.542</i>	
<i>Subtotal: Procurement, All Modification Items</i>	<i>- / 0.000</i>	<i>- / -</i>	<i>- / 11.652</i>	<i>- / 17.828</i>	<i>- / -</i>	<i>- / 17.828</i>	<i>- / 6.062</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 0.000</i>	<i>- / 35.542</i>	
Installation													
<i>Modification Item 1 of 1:</i> SA101 SSBN LEGACY INTERFACE HARDWARE	<i>- / 0.000</i>	<i>- / 0.000</i>	<i>- / 0.000</i>	<i>- / 9.699</i>	<i>- / 0.000</i>	<i>- / 9.699</i>	<i>- / 14.840</i>	<i>- / 5.046</i>	<i>- / 0.000</i>	<i>- / 0.000</i>	<i>- / 0.000</i>	<i>- / 29.585</i>	
<i>Subtotal: Installation</i>	<i>- / 0.000</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 9.699</i>	<i>- / -</i>	<i>- / 9.699</i>	<i>- / 14.840</i>	<i>- / 5.046</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 0.000</i>	<i>- / 29.585</i>	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	11.652	27.527	0.000	27.527	20.902	5.046	0.000	0.000	0.000	65.127	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2										P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment										Modification Number / Title: 1 / SA101 SSBN LEGACY INTERFACE HARDWARE											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: SA101 SSBN LEGACY INTERFACE HARDWARE																															
Manufacturer Information																															
Manufacturer Name: Lockheed Martin															Manufacturer Location: Manassas, VA																
Administrative Leadtime (in Months): 6															Production Leadtime (in Months): 12																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates						Dec 2018				Dec 2019				Dec 2020																	
Delivery Dates						Dec 2019				Dec 2020				Dec 2021																	
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: SA101 SSBN LEGACY INTERFACE HARDWARE																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2019		- / -		- / -		- / -		2 / 9.699		0 / 0.000		2 / 9.699		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 9.699					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		3 / 14.840		- / -		- / -		- / -		- / -		0 / 0.000		3 / 14.840					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 5.046		- / -		- / -		- / -		0 / 0.000		1 / 5.046					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
Total		- / -		- / -		- / -		2 / 9.699		0 / 0.000		2 / 9.699		3 / 14.840		1 / 5.046		- / -		- / -		- / -		0 / 0.000		6 / 29.585					
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	1	1	-	1	1	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	6
Out	-	-	-	-	-	-	-	-	-	-	1	1	-	1	1	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	6

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2					P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment					Modification Number / Title: 2 / SA106 LOW COST CONFORMAL ARRAY KITS		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	12.974	13.234	3.680	10.015	0.000	10.015	14.044	14.325	14.612	14.903	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	12.974	13.234	3.680	10.015	0.000	10.015	14.044	14.325	14.612	14.903	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	12.974	13.234	3.680	10.015	0.000	10.015	14.044	14.325	14.612	14.903	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Procurement of Low Cost Conformal Array (LCCA) to provide enhanced situational awareness and collision avoidance capability. [SA106 HULL SENSORS LOW COST CONFORMAL ARRAY KITS] Funds in FY 2020 continue the procurement and installation of Low Cost Conformal Arrays.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2					P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment					Modification Number / Title: 2 / SA106 LOW COST CONFORMAL ARRAY KITS			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: SSN				Modification Type: SHIPALT				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
<i>Modification Item 1 of 1:</i> SA106 LOW COST CONFORMAL ARRAY KITS													
B Kits													
Recurring													
1.1.1) SA106 HULL SENSORS LOW COST CONFORMAL ARRAY KITS - NonOrganic ⁽¹⁰⁾	4 / 9.437	2 / 9.626	- / -	2 / 10.015	- / -	2 / 10.015	2 / 10.215	2 / 10.419	2 / 10.628	2 / 10.840	Continuing	Continuing	
<i>Subtotal: Recurring</i>	- / 9.437	- / 9.626	- / -	- / 10.015	- / -	- / 10.015	- / 10.215	- / 10.419	- / 10.628	- / 10.840	Continuing	Continuing	
<i>Subtotal: SA106 LOW COST CONFORMAL ARRAY KITS</i>	4 / 9.437	2 / 9.626	- / -	2 / 10.015	- / -	2 / 10.015	2 / 10.215	2 / 10.419	2 / 10.628	2 / 10.840	Continuing	Continuing	
<i>Subtotal: Procurement, All Modification Items</i>	- / 9.437	- / 9.626	- / -	- / 10.015	- / -	- / 10.015	- / 10.215	- / 10.419	- / 10.628	- / 10.840	Continuing	Continuing	
Installation													
<i>Modification Item 1 of 1:</i> SA106 LOW COST CONFORMAL ARRAY KITS	- / 3.537	- / 3.608	- / 3.680	- / 0.000	- / 0.000	- / 0.000	- / 3.829	- / 3.906	- / 3.984	- / 4.063	Continuing	Continuing	
<i>Subtotal: Installation</i>	- / 3.537	- / 3.608	- / 3.680	- / -	- / -	- / -	- / 3.829	- / 3.906	- / 3.984	- / 4.063	Continuing	Continuing	
Total													
Total Cost (Procurement + Support + Installation)	12.974	13.234	3.680	10.015	0.000	10.015	14.044	14.325	14.612	14.903	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2										P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment										Modification Number / Title: 2 / SA106 LOW COST CONFORMAL ARRAY KITS											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: SA106 LOW COST CONFORMAL ARRAY KITS																															
Manufacturer Information																															
Manufacturer Name: LOCKHEED MARTIN															Manufacturer Location: SYRACUSE, NY																
Administrative Leadtime (in Months): 6															Production Leadtime (in Months): 12																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates		Apr 2018								Apr 2020				Apr 2021				Apr 2022				Apr 2023				Apr 2024					
Delivery Dates		Apr 2019								Apr 2021				Apr 2022				Apr 2023				Apr 2024				Apr 2025					
Installation Information																															
Method of Implementation: SHIPALT:: Installation Name: SA106 HULL SENSORS LOW COST CONFORMAL ARRAY KITS																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		2 / 3.537		2 / 3.608		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		4 / 7.145							
FY 2018		- / -		- / -		2 / 3.680		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 3.680							
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		2 / 3.829		- / -		- / -		- / -		0 / 0.000		2 / 3.829							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		2 / 3.906		- / -		- / -		0 / 0.000		2 / 3.906							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		2 / 3.984		- / -		0 / 0.000		2 / 3.984							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		2 / 4.063		0 / 0.000		2 / 4.063							
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		2 / 4.145		2 / 4.145							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		Continuing		Continuing							
Total		2 / 3.537		2 / 3.608		2 / 3.680		- / -		- / -		- / -		2 / 3.829		2 / 3.906		2 / 3.984		2 / 4.063		Continuing		Continuing							
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	2	-	-	2	-	-	-	2	-	-	-	-	-	-	-	2	-	-	-	2	-	-	-	2	-	-	-	2	-	Cont.	Cont.
Out	2	-	-	2	-	-	-	2	-	-	-	-	-	-	-	2	-	-	-	2	-	-	-	2	-	-	-	2	-	Cont.	Cont.
Footnotes:																															
⁽¹⁰⁾ Due to contract delays, FY 2019 procurement of Low Cost Conformal Arrays (LCCA) decreased from two (2) to zero (0). Associated FY 2019 funding is utilized to fund the installation of two (2) VIRGINIA Class SSN Submarine Warfare Federated Tactical System (SWFTS) modernization ship-sets (As shown in 10/SA303 VIRGINIA CLASS TECHNICAL INSERTION KITS (SWFTS) below), SSN 788 and SSN																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment	Modification Number / Title: 2 / SA106 LOW COST CONFORMAL ARRAY KITS
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
791, procured in FY 2018 by Congressional direction. The remaining balance will be transferred to support the corresponding SWFTS modernization ship-set installations in Line Items 0840 and 5420. SWFTS procurement in FY 2018 was above the baseline profile due to Congressional program increases (P.L. 115-141), however the associated installation funding was not included in the FY 2019 Appropriation.		

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2					P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment					Modification Number / Title: 3 / SA106 HIGH FREQUENCY SAIL ARRAY		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	3.846	6.117	6.120	8.405	0.000	8.405	6.492	2.249	0.000	0.000	0.000	33.229
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	3.846	6.117	6.120	8.405	0.000	8.405	6.492	2.249	0.000	0.000	0.000	33.229
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	3.846	6.117	6.120	8.405	0.000	8.405	6.492	2.249	0.000	0.000	0.000	33.229
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: The High Frequency Sail Array (HFSA) provides high frequency active and passive capability supporting Anti-Submarine Warfare (ASW) and Anti-Surface Warfare (ASUW) for SSNs, and contact avoidance for SSNs and SSBNs. [SA106 HIGH FREQUENCY SAIL ARRAY] Increases in FY 2020 due to funding the installation of two kits purchased in FY 2019 and the procurement of two additional kits in FY 2020.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2					P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment					Modification Number / Title: 3 / SA106 HIGH FREQUENCY SAIL ARRAY			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: SSN, SSBN				Modification Type: SHIPALT				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	
Procurement													
<i>Modification Item 1 of 1:</i> SA106 HIGH FREQUENCY SAIL ARRAY													
B Kits													
Recurring													
1.1.1) SA106 HIGH FREQUENCY SAIL ARRAY - NonOrganic	2 / 3.846	1 / 1.961	2 / 4.001	2 / 4.081	- / -	2 / 4.081	1 / 2.082	- / -	- / -	- / -	- / -	8 / 15.971	
<i>Subtotal: Recurring</i>	- / 3.846	- / 1.961	- / 4.001	- / 4.081	- / -	- / 4.081	- / 2.082	- / -	- / -	- / -	- / 0.000	- / 15.971	
<i>Subtotal: SA106 HIGH FREQUENCY SAIL ARRAY</i>	2 / 3.846	1 / 1.961	2 / 4.001	2 / 4.081	- / -	2 / 4.081	1 / 2.082	- / -	- / -	- / -	- / -	8 / 15.971	
<i>Subtotal: Procurement, All Modification Items</i>	- / 3.846	- / 1.961	- / 4.001	- / 4.081	- / -	- / 4.081	- / 2.082	- / -	- / -	- / -	- / 0.000	- / 15.971	
Installation													
<i>Modification Item 1 of 1:</i> SA106 HIGH FREQUENCY SAIL ARRAY	- / 0.000	- / 4.156	- / 2.119	- / 4.324	- / 0.000	- / 4.324	- / 4.410	- / 2.249	- / 0.000	- / 0.000	- / 0.000	- / 17.258	
<i>Subtotal: Installation</i>	- / 0.000	- / 4.156	- / 2.119	- / 4.324	- / -	- / 4.324	- / 4.410	- / 2.249	- / -	- / -	- / 0.000	- / 17.258	
Total													
Total Cost (Procurement + Support + Installation)	3.846	6.117	6.120	8.405	0.000	8.405	6.492	2.249	0.000	0.000	0.000	33.229	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2										P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment										Modification Number / Title: 3 / SA106 HIGH FREQUENCY SAIL ARRAY											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: SA106 HIGH FREQUENCY SAIL ARRAY																															
Manufacturer Information																															
Manufacturer Name: NUWC Neport															Manufacturer Location: Newport, RI																
Administrative Leadtime (in Months): 3															Production Leadtime (in Months): 17																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates		Dec 2017				Dec 2018				Dec 2019				Dec 2020																	
Delivery Dates		May 2019				May 2020				May 2021				May 2022																	
Installation Information																															
Method of Implementation: SHIPALT:: Installation Name: SA106 HIGH FREQUENCY SAIL ARRAY																															
Installation Cost		Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total								
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)								
Prior Years		- / -	2 / 4.156		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 4.156								
FY 2018		- / -	- / -		1 / 2.119		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		1 / 2.119								
FY 2019		- / -	- / -		- / -		2 / 4.324		0 / 0.000		2 / 4.324		- / -		- / -		- / -		- / -		0 / 0.000		2 / 4.324								
FY 2020		- / -	- / -		- / -		- / -		- / -		- / -		2 / 4.410		- / -		- / -		- / -		0 / 0.000		2 / 4.410								
FY 2021		- / -	- / -		- / -		- / -		- / -		- / -		- / -		1 / 2.249		- / -		- / -		0 / 0.000		1 / 2.249								
FY 2022		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2023		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2024		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
To Complete		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
Total		- / -	2 / 4.156		1 / 2.119		2 / 4.324		0 / 0.000		2 / 4.324		2 / 4.410		1 / 2.249		- / -		- / -		0 / 0.000		8 / 17.258								
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	2	-	-	-	-	1	-	-	-	2	-	-	-	2	-	-	-	1	-	-	-	-	-	-	-	-	-	
Out	-	-	-	2	-	-	-	-	1	-	-	-	2	-	-	-	2	-	-	-	1	-	-	-	-	-	-	-	-	-	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2				P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment						Modification Number / Title: 4 / SA106 OHIO CLASS LARGE VERTICAL ARRAY		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	0.000	18.525	18.896	0.000	18.896	29.400	29.989	30.588	31.200	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	0.000	18.525	18.896	0.000	18.896	29.400	29.989	30.588	31.200	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	0.000	18.525	18.896	0.000	18.896	29.400	29.989	30.588	31.200	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: The Large Vertical Array (LVA) provides improved detection and enhanced tactical situational awareness capability for tracking targets of interest, and supports acoustic superiority objectives for OHIO class submarines. SSBN systems will be approximately half the width of their SSN counterparts. This variance reflects the difference in mission, expected environment, and requirements. [SA106 OHIO CLASS LARGE VERTICAL ARRAY] Funding in FY 2020 provides for the continued procurement of the Large Vertical Array (LVA) for OHIO Class submarines.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2				P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment						Modification Number / Title: 4 / SA106 OHIO CLASS LARGE VERTICAL ARRAY			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: SSBN				Modification Type: SHIPALT				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	
Procurement													
<i>Modification Item 1 of 1:</i> SA106 OHIO CLASS LARGE VERTICAL ARRAY													
B Kits													
Recurring													
1.1.1) SA106 OHIO CLASS LARGE VERTICAL ARRAY - NonOrganic	- / -	- / -	1 / 18.525	1 / 18.896	- / -	1 / 18.896	1 / 19.273	1 / 19.659	1 / 20.052	1 / 20.453	Continuing	Continuing	
<i>Subtotal: Recurring</i>	- / 0.000	- / -	- / 18.525	- / 18.896	- / -	- / 18.896	- / 19.273	- / 19.659	- / 20.052	- / 20.453	Continuing	Continuing	
<i>Subtotal: SA106 OHIO CLASS LARGE VERTICAL ARRAY</i>	- / -	- / -	1 / 18.525	1 / 18.896	- / -	1 / 18.896	1 / 19.273	1 / 19.659	1 / 20.052	1 / 20.453	Continuing	Continuing	
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.000	- / -	- / 18.525	- / 18.896	- / -	- / 18.896	- / 19.273	- / 19.659	- / 20.052	- / 20.453	Continuing	Continuing	
Installation													
<i>Modification Item 1 of 1:</i> SA106 OHIO CLASS LARGE VERTICAL ARRAY													
	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 10.127	- / 10.330	- / 10.536	- / 10.747	Continuing	Continuing	
<i>Subtotal: Installation</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / 10.127	- / 10.330	- / 10.536	- / 10.747	Continuing	Continuing	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	18.525	18.896	0.000	18.896	29.400	29.989	30.588	31.200	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2										P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment										Modification Number / Title: 4 / SA106 OHIO CLASS LARGE VERTICAL ARRAY											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: SA106 OHIO CLASS LARGE VERTICAL ARRAY																															
Manufacturer Information																															
Manufacturer Name: Electric Boat															Manufacturer Location: Groton, CT																
Administrative Leadtime (in Months): 3															Production Leadtime (in Months): 24																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates						Nov 2018				Nov 2019				Nov 2020				Nov 2021				Nov 2022				Nov 2023					
Delivery Dates						Nov 2020				Nov 2021				Nov 2022				Nov 2023				Nov 2024				Nov 2025					
Installation Information																															
Method of Implementation: SHIPALT:: Installation Name: SA106 OHIO CLASS LARGE VERTICAL ARRAY																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		1 / 10.127		- / -		- / -		- / -		- / -		0 / 0.000		1 / 10.127					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 10.330		- / -		- / -		- / -		0 / 0.000		1 / 10.330					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 10.536		- / -		- / -		0 / 0.000		1 / 10.536					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 10.747		- / -		0 / 0.000		1 / 10.747					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 10.962		1 / 10.962					
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 11.181		1 / 11.181					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		Continuing		Continuing					
Total		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 10.127		1 / 10.330		1 / 10.536		1 / 10.747		Continuing		Continuing					
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	Cont.	Cont.
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	Cont.	Cont.

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2				P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment						Modification Number / Title: 5 / SA106 VIRGINIA CLASS LARGE VERTICAL ARRAY		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	0.000	0.000	43.405	0.000	43.405	44.273	65.077	66.379	67.706	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	0.000	0.000	43.405	0.000	43.405	44.273	65.077	66.379	67.706	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	0.000	0.000	43.405	0.000	43.405	44.273	65.077	66.379	67.706	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Procurement of the VIRGINIA Class Large Vertical Array (LVA) provides improved detection and enhanced tactical situational awareness capability for tracking targets of interest, and supports acoustic superiority objectives for the VIRGINIA class submarines. SSN systems will be approximately twice the width of their SSBN counterparts. This variance reflects the difference in mission, expected environment, and requirements. [SA106 VIRGINIA CLASS LARGE VERTICAL ARRAY] Increased funding in FY 2020 provides for the first procurement of the Large Vertical Array (LVA) for VIRGINIA Class submarines.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2				P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment						Modification Number / Title: 5 / SA106 VIRGINIA CLASS LARGE VERTICAL ARRAY			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: SSN				Modification Type: SHIPALT				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	
Procurement													
<i>Modification Item 1 of 1:</i> SA106 VIRGINIA CLASS LARGE VERTICAL ARRAY													
B Kits													
Recurring													
1.1.1) SA106 VIRGINIA CLASS LARGE VERTICAL ARRAY - NonOrganic	- / -	- / -	- / -	1 / 43.405	- / -	1 / 43.405	1 / 44.273	1 / 45.159	1 / 46.062	1 / 46.983	Continuing	Continuing	
<i>Subtotal: Recurring</i>	- / 0.000	- / -	- / -	- / 43.405	- / -	- / 43.405	- / 44.273	- / 45.159	- / 46.062	- / 46.983	Continuing	Continuing	
<i>Subtotal: SA106 VIRGINIA CLASS LARGE VERTICAL ARRAY</i>	- / -	- / -	- / -	1 / 43.405	- / -	1 / 43.405	1 / 44.273	1 / 45.159	1 / 46.062	1 / 46.983	Continuing	Continuing	
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.000	- / -	- / -	- / 43.405	- / -	- / 43.405	- / 44.273	- / 45.159	- / 46.062	- / 46.983	Continuing	Continuing	
Installation													
<i>Modification Item 1 of 1:</i> SA106 VIRGINIA CLASS LARGE VERTICAL ARRAY	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 19.918	- / 20.317	- / 20.723	Continuing	Continuing	
<i>Subtotal: Installation</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / 19.918	- / 20.317	- / 20.723	Continuing	Continuing	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	0.000	43.405	0.000	43.405	44.273	65.077	66.379	67.706	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2										P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment										Modification Number / Title: 5 / SA106 VIRGINIA CLASS LARGE VERTICAL ARRAY												
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																	
Modification Item 1 of 1: SA106 VIRGINIA CLASS LARGE VERTICAL ARRAY																																
Manufacturer Information																																
Manufacturer Name: Electric Boat															Manufacturer Location: Groton, CT																	
Administrative Leadtime (in Months): 3															Production Leadtime (in Months): 24																	
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024						
Contract Dates										Nov 2019				Nov 2020				Nov 2021				Nov 2022				Nov 2023						
Delivery Dates										Nov 2021				Nov 2022				Nov 2023				Nov 2024				Nov 2025						
Installation Information																																
Method of Implementation: TBD:: Installation Name: SA106 VIRGINIA CLASS LARGE VERTICAL ARRAY																																
Installation Cost		Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total									
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)									
Prior Years		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2018		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2019		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2020		- / -	- / -		- / -		- / -		- / -		- / -		- / -		1 / 19.918		- / -		- / -		0 / 0.000		1 / 19.918									
FY 2021		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 20.317		- / -		0 / 0.000		1 / 20.317									
FY 2022		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 20.723		0 / 0.000		1 / 20.723									
FY 2023		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 21.137		1 / 21.137									
FY 2024		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 21.560		1 / 21.560									
To Complete		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		Continuing		Continuing									
Total		- / -	- / -		- / -		- / -		- / -		- / -		- / -		1 / 19.918		1 / 20.317		1 / 20.723		Continuing		Continuing									
Installation Schedule																																
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot	
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	1	-	Cont.	Cont.
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	1	-	Cont.	Cont.

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2				P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment						Modification Number / Title: 6 / SA303 688/688I TECHNOLOGY INSERTION KITS (SWFTS)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	13.274	47.836	62.603	55.560	0.000	55.560	11.974	43.149	100.481	52.348	Continuing	Continuing
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	13.274	47.836	62.603	55.560	0.000	55.560	11.974	43.149	100.481	52.348	Continuing	Continuing
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	13.274	47.836	62.603	55.560	0.000	55.560	11.974	43.149	100.481	52.348	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Description: Provides technology insertion upgrade kits to previously installed A-RCI systems, providing the latest and most current capability and includes tech insertion to Legacy Replacement components on Los Angeles Class submarines. [SA303 688i TECHNOLOGY INSERTION KITS (SWFTS)] Funding in FY 2020 provides for the installation of six kits purchased in FY 2019 and the procurement of five additional kits in FY 2020.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2				P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment						Modification Number / Title: 6 / SA303 688/688I TECHNOLOGY INSERTION KITS (SWFTS)			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: SSN				Modification Type: SHIPALT				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	
Procurement													
<i>Modification Item 1 of 1:</i> SA303 688/688I TECHNOLOGY INSERTION KITS (SWFTS)													
B Kits													
Non-Recurring													
1.1.1) SA303 688i TECHNOLOGY INSERTION KITS (SWFTS) - NonOrganic	6 / 0.000	6 / 47.836	6 / 48.792	5 / 41.473	- / -	5 / 41.473	- / -	5 / 43.149	10 / 88.024	3 / 26.935	Continuing	Continuing	
<i>Subtotal: Non-Recurring</i>	- / 0.000	- / 47.836	- / 48.792	- / 41.473	- / -	- / 41.473	- / -	- / 43.149	- / 88.024	- / 26.935	Continuing	Continuing	
<i>Subtotal: SA303 688/688I TECHNOLOGY INSERTION KITS (SWFTS)</i>	6 / 0.000	6 / 47.836	6 / 48.792	5 / 41.473	- / -	5 / 41.473	- / -	5 / 43.149	10 / 88.024	3 / 26.935	Continuing	Continuing	
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.000	- / 47.836	- / 48.792	- / 41.473	- / -	- / 41.473	- / -	- / 43.149	- / 88.024	- / 26.935	Continuing	Continuing	
Installation													
<i>Modification Item 1 of 1:</i> SA303 688/688I TECHNOLOGY INSERTION KITS (SWFTS)	- / 13.274	- / 0.000	- / 13.811	- / 14.087	- / 0.000	- / 14.087	- / 11.974	- / 0.000	- / 12.457	- / 25.413	Continuing	Continuing	
<i>Subtotal: Installation</i>	- / 13.274	- / -	- / 13.811	- / 14.087	- / -	- / 14.087	- / 11.974	- / -	- / 12.457	- / 25.413	Continuing	Continuing	
Total													
Total Cost (Procurement + Support + Installation)	13.274	47.836	62.603	55.560	0.000	55.560	11.974	43.149	100.481	52.348	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2					P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment					Modification Number / Title: 6 / SA303 688/688I TECHNOLOGY INSERTION KITS (SWFTS)																					
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:																					
Modification Item 1 of 1: SA303 688/688I TECHNOLOGY INSERTION KITS (SWFTS)																															
Manufacturer Information																															
Manufacturer Name: Lockheed Martin										Manufacturer Location: VA																					
Administrative Leadtime (in Months): 3										Production Leadtime (in Months): 12																					
Dates	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024						
Contract Dates	Apr 2018				Apr 2019				Apr 2020								Apr 2022				Apr 2023				Apr 2024						
Delivery Dates	Apr 2019				Apr 2020				Apr 2021								Apr 2023				Apr 2024				Apr 2025						
Installation Information																															
Method of Implementation: SHIPALT:: Installation Name: SA303 688i TECHNOLOGY INSERTION KITS (SWFTS)																															
Installation Cost		Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total																		
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																		
Prior Years		6 / 13.274	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	6 / 13.274																		
FY 2018		- / -	- / -	6 / 13.811	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	6 / 13.811																		
FY 2019		- / -	- / -	- / -	6 / 14.087	0 / 0.000	6 / 14.087	- / -	- / -	- / -	- / -	0 / 0.000	6 / 14.087																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	5 / 11.974	- / -	- / -	- / -	0 / 0.000	5 / 11.974																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 12.457	- / -	0 / 0.000	5 / 12.457																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 25.413	0 / 0.000	10 / 25.413																		
FY 2024		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 7.776	3 / 7.776																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing																		
Total		6 / 13.274	- / -	6 / 13.811	6 / 14.087	0 / 0.000	6 / 14.087	5 / 11.974	- / -	5 / 12.457	10 / 25.413	Continuing	Continuing																		
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	6	-	-	-	-	-	-	3	3	-	-	3	3	-	-	2	3	-	-	-	-	-	2	3	-	-	4	4	2	Cont.	Cont.
Out	6	-	-	-	-	-	-	3	3	-	-	3	3	-	-	2	3	-	-	-	-	-	2	3	-	-	4	4	2	Cont.	Cont.

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2					P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment					Modification Number / Title: 7 / SA303 SSGN TECHNOLOGY INSERTION KITS (SWFTS)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	0.000	16.264	21.283	0.000	21.283	4.788	0.000	0.000	0.000	0.000	42.335
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	0.000	16.264	21.283	0.000	21.283	4.788	0.000	0.000	0.000	0.000	42.335
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	0.000	16.264	21.283	0.000	21.283	4.788	0.000	0.000	0.000	0.000	42.335
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Provides technology insertion upgrade kits to previously installed A-RCI systems, providing the latest and most current capability and includes tech insertion to Legacy Replacement components on SSGN class submarines. [SSGN TECHNOLOGY INSERTION KITS (SWFTS)] Funding in FY 2020 provides for the installation of two kits purchased in FY 2019 and the procurement of two additional kits in FY 2020.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2				P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment						Modification Number / Title: 7 / SA303 SSGN TECHNOLOGY INSERTION KITS (SWFTS)			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: SSGN				Modification Type: SHIPALT				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	
Procurement													
<i>Modification Item 1 of 1:</i> SA303 SSGN TECHNOLOGY INSERTION KITS (SWFTS)													
B Kits													
Non-Recurring													
1.1.1) SSGN TECHNOLOGY INSERTION KITS (SWFTS) - NonOrganic	- / -	- / -	2 / 16.264	2 / 16.589	- / -	2 / 16.589	- / -	- / -	- / -	- / -	- / -	4 / 32.853	
<i>Subtotal: Non-Recurring</i>	- / 0.000	- / -	- / 16.264	- / 16.589	- / -	- / 16.589	- / -	- / -	- / -	- / -	- / 0.000	- / 32.853	
<i>Subtotal: SA303 SSGN TECHNOLOGY INSERTION KITS (SWFTS)</i>	- / -	- / -	2 / 16.264	2 / 16.589	- / -	2 / 16.589	- / -	- / -	- / -	- / -	- / -	4 / 32.853	
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.000	- / -	- / 16.264	- / 16.589	- / -	- / 16.589	- / -	- / -	- / -	- / -	- / 0.000	- / 32.853	
Installation													
<i>Modification Item 1 of 1:</i> SA303 SSGN TECHNOLOGY INSERTION KITS (SWFTS)	- / 0.000	- / 0.000	- / 0.000	- / 4.694	- / 0.000	- / 4.694	- / 4.788	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 9.482	
<i>Subtotal: Installation</i>	- / 0.000	- / -	- / -	- / 4.694	- / -	- / 4.694	- / 4.788	- / -	- / -	- / -	- / 0.000	- / 9.482	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	16.264	21.283	0.000	21.283	4.788	0.000	0.000	0.000	0.000	42.335	

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Exhibit P-3a, Individual Modification: PB 2020 Navy												Date: March 2019																			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2										P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment										Modification Number / Title: 7 / SA303 SSGN TECHNOLOGY INSERTION KITS (SWFTS)											
ID Code (A=Service Ready, B=Not Service Ready) :														MDAP/MAIS Code:																	
Modification Item 1 of 1: SA303 SSGN TECHNOLOGY INSERTION KITS (SWFTS)																															
Manufacturer Information																															
Manufacturer Name: Lockheed Martin														Manufacturer Location: VA																	
Administrative Leadtime (in Months): 3														Production Leadtime (in Months): 12																	
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates						Apr 2019				Apr 2020																					
Delivery Dates						Apr 2020				Apr 2021																					
Installation Information																															
Method of Implementation: SHIPALT:: Installation Name: SSGN TECHNOLOGY INSERTION KITS (SWFTS)																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2019		- / -		- / -		- / -		2 / 4.694		0 / 0.000		2 / 4.694		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 4.694					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		2 / 4.788		- / -		- / -		- / -		- / -		0 / 0.000		2 / 4.788					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
Total		- / -		- / -		- / -		2 / 4.694		0 / 0.000		2 / 4.694		2 / 4.788		- / -		- / -		- / -		- / -		0 / 0.000		4 / 9.482					
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Out	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4

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Exhibit P-3a, Individual Modification: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2				P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment					Modification Number / Title: 8 / SA303 SSN 21 TECHNICAL INSERTION KITS (SWFTS)			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	12.037	12.278	3.415	0.000	0.000	0.000	0.000	9.666	13.555	13.826	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	12.037	12.278	3.415	0.000	0.000	0.000	0.000	9.666	13.555	13.826	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	12.037	12.278	3.415	0.000	0.000	0.000	0.000	9.666	13.555	13.826	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Provides technology insertion upgrade kits to previously installed A-RCI systems, providing the latest and most current capability and includes tech insertion to Legacy Replacement components on Seawolf Class submarines.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2					P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment					Modification Number / Title: 8 / SA303 SSN 21 TECHNICAL INSERTION KITS (SWFTS)			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: SSN				Modification Type: SHIPALT				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	
Procurement													
<i>Modification Item 1 of 1:</i> SA303 SSN 21 TECHNICAL INSERTION KITS (SWFTS)													
B Kits													
Recurring													
1.1.1) SA303 SSN 21 TECHNICAL INSERTION KITS (SWFTS) - NonOrganic	2 / 8.755	1 / 8.930	- / -	- / -	- / -	- / -	- / -	1 / 9.666	1 / 9.859	1 / 10.056	Continuing	Continuing	
<i>Subtotal: Recurring</i>	- / 8.755	- / 8.930	- / -	- / -	- / -	- / -	- / -	- / 9.666	- / 9.859	- / 10.056	Continuing	Continuing	
<i>Subtotal: SA303 SSN 21 TECHNICAL INSERTION KITS (SWFTS)</i>	2 / 8.755	1 / 8.930	- / -	- / -	- / -	- / -	- / -	1 / 9.666	1 / 9.859	1 / 10.056	Continuing	Continuing	
<i>Subtotal: Procurement, All Modification Items</i>	- / 8.755	- / 8.930	- / -	- / -	- / -	- / -	- / -	- / 9.666	- / 9.859	- / 10.056	Continuing	Continuing	
Installation													
<i>Modification Item 1 of 1:</i> SA303 SSN 21 TECHNICAL INSERTION KITS (SWFTS)	- / 3.282	- / 3.348	- / 3.415	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 3.696	- / 3.770	Continuing	Continuing	
<i>Subtotal: Installation</i>	- / 3.282	- / 3.348	- / 3.415	- / -	- / -	- / -	- / -	- / -	- / 3.696	- / 3.770	Continuing	Continuing	
Total													
Total Cost (Procurement + Support + Installation)	12.037	12.278	3.415	0.000	0.000	0.000	0.000	9.666	13.555	13.826	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy											Date: March 2019																				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2										P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment										Modification Number / Title: 8 / SA303 SSN 21 TECHNICAL INSERTION KITS (SWFTS)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: SA303 SSN 21 TECHNICAL INSERTION KITS (SWFTS)																															
Manufacturer Information																															
Manufacturer Name: Lockheed Martin															Manufacturer Location: VA																
Administrative Leadtime (in Months): 3															Production Leadtime (in Months): 12																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates		Apr 2018												Apr 2022				Apr 2023				Apr 2024									
Delivery Dates		Apr 2019												Apr 2023				Apr 2024				Apr 2025									
Installation Information																															
Method of Implementation: SHIPALT:: Installation Name: SA303 SSN 21 TECHNICAL INSERTION KITS (SWFTS)																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		1 / 3.282		1 / 3.348		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 6.630							
FY 2018		- / -		- / -		1 / 3.415		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		1 / 3.415							
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 3.696		- / -		0 / 0.000		1 / 3.696							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 3.770		0 / 3.770		1 / 7.540							
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 3.845		1 / 3.845							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		Continuing		Continuing							
Total		1 / 3.282		1 / 3.348		1 / 3.415		- / -		- / -		- / -		- / -		- / -		1 / 3.696		1 / 3.770		Continuing		Continuing							
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	1	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	Cont.	Cont.
Out	1	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	Cont.	Cont.

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Exhibit P-3a, Individual Modification: PB 2020 Navy						Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2				P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment				Modification Number / Title: 9 / SA303 VIRGINIA CLASS TECHNICAL INSERTION W/ CONVERSION KITS (SWFTS)			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	16.957	3.348	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	20.305
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	16.957	3.348	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	20.305
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	16.957	3.348	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	20.305
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Provides initial technology insertion upgrade for A-RCI installed systems on the VA Class, providing the latest and most current capability.

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2				P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment						Modification Number / Title: 9 / SA303 VIRGINIA CLASS TECHNICAL INSERTION W/ CONVERSION KITS (SWFTS)			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: SSN				Modification Type: SHIPALT				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: SA303 VIRGINIA CLASS TECHNICAL INSERTION W/CONVERSION KITS (SWFTS)													
B Kits													
Recurring													
1.1.1) SA303 VIRGINIA CLASS TECHNICAL INSERTION W/CONVERSION KITS (SWFTS) - NonOrganic	2 / 13.675	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 13.675	
Subtotal: Recurring	- / 13.675	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 13.675	
Subtotal: SA303 VIRGINIA CLASS TECHNICAL INSERTION W/CONVERSION KITS (SWFTS)	2 / 13.675	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 13.675	
Subtotal: Procurement, All Modification Items	- / 13.675	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 13.675	
Installation													
Modification Item 1 of 1: SA303 VIRGINIA CLASS TECHNICAL INSERTION W/CONVERSION KITS (SWFTS)	- / 3.282	- / 3.348	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 6.630	
Subtotal: Installation	- / 3.282	- / 3.348	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 6.630	
Total													
Total Cost (Procurement + Support + Installation)	16.957	3.348	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	20.305	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2										P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment										Modification Number / Title: 9 / SA303 VIRGINIA CLASS TECHNICAL INSERTION W/ CONVERSION KITS (SWFTS)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: SA303 VIRGINIA CLASS TECHNICAL INSERTION W/CONVERSION KITS (SWFTS)																															
Manufacturer Information																															
Manufacturer Name: Lockheed Martin															Manufacturer Location: Syracuse, NY																
Administrative Leadtime (in Months): 3															Production Leadtime (in Months): 12																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates																															
Delivery Dates																															
Installation Information																															
Method of Implementation: SHIPALT:: Installation Name: SA303 VIRGINIA CLASS TECHNICAL INSERTION W/CONVERSION KITS (SWFTS)																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		1 / 3.282		1 / 3.348		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 6.630					
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
Total		1 / 3.282		1 / 3.348		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 6.630					
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Out	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2					P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment					Modification Number / Title: 10 / SA303 VIRGINIA CLASS TECHNICAL INSERTION KITS (SWFTS)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	55.810	64.737	17.075	9.291	0.000	9.291	79.363	77.321	18.482	70.394	Continuing	Continuing
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	55.810	64.737	17.075	9.291	0.000	9.291	79.363	77.321	18.482	70.394	Continuing	Continuing
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	55.810	64.737	17.075	9.291	0.000	9.291	79.363	77.321	18.482	70.394	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Description: Provides technology insertion upgrade kits to previously A-RCI installed systems on the VA Class, providing the latest and most current capability. [SA303 VIRGINIA CLASS TECHNICAL INSERTION KITS (SWFTS)] Increase in FY 2020 due to funding the procurement of one additional kit in FY 2020.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2					P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment					Modification Number / Title: 10 / SA303 VIRGINIA CLASS TECHNICAL INSERTION KITS (SWFTS)			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: SSN				Modification Type: SHIPALT				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	
Procurement													
<i>Modification Item 1 of 1: SA303 VIRGINIA CLASS TECHNICAL INSERTION KITS (SWFTS)</i>													
<i>B Kits</i>													
<i>Recurring</i>													
1.1.1) SA303 VIRGINIA CLASS TECHNICAL INSERTION KITS (SWFTS) - NonOrganic ⁽¹¹⁾	7 / 52.528	5 / 44.649	- / -	1 / 9.291	- / -	1 / 9.291	8 / 75.810	5 / 48.329	- / -	7 / 70.394	Continuing	Continuing	
<i>Subtotal: Recurring</i>	<i>- / 52.528</i>	<i>- / 44.649</i>	<i>- / -</i>	<i>- / 9.291</i>	<i>- / -</i>	<i>- / 9.291</i>	<i>- / 75.810</i>	<i>- / 48.329</i>	<i>- / -</i>	<i>- / 70.394</i>	<i>Continuing</i>	<i>Continuing</i>	
<i>Subtotal: SA303 VIRGINIA CLASS TECHNICAL INSERTION KITS (SWFTS)</i>	<i>7 / 52.528</i>	<i>5 / 44.649</i>	<i>- / -</i>	<i>1 / 9.291</i>	<i>- / -</i>	<i>1 / 9.291</i>	<i>8 / 75.810</i>	<i>5 / 48.329</i>	<i>- / -</i>	<i>7 / 70.394</i>	<i>Continuing</i>	<i>Continuing</i>	
<i>Subtotal: Procurement, All Modification Items</i>	<i>- / 52.528</i>	<i>- / 44.649</i>	<i>- / -</i>	<i>- / 9.291</i>	<i>- / -</i>	<i>- / 9.291</i>	<i>- / 75.810</i>	<i>- / 48.329</i>	<i>- / -</i>	<i>- / 70.394</i>	<i>Continuing</i>	<i>Continuing</i>	
Installation													
<i>Modification Item 1 of 1: SA303 VIRGINIA CLASS TECHNICAL INSERTION KITS (SWFTS)</i>	<i>- / 3.282</i>	<i>- / 20.088</i>	<i>- / 17.075</i>	<i>- / 0.000</i>	<i>- / 0.000</i>	<i>- / 0.000</i>	<i>- / 3.553</i>	<i>- / 28.992</i>	<i>- / 18.482</i>	<i>- / 0.000</i>	<i>Continuing</i>	<i>Continuing</i>	
<i>Subtotal: Installation</i>	<i>- / 3.282</i>	<i>- / 20.088</i>	<i>- / 17.075</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 3.553</i>	<i>- / 28.992</i>	<i>- / 18.482</i>	<i>- / -</i>	<i>Continuing</i>	<i>Continuing</i>	
Total													
Total Cost (Procurement + Support + Installation)	55.810	64.737	17.075	9.291	0.000	9.291	79.363	77.321	18.482	70.394	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2					P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment					Modification Number / Title: 10 / SA303 VIRGINIA CLASS TECHNICAL INSERTION KITS (SWFTS)																					
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:																					
Modification Item 1 of 1: SA303 VIRGINIA CLASS TECHNICAL INSERTION KITS (SWFTS)																															
Manufacturer Information																															
Manufacturer Name: Lockheed Martin										Manufacturer Location: VA																					
Administrative Leadtime (in Months): 3										Production Leadtime (in Months): 12																					
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024																								
Contract Dates	Apr 2018		Apr 2020	Apr 2021	Apr 2022	Apr 2023	Apr 2024																								
Delivery Dates	Apr 2019		Apr 2021	Apr 2022	Apr 2023	Apr 2024	Apr 2025																								
Installation Information																															
Method of Implementation: SHIPALT:: Installation Name: SA303 VIRGINIA CLASS TECHNICAL INSERTION KITS (SWFTS)																															
Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total																			
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																			
Prior Years	1 / 3.282	6 / 20.088	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	7 / 23.370																			
FY 2018	- / -	- / -	5 / 17.075	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	5 / 17.075																			
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	1 / 3.553	- / -	- / -	- / -	0 / 0.000	1 / 3.553																			
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	8 / 28.992	- / -	- / -	0 / 0.000	8 / 28.992																			
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 18.482	- / -	0 / 0.000	5 / 18.482																			
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	7 / 26.921	7 / 26.921																			
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing																			
Total	1 / 3.282	6 / 20.088	5 / 17.075	- / -	- / -	- / -	1 / 3.553	8 / 28.992	5 / 18.482	- / -	Continuing	Continuing																			
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	1	2	2	2	-	-	-	3	2	-	-	-	-	-	-	1	-	2	2	2	2	-	-	3	2	-	-	-	-	Cont.	Cont.
Out	1	-	2	2	2	-	-	3	2	-	-	-	-	-	-	1	-	2	2	2	2	-	-	3	2	-	-	-	-	Cont.	Cont.
Footnotes:																															
⁽¹¹⁾ Funding for the installation of two (2) VIRGINIA Class SSN Submarine Warfare Federated Tactical System (SWFTS) modernization ship-sets, SSN 788 and SSN 791, procured in FY 2018 by Congressional direction was added based on contract delays associated with procurement of the Low Cost Conformal Array (LCCA) (as discussed in 3/SA106 HIGH FREQUENCY SAIL ARRAY above).																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2				P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment						Modification Number / Title: 11 / SA303 SSBN TECHNICAL INSERTION CONVERSION (SWFTS)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	24.008	28.667	23.757	25.478	0.000	25.478	19.010	27.803	42.202	30.935	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	24.008	28.667	23.757	25.478	0.000	25.478	19.010	27.803	42.202	30.935	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	24.008	28.667	23.757	25.478	0.000	25.478	19.010	27.803	42.202	30.935	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Provides sonar modernization to the SSBN (TRIDENT) Class Submarine Fleet. [SA303 SSBN TECHNICAL INSERTION CONVERSION (SWFTS)] Increases in FY 2020 due to funding the installation of two kits purchased in FY 2019 and the procurement of three additional kits in FY 2020.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2					P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment					Modification Number / Title: 11 / SA303 SSBN TECHNICAL INSERTION CONVERSION (SWFTS)			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: SSBN				Modification Type: SHIPALT				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	
Procurement													
<i>Modification Item 1 of 1: SA303 SSBN TECHNICAL INSERTION CONVERSION (SWFTS)</i>													
<i>B Kits</i>													
<i>Non-Recurring</i>													
1.1.1) SA303 SSBN TECHNICAL INSERTION CONVERSION (SWFTS) - NonOrganic	5 / 15.814	3 / 16.130	2 / 10.969	3 / 16.782	- / -	3 / 16.782	1 / 5.706	4 / 23.280	4 / 23.746	2 / 12.110	Continuing	Continuing	
<i>Subtotal: Non-Recurring</i>	- / 15.814	- / 16.130	- / 10.969	- / 16.782	- / -	- / 16.782	- / 5.706	- / 23.280	- / 23.746	- / 12.110	Continuing	Continuing	
<i>Subtotal: SA303 SSBN TECHNICAL INSERTION CONVERSION (SWFTS)</i>	5 / 15.814	3 / 16.130	2 / 10.969	3 / 16.782	- / -	3 / 16.782	1 / 5.706	4 / 23.280	4 / 23.746	2 / 12.110	Continuing	Continuing	
<i>Subtotal: Procurement, All Modification Items</i>	- / 15.814	- / 16.130	- / 10.969	- / 16.782	- / -	- / 16.782	- / 5.706	- / 23.280	- / 23.746	- / 12.110	Continuing	Continuing	
Installation													
<i>Modification Item 1 of 1: SA303 SSBN TECHNICAL INSERTION CONVERSION (SWFTS)</i>	- / 8.194	- / 12.537	- / 12.788	- / 8.696	- / 0.000	- / 8.696	- / 13.304	- / 4.523	- / 18.456	- / 18.825	Continuing	Continuing	
<i>Subtotal: Installation</i>	- / 8.194	- / 12.537	- / 12.788	- / 8.696	- / -	- / 8.696	- / 13.304	- / 4.523	- / 18.456	- / 18.825	Continuing	Continuing	
Total													
Total Cost (Procurement + Support + Installation)	24.008	28.667	23.757	25.478	0.000	25.478	19.010	27.803	42.202	30.935	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2					P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment					Modification Number / Title: 11 / SA303 SSBN TECHNICAL INSERTION CONVERSION (SWFTS)																						
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:																						
Modification Item 1 of 1: SA303 SSBN TECHNICAL INSERTION CONVERSION (SWFTS)																																
Manufacturer Information																																
Manufacturer Name: Lockheed Martin										Manufacturer Location: Manassas, VA																						
Administrative Leadtime (in Months): 6										Production Leadtime (in Months): 12																						
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024																									
Contract Dates	Apr 2018	Apr 2019	Apr 2020	Apr 2021	Apr 2022	Apr 2023	Apr 2024																									
Delivery Dates	Apr 2019	Apr 2020	Apr 2021	Apr 2022	Apr 2023	Apr 2024	Apr 2025																									
Installation Information																																
Method of Implementation: SHIPALT:: Installation Name: SA303 SSBN TECHNICAL INSERTION CONVERSION (SWFTS)																																
Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total																				
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																				
Prior Years	2 / 8.194	3 / 12.537	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	5 / 20.731																				
FY 2018	- / -	- / -	3 / 12.788	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 12.788																				
FY 2019	- / -	- / -	- / -	2 / 8.696	0 / 0.000	2 / 8.696	- / -	- / -	- / -	- / -	0 / 0.000	2 / 8.696																				
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	3 / 13.304	- / -	- / -	- / -	0 / 0.000	3 / 13.304																				
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 4.523	- / -	- / -	0 / 0.000	1 / 4.523																				
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 18.456	- / -	0 / 0.000	4 / 18.456																				
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 18.825	0 / 0.000	4 / 18.825																				
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 9.601	2 / 9.601																				
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing																				
Total	2 / 8.194	3 / 12.537	3 / 12.788	2 / 8.696	0 / 0.000	2 / 8.696	3 / 13.304	1 / 4.523	4 / 18.456	4 / 18.825	Continuing	Continuing																				
Installation Schedule																																
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot	
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
In	2	-	-	3	-	-	-	-	2	1	-	-	2	-	-	-	2	1	-	-	1	-	-	-	2	2	-	2	2	-	Cont.	Cont.
Out	2	-	-	3	-	-	-	-	2	1	-	-	2	-	-	-	2	1	-	-	1	-	-	-	2	2	-	2	2	-	Cont.	Cont.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars							P-1 Line Item Number / Title: 2176 / Undersea Warfare Support Equipment					
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A				Other Related Program Elements: 0603512N, 0604518N					
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	87.738	13.653	10.134	8.967	0.000	8.967	10.279	11.813	14.933	15.232	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	87.738	13.653	10.134	8.967	0.000	8.967	10.279	11.813	14.933	15.232	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	87.738	13.653	10.134	8.967	0.000	8.967	10.279	11.813	14.933	15.232	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: This Budget Line Item (BLI) consists of three separate and distinct programs, the N98 sponsored Aircraft Carrier Tactical Support Center (CV-TSC) program, the N96 sponsored Sonar Dome Rubber Windows (SDRW) program, and the N2N6 sponsored Undersea Warfare Decision Support System (USW-DSS) program. FY 2019 TO FY 2020 INCREASE/DECREASE STATEMENT: - FY 2019 (\$10.134M) to FY 2020 (\$8.967M) decrease (\$-1.167M) is driven by the lower cost of procuring Cost Code VM601 USW-DSS Tech Refresh systems targeted for shipboard platforms in FY 2020 vs. the higher cost of procuring USW-DSS Tech Refresh systems targeted for shore sites/tactical trainers in FY 2019. Shipboard platform systems are roughly half the configuration size of a shore site/tactical trainer. AIRCRAFT CARRIER TACTICAL SUPPORT CENTER (CV-TSC) (Cost Code VM301): The AN/SQQ-34 Aircraft Carrier Tactical Support Center (CV-TSC) program provides increased situational awareness to the Carrier Strike Group (CSG) in support of force protection, primarily in the area of Anti-Submarine Warfare (ASW). Through the integration of off-board sensors and signal, data and display processors, the AN/SQQ-34 is utilized in detecting, classifying, and localizing threats. An integrated element of the Carrier Combat System, the AN/SQQ-34 supports the tactical deployment of embarked ASW and Surface Warfare (SUW) assets. The program provides technical refreshes to legacy AN/SQQ-34 systems on all Carriers and shore sites in support of Fleet introduction and shipboard integration of the MH-60R Multi-Mission Helicopter. Upgrades to legacy systems will enable exchange of sensor, tactical and imagery data with the MH-60R initially and eventually with P-8 and Triton Unmanned Aircraft Systems (UAS) aircraft. It completes the Kill Chain by linking sensor platform to sensor controllers and the ASW/ SUW commanders. In order to support multiple MH-60R Multi-Mission Helicopters, the Common Data Link (CDL) will also be upgraded. CDL is the Navy Aircraft Carrier ultra wide-band, digital, secure data link, comprised of radio equipment that provides configuration-controlled and standardized wide-band, digital, and secure communication paths between multiple reconnaissance sensors and their users. Initially, a single User Interface Group (UIG) upgrade to CDL will be fielded in concert with CV-TSC/MH-60R deployments, providing a single MH-60R/aircraft link. SONAR DOME RUBBER WINDOWS (SDRW) (Cost Code VM401): AN/SQS-53 Sonar Dome Rubber Windows (SDRW) are installed on CG47 and DDG51 class ships. This program provides emergency replacement, wire-reinforced, pressurized rubber acoustic windows and attachment hardware, which experience failure due to corrosion, fatigue, and impact damage. The SDRW significantly improves the surface ship sonar performance by reducing flow-induced self-noise and by providing increased source level receiving and sensitivity resulting from reduced attenuation. This program provides production engineering in support of technical evaluations, failure analysis, implementation of the in-water one-side backscatter X-ray program, Government Furnished Equipment (GFE) refurbishments, and field service engineering; and complete engineering design work and material tests. This program also provides drawings, configuration management information, new design and fabrication technology, incorporation of lessons learned and required testing, and construct sub-element to confirm single-stage cure.												

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars		P-1 Line Item Number / Title: 2176 / Undersea Warfare Support Equipment
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0603512N, 0604518N
Line Item MDAP/MAIS Code: N/A		
UNDERSEA WARFARE DECISION SUPPORT SYSTEM (USW-DSS) (Cost Code VM601): USW-DSS is the Navy Program of Record (PoR) Anti-Submarine Warfare (ASW) Command & Control (C2) Net-Centric system supporting warfighters. USW-DSS is a C2 capability identified in the ASW Initial Capabilities Document (ICD), for the Sea Combat Commander (SCC) and Theater USW Commander (TUSWC). USW-DSS enables effective planning and execution of undersea warfare (USW) operations, optimizes placement of sensors for exploitation of the environment, manages available resources, balances operations versus risk, and provides a clear vulnerability assessment of the operational environment. Tactical data such as tracks, environmental, and sensor processing data is ingested into USW-DSS through platform specific interfaces such as the AN/SQQ-89A(V)15 sonar system, the Global Command and Control System - Maritime (GCCS-M), and CV-TSC. USW-DSS processes this and other tactical data and supports intelligent dissemination of the data to unit level and theater level platforms in support of an enhanced USW tactical picture. USW-DSS provides USW Commanders with an expanded, net-centric USW collaborative capability across Carrier Strike Group (CSG) platforms (CVNs, CGs, DDGs) as well as supporting shore nodes to include Commander Task Force (CTF), Naval Oceanographic Processing Facility (NOPF), and Tactical Operations Center (TOC), Mobile Tactical Operations Centers (M-TOC). Future USW-DSS capability is phased to deliver timely and cost-effective software improvements to the warfighter via the Fleet Capability Release (FCR) process. This program procures and installs USW-DSS on CSG platforms and supporting shore nodes via permanent ship alterations (SHIPALTs). In FY 2009 USW-DSS transitioned to a software application hosted on the Integrated Shipboard Network System (ISNS) and in FY 2014 started installing as part of the Consolidated Afloat Network and Enterprise Services (CANES). Workstation procurements are required to support the ISNS and CANES configured ships as well as shore nodes. USW-DSS capability is phased to effectively deliver software improvements to the warfighter. The current software version, Build 2 Release 3 (B2R3), will continue to field until the follow-on Build 3 (B3) is fielded in FY 2019. In FY 2021, non-recurring engineering effort will begin to field Theater Anti-Submarine Warfare (ASW) upgrades to USW-DSS systems with the integrated Common Operational Picture (COP), to shore nodes operating in the multi-level security environment. [P40A / VM301 - AIRCRAFT CARRIER TACTICAL SUPPORT CENTER (CV-TSC)]: VM301 - AIRCRAFT CARRIER TACTICAL SUPPORT CENTER (CV-TSC) [P40A / CV-TSC Technology Insert/Refresh & ECP Implementation]: VM301 - CV-TSC Technology Insert/Refresh & ECP Implementation: Consists of Engineering Change Proposals (ECPs) and hardware/software changes/upgrades to previously fielded and in-production AN/SQQ-34 systems. Funding used to implement ECPs to correct deficiencies identified through Fleet use; upgrade unreliable components; replace obsolete components; and address Information Assurance (IA) issues. [P40A / VM401 - SURFACE SONAR WINDOWS AND DOMES]: VM401 - SURFACE SONAR WINDOWS AND DOMES [P40A / Surface Sonar Windows and Domes]: VM401 - Surface Sonar Windows and Domes: Procure SDRWs, shipping fixtures, and fairing angles for emergency replacement on CG 47 and DDG 51 class hulls. [P40A / Production Support]: VM401 - SDRW Production Support: Funding is provided for production engineering in support of technical evaluations, failure analysis, implementation of the in-water one-side backscatter X-ray program, Government Furnished Equipment (GFE) refurbishments, and field service engineering; and complete engineering design work and material tests. This program also provides drawings, configuration management information, new design and fabrication technology, incorporation of lessons learned and required testing, and construct sub-element to confirm single-stage cure. [P40A / VM601 - UNDERSEA WARFARE DECISION SUPPORT SYSTEM (USW-DSS)]: VM601 - UNDERSEA WARFARE DECISION SUPPORT SYSTEM (USW-DSS) [P40A / Shore Sites and Tactical Trainers]: VM601 - USW-DSS/Shore Sites and Tactical Trainers: Consists of USW-DSS post-OPEVAL Build 2 Release 3 shore/lab assets and Tactical Training Equipment systems, which are full hardware/software suites. USW-DSS Build 3 will be loaded on all training and shore site nodes beginning in FY 2019. [P40A / USW-DSS Tech Refresh]: VM601 - USW-DSS Tech Refresh: Funding is for hardware/software technology upgrades to previously fielded USW-DSS afloat and shore sites, including Theater commands, support nodes, and Tactical Training Equipment (TTE). Through USW-DSS Tech Refresh targeted architectural improvements, Build 3 Fleet Change Request-1 (FCR-1) and follow-on FCRs will facilitate the migration of key components of USW-DSS onto existing installed systems in Fleet use. Tech Refreshes improve software scalability while keeping future hardware costs in check. USW-DSS software is currently hosted on the Consolidated Afloat Networks and Enterprise Services (CANES) and implements a Service-Oriented Architecture (SOA). USW-DSS Tech Refresh will install an integrated, near-real time, net-centric ASW Common Tactical Picture (CTP) / Common Operational Picture (COP) on an electronic Master Tactical Plot (eMTP) for the Fleet and critical shore command sites.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars		P-1 Line Item Number / Title: 2176 / Undersea Warfare Support Equipment
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0603512N, 0604518N
Line Item MDAP/MAIS Code: N/A [P40A / Engineering Changes (ECs)]: VM601 - USW-DSS/Engineering Changes: Consists of Engineering Change Proposals (ECPs) and hardware/software changes/upgrades. Funding will be used to support Reliability, Maintainability, and Availability (RM&A) modifications, correct deficiencies identified through Fleet use, and upgrade of unreliable components. [P40A / System Technical Support]: VM601 - USW-DSS/System Technical Support: Funding is for the USW-DSS program Software Support Activity efforts in performing the following functions: generation/assessment of Software Problem Reports (SPRs)/Software Trouble Reports (STRs); responding to Fleet software change requests; Configuration Management (CM); software Quality Assurance (QA); software installation automation; and software recovery support. [P40A / Production Support]: VM601 - USW-DSS/Production Support: Consists of on-site engineering support; CANES Integrated Product Team (IPT) Support; Information Assurance (IA) certification support; production quality assurance; system sustainability support; Integrated Logistics Support (ILS) product updates/support; status reporting and technical briefings; program office support; and all other production support efforts directly related to delivery of USW-DSS to both ISNS/CANES and ultimately the Fleet. [P40A / CANES S/W Shipsets]: VM601 - CANES S/W Shipsets: Consists of initial loads of the post-OPEVAL USW-DSS Build 2 Release 3 software suite on new CANES ships, which includes changes dictated by the FY 2013 OPEVAL of USW-DSS Build 2 Release 3. Schedule is dependent on/coordinated with CANES fielding. Prior Years reflect ISNS software shipsets. In FY 2018, Build 3 replaced Build 2 Release 3. [P40A / Theater ASW Build Out]: VM601 - Theater ASW Build Out: Non-Recurring Engineering (NRE) effort required to incorporate/field Theater Anti-Submarine Warfare (ASW) upgrades to USW-DSS systems, with the integrated Common Operational Picture (COP), to shore nodes operating in the multi-level security environment. Upgraded systems will include laboratory, tactical, and training shore nodes.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy							Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars					P-1 Line Item Number / Title: 2176 / Undersea Warfare Support Equipment					
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: 0603512N, 0604518N				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Undersea Warfare Support Equipment	P-5a			- / 87.738	- / 13.653	- / 10.134	- / 8.967	- / -	- / 8.967
P-40	Total Gross/Weapon System Cost				- / 87.738	- / 13.653	- / 10.134	- / 8.967	- / 0.000	- / 8.967
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown. Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										

Justification:
 FY 2019 TO FY 2020 INCREASE/DECREASE STATEMENT:
 - FY 2019 (\$10.134M) to FY 2020 (\$8.967M) decrease (\$-1.167M) is driven by the lower cost of procuring Cost Code VM601 USW-DSS Tech Refresh systems targeted for shipboard platforms in FY 2020 vs. the higher cost of procuring USW-DSS Tech Refresh systems targeted for shore sites/tactical trainers in FY 2019. Shipboard platform systems are roughly half the configuration size of a shore site/tactical trainer.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2								P-1 Line Item Number / Title: 2176 / Undersea Warfare Support Equipment							Aggregated Items Title: Undersea Warfare Support Equipment					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
1) VM301 - AIRCRAFT CARRIER TACTICAL SUPPORT CENTER (CV-TSC)																				
1.1) CV-TSC Technology Insert/Refresh & ECP Implementation ⁽¹⁾	A		-	-	10.831	-	-	0.338	-	-	0.334	-	-	0.343	-	-	-	-	-	0.343
Subtotal: 1) VM301 - AIRCRAFT CARRIER TACTICAL SUPPORT CENTER (CV-TSC)			-	-	10.831	-	-	0.338	-	-	0.334	-	-	0.343	-	-	-	-	-	0.343
2) VM401 - SURFACE SONAR WINDOWS AND DOMES																				
2.1) Surface Sonar Windows and Domes ^{(2)(†)}	A		2,820K	12	33.834	2,241K	1	2.241	2,264K	1	2.264	2,309K	1	2.309	-	-	-	2,309K	1	2.309
2.2) Production Support ⁽³⁾			-	-	11.333	-	-	0.290	-	-	0.231	-	-	0.298	-	-	-	-	-	0.298
Subtotal: 2) VM401 - SURFACE SONAR WINDOWS AND DOMES			-	-	45.167	-	-	2.531	-	-	2.495	-	-	2.607	-	-	-	-	-	2.607
3) VM601 - UNDERSEA WARFARE DECISION SUPPORT SYSTEM (USW-DSS)																				
3.1) Shore Sites and Tactical Trainers ^{(4)(†)}	A		2,268K	2	4.535	450,000.00	4	1.800	460,000.00	1	0.460	-	-	-	-	-	-	-	-	-
3.2) USW-DSS Tech Refresh ^{(5)(†)}	A		-	-	-	311,000.00	12	3.732	315,000.00	5	1.575	126,000.00	15	1.890	-	-	-	126,000.00	15	1.890
3.3) Engineering Changes (ECs) ⁽⁶⁾			-	-	5.866	-	-	1.110	-	-	1.076	-	-	1.098	-	-	-	-	-	1.098
3.4) System Technical Support ⁽⁷⁾			-	-	6.973	-	-	2.204	-	-	2.197	-	-	1.362	-	-	-	-	-	1.362
3.5) Production Support ⁽⁸⁾			-	-	10.564	-	-	0.858	-	-	0.814	-	-	0.830	-	-	-	-	-	0.830
3.6) CANES S/W Shipsets ^{(9)(†)}	A		86,409.09	44	3.802	90,000.00	12	1.080	91,000.00	13	1.183	93,000.00	9	0.837	-	-	-	93,000.00	9	0.837
Subtotal: 3) VM601 - UNDERSEA WARFARE DECISION SUPPORT SYSTEM (USW-DSS)			-	-	31.740	-	-	10.784	-	-	7.305	-	-	6.017	-	-	-	-	-	6.017
Total			-	-	87.738	-	-	13.653	-	-	10.134	-	-	8.967	-	-	-	-	-	8.967
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
^(†) indicates the presence of a P-5a																				
Footnotes:																				
⁽¹⁾ (2.1) VM301 - CV-TSC Technology Insert/Refresh & ECP Implementation: Consists of Engineering Change Proposals (ECPs) and hardware/software changes/upgrades to previously fielded and in-production AN/SQQ-34 systems. Funding used to implement ECPs to correct deficiencies identified through Fleet use; upgrade unreliable components; replace obsolete components; and address Information Assurance (IA) issues.																				
⁽²⁾ (3.1) VM401 - Surface Sonar Windows and Domes: Procure SDRWs, shipping fixtures, and fairing angles for emergency replacement on CG 47 and DDG 51 class hulls.																				

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2	P-1 Line Item Number / Title: 2176 / Undersea Warfare Support Equipment	Aggregated Items Title: Undersea Warfare Support Equipment
⁽³⁾ (3.2) VM401 - SDRW Production Support: Funding is provided for production engineering in support of technical evaluations, failure analysis, implementation of the in-water one-side backscatter X-ray program, Government Furnished Equipment (GFE) refurbishments, and field service engineering; and complete engineering design work and material tests. This program also provides drawings, configuration management information, new design and fabrication technology, incorporation of lessons learned and required testing, and construct sub-element to confirm single-stage cure. ⁽⁴⁾ (4.4) VM601 - USW-DSS/Shore Sites and Tactical Trainers: Consists of USW-DSS post-OPEVAL Build 2 Release 3 shore/lab assets and Tactical Training Equipment systems, which are full hardware/software suites. USW-DSS Build 3 will be loaded on all training and shore site nodes beginning in FY 2019. ⁽⁵⁾ (4.5) VM601 - USW-DSS Tech Refresh: Funding is for hardware/software technology upgrades to previously fielded USW-DSS afloat and shore sites, including Theater commands, support nodes, and Tactical Training Equipment (TTE). Through USW-DSS Tech Refresh targeted architectural improvements, Build 3 Fleet Change Request-1 (FCR-1) and follow-on FCRs will facilitate the migration of key components of USW-DSS onto existing installed systems in Fleet use. Tech Refreshes improve software scalability while keeping future hardware costs in check. USW-DSS software is currently hosted on the Consolidated Afloat Networks and Enterprise Services (CANES) and implements a Service-Oriented Architecture (SOA). USW-DSS Tech Refresh will install an integrated, near-real time, net-centric ASW Common Tactical Picture (CTP) / Common Operational Picture (COP) on an electronic Master Tactical Plot (eMTP) for the Fleet and critical shore command sites. ⁽⁶⁾ (4.6) VM601 - USW-DSS/Engineering Changes: Consists of Engineering Change Proposals (ECPs) and hardware/software changes/upgrades. Funding will be used to support Reliability, Maintainability, and Availability (RM&A) modifications, correct deficiencies identified through Fleet use, and upgrade of unreliable components. ⁽⁷⁾ (4.7) VM601 - USW-DSS/System Technical Support: Funding is for the USW-DSS program Software Support Activity efforts in performing the following functions: generation/assessment of Software Problem Reports (SPRs)/Software Trouble Reports (STRs); responding to Fleet software change requests; Configuration Management (CM); software Quality Assurance (QA); software installation automation; and software recovery support. ⁽⁸⁾ (4.8) VM601 - USW-DSS/Production Support: Consists of on-site engineering support; CANES Integrated Product Team (IPT) Support; Information Assurance (IA) certification support; production quality assurance; system sustainability support; Integrated Logistics Support (ILS) product updates/support; status reporting and technical briefings; program office support; and all other production support efforts directly related to delivery of USW-DSS to both ISNS/CANES and ultimately the Fleet. ⁽⁹⁾ (4.9) VM601 - CANES S/W Shipsets: Consists of initial loads of the post-OPEVAL USW-DSS Build 2 Release 3 software suite on new CANES ships, which includes changes dictated by the FY 2013 OPEVAL of USW-DSS Build 2 Release 3. Schedule is dependent on/coordinated with CANES fielding. Prior Years reflect ISNS software shipsets. In FY 2018, Build 3 replaced Build 2 Release 3.		

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2				P-1 Line Item Number / Title: 2176 / Undersea Warfare Support Equipment					Aggregated Items: Undersea Warfare Support Equipment			
Item Number / Title [DODIC]	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
2) VM401 - SURFACE SONAR WINDOWS AND DOMES												
2.1) Surface Sonar Windows and Domes ⁽²⁾		2018	UTC Aerospace Systems (formerly Goodrich) / Jacksonville, FL	SS / FP	NAVSEA	Aug 2018	Aug 2020	1	2,241K	Y		
2.1) Surface Sonar Windows and Domes ⁽²⁾		2019	UTC Aerospace Systems (formerly Goodrich) / Jacksonville, FL	SS / FP	NAVSEA	Mar 2019	Mar 2021	1	2,264K	Y		
2.1) Surface Sonar Windows and Domes ⁽²⁾		2020	UTC Aerospace Systems (formerly Goodrich) / Jacksonville, FL	SS / FFP	NAVSEA	Mar 2020	Mar 2022	1	2,309K	Y		
3) VM601 - UNDERSEA WARFARE DECISION SUPPORT SYSTEM (USW-DSS)												
3.1) Shore Sites and Tactical Trainers ⁽⁴⁾		2018	Progeny Systems, Corporation / Manassas, VA	C / CPFF	NAVSEA	Dec 2017	May 2018	4	450,000.00	Y		
3.1) Shore Sites and Tactical Trainers ⁽⁴⁾		2019	Progeny Systems, Corporation / Manassas, VA	C / CPFF	NAVSEA	Nov 2018	Apr 2019	1	460,000.00	Y		
3.2) USW-DSS Tech Refresh ⁽⁵⁾		2018	Progeny Systems, Corporation / Manassas, VA	C / CPFF	NAVSEA	Dec 2017	May 2018	12	311,000.00	Y		
3.2) USW-DSS Tech Refresh ⁽⁵⁾		2019	Progeny Systems, Corporation / Manassas, VA	C / CPFF	NAVSEA	Nov 2018	Apr 2019	5	315,000.00	Y		
3.2) USW-DSS Tech Refresh ⁽⁵⁾		2020	Progeny Systems, Corporation / Manassas, VA	C / CPFF	NAVSEA	Nov 2019	Apr 2020	15	126,000.00	Y		
3.6) CANES S/W Shipsets ⁽⁹⁾		2018	NUWC/Keyport / Keyport, WA	WR	NAVSEA	Nov 2017	Feb 2018	12	90,000.00	Y		
3.6) CANES S/W Shipsets ⁽⁹⁾		2019	NUWC/Keyport / Keyport, WA	WR	NAVSEA	Nov 2018	Feb 2019	13	91,000.00	Y		
3.6) CANES S/W Shipsets ⁽⁹⁾		2020	NUWC/Keyport / Keyport, WA	WR	NAVSEA	Nov 2019	Feb 2020	9	93,000.00	Y		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 3: ASW Electronic Equipment	P-1 Line Item Number / Title: 2210 / Submarine Acoustic Warfare System

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	120.578	21.449	21.615	23.545	0.000	23.545	23.860	24.677	24.969	26.632	Continuing	Continuing
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	120.578	21.449	21.615	23.545	0.000	23.545	23.860	24.677	24.969	26.632	Continuing	Continuing
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	120.578	21.449	21.615	23.545	0.000	23.545	23.860	24.677	24.969	26.632	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares <i>(\$ in Millions)</i>	-	2.023	0.661	0.229	-	0.229	0.250	0.561	0.572	0.607	Continuing	Continuing
Flyaway Unit Cost <i>(\$ in Dollars)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Submarine Acoustic Warfare System (SAWS) program provides submarines with expendable defensive countermeasures and the systems necessary to externally launch them against torpedo and acoustic sensor threats. This program provides ongoing production of countermeasure devices needed to sustain fleet inventories, improvements to enhance the readiness and effectiveness of countermeasure devices and associated External Countermeasure Launcher (ECL) systems on all U.S. submarines. The expendable devices, Acoustic Device Countermeasures (ADC) are produced in two primary versions 3" ADC's are launched through the Internal Countermeasure Launcher (ICL) and 6" devices are launched through ECL Systems. An updated increased Acoustic Augmentation Support Program Ship Alteration (AASP SHIPALT) installation cost estimate has slowed installs through FYDP and funds are shifted to accommodate increases in Countermeasure Set, Acoustic (CSA) engineering technology refresh and insertion costs, driven by ADC MK5 Next Generation Countermeasure (NGCM) testing, and introduction in FY22-24.

WM018 - The Acoustic Augmentation Support Program (AASP) provides acoustic augmenting systems in appropriate configurations for all submarine classes (except SEAWOLF) installed as temporary equipment Temporary Alteration(TEMPALT). A permanently installed Ship Alteration (SHIPALT) configuration for VIRGINIA Class Block I/II/III design was completed in FY16 and installations started in FY17. A SHIPALT for VIRGINIA Class Block IV was developed in FY17 and installations will start in FY26, gradually phasing out the TEMPALTs on VIRGINIA Class. Reliability and refresh upgrades provide current in-service AASP systems with new components and software updates to maintain reliability.

WM019 - The Countermeasure Set, Acoustic (CSA) program procures and supports the inboard electronic system necessary for preparing and launching 6" (ADCs) from all 688i and newer U.S. submarines. The CSA program provides obsolescence support for legacy systems and engineering changes to accommodate advanced capabilities and planned new devices, such as the ADC MK5. Six efforts are supported: (1) the Technology Refresh effort is designing, building, testing and certifying replacement components for obsolete CSA MK2 systems (MOD 0/3/4) on 688i SSN and OHIO SSBN submarines, with the refresh occurring in FY17-FY20. (2) The CSA SWFTS Integration effort is integrating the CSA system with the Submarine Warfare Federated Tactical System (SWFTS) System of Systems (SoS) to facilitate the introduction of the ADC MK5 and the Submarine Torpedo Defense (SubTDS) Tactical Decision Aid (TacDA). A phased approach was taken to allow progressive implementation of initial capabilities. Required funding is expected to level off after ECL-launched ADC MK5 device fielding and will address recurring upgrades within the Submarine Warfare Federated Tactical System Technology Insertion (TI)/Advanced Processor Build (APB) cycles. (3) The CSA MK4 Technology Insertion effort replaces the CSA MK2 MOD2 with a SubTDS-capable, SWFTS-integrated CSA MK4 system on VIRGINIA Class Block I and II submarines (10 hulls). Non-recurring engineering, production testing, EQT and SHIPALT/Logistics documentation will complete in early FY19 with installs starting in late FY19. (4) The CSA SEAWOLF SWFTS Integration effort replaces the CSA MK2 MOD5 system on SEAWOLF Class submarines (3 hulls) with a SubTDS-capable, SWFTS-integrated CSA system. The non-recurring engineering effort will begin in FY21 with fielding beginning in FY23 and the SWFTS TI-22 baseline. (5) The CSA SWFTS Virtualization effort supports the development and integration of the CSA system with the AN/BYG-1 Combat Control System on VIRGINIA and COLUMBIA new construction hulls. (6) The sixth effort is the ongoing support of engineering issues across all CSA systems as they arise.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 3: ASW Electronic Equipment		P-1 Line Item Number / Title: 2210 / Submarine Acoustic Warfare System
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
[P40A / WM014 6 INCH]: WM014 6 INCH - The 6" Countermeasures program procures, reworks, and refreshes ADC MK3 (torpedo countermeasure) devices, ADC MK4 (SONAR countermeasure) devices, and associated Launch Tubes in order to maintain submarine fleet countermeasure device inventory levels in accordance with the Naval Munition Requirements Process (NMRP). The 6" Countermeasure program tracks and implements device improvements through configuration control and an Engineering Change Proposal (ECP) process. A Service Life Extension Program (SLEP) was initiated in FY14 for ADC MK3 and MK4 devices to extend the usability of 6" devices. A new competitive production contract was awarded in late FY18 using risk management funds set aside for risks that didn't materialize, FY19 Non-Recurring Engineering (NRE) funds were still used to do the majority of the initial engineering effort. [P40A / WM015 3 INCH]: WM015 3 INCH - The 3" Countermeasures program procures ADC MK2 MODs 3, 5, and 7 countermeasure devices in order to maintain submarine fleet countermeasure device inventory levels in accordance with the NMRP. The 3" Countermeasures program tracks and implements device improvements through configuration control and the ECP process. [P40A / NEXT GENERATION COUNTERMEASURE (NGCM) ADC MK5]: The Submarine Torpedo Defense System (SubTDS) Program to support a FY24 IOC will transition the ADC MK5 into production. [P40A / WM022 GAS GENERATOR MK77]: WM022 Gas Generator MK 77 - The MK77 Gas Generator (GG) program procures the energetic components required to launch the ADC MK3 and ADC MK4 countermeasure devices from the External Countermeasure Launchers (ECLs). The GG program also reworks existing devices to extend their service life, and tracks and implements device improvements through configuration control and ECP process. A SLEP for MK77 MOD 0 devices was completed in FY16, resulted in extending the service life from two (2) to four (4) years for all devices except those installed aboard SSGN class submarines. [P40A / WM830 PRODUCTION ENGINEERING]: WM830 - Production Engineering - The Production Engineering line provides production engineering services for SAWS Technical Design Agent (TDA) and In-Service Engineering Agent (ISEA) across all SAWS systems, including AASP. Also provides specification preparation and validation, government prepared production acceptance procedures, production planning, integrated logistics support, planning coordination of government furnished information and government furnished equipment, and contract administration including contract deliverable monitoring and prime contractor monitoring of cost/ schedule performance. [P40A / PRODUCTION ENGINEERING]: Production Engineering adjustment commensurate with anticipated work. To support the ordnance assessment that is planned to extend the service life. [P40A / WM900 CONSULTING SERVICES]: WM900 Consulting Services - The Consulting Services line procures contractor support services for all SAWS programs including program, financial, acquisition, contract administration and engineering management support.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019	
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 3: ASW Electronic Equipment						P-1 Line Item Number / Title: 2210 / Submarine Acoustic Warfare System			
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A			Other Related Program Elements: N/A		
Line Item MDAP/MAIS Code: N/A									

Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Submarine Acoustic Warfare System	P-5a, P-21			- / 74.827	- / 8.071	- / 10.373	- / 13.638	- / -	- / 13.638
P-3a	1 / AASP WM018 (SHIPALT)				- / 9.512	- / 3.022	- / 4.061	- / 2.504	- / 0.000	- / 2.504
P-3a	2 / CSA WM019 (SHIPALT, OCMOD, EC)				- / 36.239	- / 10.356	- / 7.181	- / 7.403	- / 0.000	- / 7.403
P-40	Total Gross/Weapon System Cost				- / 120.578	- / 21.449	- / 21.615	- / 23.545	- / 0.000	- / 23.545

Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Submarine Acoustic Warfare System	P-5a, P-21			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / AASP WM018 (SHIPALT)				- / 2.553	- / 5.757	- / 4.901	- / 2.880	- / 28.348	- / 63.538
P-3a	2 / CSA WM019 (SHIPALT, OCMOD, EC)				- / 8.327	- / 6.319	- / 8.121	- / 9.242	Continuing	Continuing
P-40	Total Gross/Weapon System Cost				- / 23.860	- / 24.677	- / 24.969	- / 26.632	Continuing	Continuing

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
 FY 2020 SAWS increase procures more ADC MK2 to meet Fleet requirements. It also includes procurement of ADC MK3 and ADC MK4 on the new production contract (as the effort switched from NRE to production).

 FY 2020 CSA increase is due to increased funding required to support virtualization and support meeting the SWFTS TI cycle.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3							P-1 Line Item Number / Title: 2210 / Submarine Acoustic Warfare System								Aggregated Items Title: Submarine Acoustic Warfare System					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
1) WM014 6 INCH																				
1.1) 6" Countermeasure Launch Tube ^{(1)(†)}	A		8,417.91	1,005	8.460	5,770.00	125	0.721	-	-	-	-	-	-	-	-	-	-	-	-
1.2) ADC MK3 (TORPEDO) NEW ^{(2)(†)}	A		29,871.50	607	18.132	44,047.62	42	1.850	-	-	-	50,937.00	128	6.520	-	-	-	50,937.00	128	6.520
1.3) ADC MK3 NON RECURRING	A		-	-	-	-	-	-	-	-	4.700	-	-	-	-	-	-	-	-	-
1.4) MK 3 ADC SLEP ^(†)	A		10,443.61	266	2.778	5,720.00	20	0.114	-	-	-	-	-	-	-	-	-	-	-	-
1.5) ADC MK4 (SONAR) NEW ^{(3)(†)}	A		-	-	-	-	-	-	-	-	-	66,000.00	30	1.980	-	-	-	66,000.00	30	1.980
Subtotal: 1) WM014 6 INCH			-	-	29.370	-	-	2.685	-	-	4.700	-	-	8.500	-	-	-	-	-	8.500
2) WM015 3 INCH																				
2.1) ADC MK2 ^{(4)(†)}	A		5,539.88	1,630	9.030	7,140.00	100	0.714	6,366.32	475	3.024	6,597.28	456	3.008	-	-	-	6,597.28	456	3.008
Subtotal: 2) WM015 3 INCH			-	-	9.030	-	-	0.714	-	-	3.024	-	-	3.008	-	-	-	-	-	3.008
3) WM022 GAS GENERATOR MK77																				
3.1) GAS GENERATOR MK77 MOD 1 NEW PRODUCTION ^{(5)(†)}	A		11,643.50	1,554	18.094	-	-	-	22,816.00	50	1.141	19,700.00	50	0.985	-	-	-	19,700.00	50	0.985
3.2) Gas Generator MK77 Mod 0 ^{(6)(†)}	A		9,400.98	611	5.744	26,725.00	40	1.069	-	-	-	12,941.00	40	0.518	-	-	-	12,941.00	40	0.518
Subtotal: 3) WM022 GAS GENERATOR MK77			-	-	23.838	-	-	1.069	-	-	1.141	-	-	1.503	-	-	-	-	-	1.503
4) WM830 PRODUCTION ENGINEERING																				
4.1) PRODUCTION ENGINEERING	A		-	-	9.922	-	-	3.134	-	-	0.955	-	-	0.100	-	-	-	-	-	0.100
Subtotal: 4) WM830 PRODUCTION ENGINEERING			-	-	9.922	-	-	3.134	-	-	0.955	-	-	0.100	-	-	-	-	-	0.100
5) WM900 CONSULTING SERVICES																				
5.1) CONSULTING SERVICES	A		-	-	2.667	-	-	0.469	-	-	0.553	-	-	0.527	-	-	-	-	-	0.527
Subtotal: 5) WM900 CONSULTING SERVICES			-	-	2.667	-	-	0.469	-	-	0.553	-	-	0.527	-	-	-	-	-	0.527
Total			-	-	74.827	-	-	8.071	-	-	10.373	-	-	13.638	-	-	-	-	-	13.638
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
^(†) indicates the presence of a P-5a																				
Footnotes:																				

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	P-1 Line Item Number / Title: 2210 / Submarine Acoustic Warfare System	Aggregated Items Title: Submarine Acoustic Warfare System
⁽¹⁾ Launch tubes and shipping containers are included in the unit cost for the ADC MK3 (Torpedo) and ADC MK4 (Sonar) new production buy in FY20. ⁽²⁾ In FY20 the ADC MK3 (Torpedo) Unit cost includes launch tubes and shipping containers. ⁽³⁾ ADC MK4 (Sonar) Unit cost is based on the pricing from the FY15 contract step ladder quantities (option was not exercised but it was the contract price) plus launch tubes and shipping containers escalated to FY20. ⁽⁴⁾ Based on projected unit costs when combined with Surface Ship ADCs additional units are available for procurement. ⁽⁵⁾ Cost of MK77 reflects only unit cost of MK77 MOD1 in new production. MK77 MOD1 GGs are procured as wholly new devices; Unit cost includes prorated share of management and engineering oversight. MK77 MOD1 new production is broken out for clarification of units and unit cost where MK77 MOD0 rework is planned. The increase in APUC by 10% is the historical amount that has been added to the unit price to cover the engineering efforts of the ISEA and TDA. This has normally been spread out across all devices. Reduction in FY18 and FY19 due to update on inventory. ⁽⁶⁾ MK77 GGs Mod0 are broken out for clarification of units and unit cost because they are reworked units, not wholly new units. Reduction in FY18 and FY19 due to MK77 GG Mod 0 quantities update on inventory. Procurements occurring every other year starting FY18. Unit cost in FY18 increased due to MK77 Mod 0 audit to certify rework, update inventory, MK77 Mod 0 SLEP.		

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3			P-1 Line Item Number / Title: 2210 / Submarine Acoustic Warfare System						Aggregated Items: Submarine Acoustic Warfare System			
Item Number / Title [DODIC]	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1) WM014 6 INCH												
1.1) 6" Countermeasure Launch Tube ^{(1)(†)}		2018	FRC -SW / San Diego, CA	WR	NAVSEA	Apr 2018	Apr 2018	125	5,770.00	Y		
1.2) ADC MK3 (TORPEDO) NEW ^{(2)(†)}		2018	ULTRA / BRAINTREE, MA	C / FFP	NAVSEA	Jun 2018	Jun 2019	42	44,047.62	Y		
1.2) ADC MK3 (TORPEDO) NEW ^{(2)(†)}		2020	ULTRA / BRAINTREE, MA	C / FFP	NAVSEA	Jun 2020	Jun 2021	128	50,937.00	Y		
1.4) MK 3 ADC SLEP ^(†)		2018	ULTRA / BRAINTREE, MA	C / FFP	NAVSEA	Jun 2018	Jun 2018	20	5,720.00	N	Jun 2019	
1.5) ADC MK4 (SONAR) NEW ^{(3)(†)}		2020	ULTRA / BRAINTREE, MA	C / FFP	NUWC/KEYPORT	Jun 2020	May 2021	30	66,000.00	Y		
2) WM015 3 INCH												
2.1) ADC MK2 ^{(4)(†)}		2018	ULTRA / BRAINTREE, MA	C / FFP	NUWC/KEYPORT	May 2018	Aug 2018	100	7,140.00	N	May 2019	
2.1) ADC MK2 ^{(4)(†)}		2019	ULTRA / BRAINTREE, MA	C / FFP	NUWC/KEYPORT	May 2019	Aug 2019	475	6,366.32	N	Aug 2020	
2.1) ADC MK2 ^{(4)(†)}		2020	ULTRA / BRAINTREE, MA	C / FFP	NUWC/KEYPORT	May 2020	May 2021	456	6,597.28	N	May 2022	
3) WM022 GAS GENERATOR MK77												
3.1) GAS GENERATOR MK77 MOD 1 NEW PRODUCTION ^{(5)(†)}		2019	NSWC/INDIAN HEAD / NSWC INDIAN HEAD	WR	NSWC INDIAN HEAD	Oct 2018	Apr 2019	50	22,816.00	Y		
3.1) GAS GENERATOR MK77 MOD 1 NEW PRODUCTION ^{(5)(†)}		2020	NSWC/INDIAN HEAD / NSWC INDIAN HEAD	WR	NSWC INDIAN HEAD	Oct 2019	Apr 2020	50	19,700.00	Y		
3.2) Gas Generator MK77 Mod 0 ^{(6)(†)}		2018	NSWC/IH / INDIAN HEAD, MD	WR	NSWC INDIAN HEAD	Mar 2018	Sep 2018	40	26,725.00	Y		
3.2) Gas Generator MK77 Mod 0 ⁽⁶⁾		2020	NSWC/IH / INDIAN HEAD, MD	WR	NSWC INDIAN HEAD	Mar 2020	Sep 2020	40	12,941.00	Y		
^(†) indicates the presence of a P-21												

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Exhibit P-21, Production Schedule: PB 2020 Navy																								Date: March 2019											
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3												P-1 Line Item Number / Title: 2210 / Submarine Acoustic Warfare System												Aggregated Items: Submarine Acoustic Warfare System											
Items (Units in Each)							Fiscal Year 2018												Fiscal Year 2019													BALANCE			
OCO#	MFR#	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT				Calendar Year 2018												Calendar Year 2019													
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP					
1) WM014 6 INCH																																			
1.1) 6" Countermeasure Launch Tube ⁽¹⁾																																			
Prior Years Deliveries: 1005																																			
1		2018	NAVY	125	0	125							A10	10	10	10	10	10	10	11	11	11	11	11							0				
1.2) ADC MK3 (TORPEDO) NEW ⁽²⁾																																			
Prior Years Deliveries: 607																																			
2		2018	NAVY	42	0	42									A -	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	30		
2		2020	NAVY	128	0	128																											128		
1.4) MK 3 ADC SLEP																																			
Prior Years Deliveries: 266																																			
3		2018	NAVY	20	0	20							A4	4	4	4	4																		0
1.5) ADC MK4 (SONAR) NEW ⁽³⁾																																			
4		2020	NAVY	30	0	30																											30		
2) WM015 3 INCH																																			
2.1) ADC MK2 ⁽⁴⁾																																			
Prior Years Deliveries: 1630																																			
5		2018	NAVY	100	0	100							A -	-	-	8	8	8	8	8	8	8	8	8	9	9	9	9			0				
5		2019	NAVY	475	0	475																			A -	-	-	41	41				393		
5		2020	NAVY	456	0	456																											456		
3) WM022 GAS GENERATOR MK77																																			
3.1) GAS GENERATOR MK77 MOD 1 NEW PRODUCTION ⁽⁵⁾																																			
Prior Years Deliveries: 1554																																			
6		2019	NAVY	50	0	50													A -	-	-	-	-	-	-	4	4	4	4	4	4			26	
6		2020	NAVY	50	0	50																											50		
3.2) Gas Generator MK77 Mod 0 ⁽⁶⁾																																			
Prior Years Deliveries: 611																																			
7		2018	NAVY	40	0	40						A -	-	-	-	-	-	4	4	4	4	3	3	3	3	3	3	3	3		0				
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP					

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Exhibit P-21, Production Schedule: PB 2020 Navy																							Date: March 2019														
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3											P-1 Line Item Number / Title: 2210 / Submarine Acoustic Warfare System												Aggregated Items: Submarine Acoustic Warfare System														
Items (Units in Each)							Fiscal Year 2020											Fiscal Year 2021													B A L A N C E						
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	Calendar Year 2020																	Calendar Year 2021													
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							
1) WM014 6 INCH																																					
1.1) 6" Countermeasure Launch Tube ⁽¹⁾																																					
Prior Years Deliveries: 1005																																					
1		2018	NAVY	125	125	0																										0					
1.2) ADC MK3 (TORPEDO) NEW ⁽²⁾																																					
Prior Years Deliveries: 607																																					
2		2018	NAVY	42	12	30	3	3	4	4	4	4	4	4																		0					
2		2020	NAVY	128	0	128									A -	-	-	-	-	-	-	-	-	-	-	-	-	-	11	11	11	11	84				
1.4) MK 3 ADC SLEP																																					
Prior Years Deliveries: 266																																					
3		2018	NAVY	20	20	0																										0					
1.5) ADC MK4 (SONAR) NEW ⁽³⁾																																					
4		2020	NAVY	30	0	30									A -	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	3	15					
2) WM015 3 INCH																																					
2.1) ADC MK2 ⁽⁴⁾																																					
Prior Years Deliveries: 1630																																					
5		2018	NAVY	100	100	0																										0					
5		2019	NAVY	475	82	393	41	41	41	41	41	38	38	38	37	37																	0				
5		2020	NAVY	456	0	456									A -	-	-	-	-	-	-	-	-	-	-	-	38	38	40	38	38	264					
3) WM022 GAS GENERATOR MK77																																					
3.1) GAS GENERATOR MK77 MOD 1 NEW PRODUCTION ⁽⁵⁾																																					
Prior Years Deliveries: 1554																																					
6		2019	NAVY	50	24	26	4	4	4	4	5	5																				0					
6		2020	NAVY	50	0	50	A -	-	-	-	-	-	4	4	4	4	4	4	4	4	4	5	5						0								
3.2) Gas Generator MK77 Mod 0 ⁽⁶⁾																																					
Prior Years Deliveries: 611																																					
7		2018	NAVY	40	40	0																										0					
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							

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LI 2210 - Submarine Acoustic Warfare System
Navy

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Exhibit P-21, Production Schedule: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3					P-1 Line Item Number / Title: 2210 / Submarine Acoustic Warfare System				Aggregated Items: Submarine Acoustic Warfare System			
MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
		MSR For 2020	1-8-5 For 2020	MAX For 2020	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	FRC -SW - San Diego, CA			TBD	0	0	0	0	0	0	0	0
2	ULTRA - BRAINTREE, MA	192	288	576	0	0	0	0	7	2	12	14
3	ULTRA - BRAINTREE, MA			TBD	0	0	0	0	0	0	0	0
4	ULTRA - BRAINTREE, MA	192	288	576	8	2	11	13	8	2	11	13
5	ULTRA - BRAINTREE, MA	840	1,440	2,880	0	1	0	1	0	1	12	13
6	NSWC/INDIAN HEAD - NSWC INDIAN HEAD	48	480	960	0	0	0	0	6	5	6	11
7	NSWC/IH - INDIAN HEAD, MD	48	480	960	0	0	0	0	0	5	6	11

"A" in the Delivery Schedule indicates the Contract Award Date.

Note: Due to space limitations, quantities in the Exhibit P-21 delivery calendar are truncated and rounded based on the maximum quantity in the calendar as follows. If the maximum quantity is less than or equal to than 9,999, all quantities are shown as each. If the maximum quantity is between 10,000 and 999,999 all quantities are shown in thousands. If the maximum quantity is between 1,000,000 and 999,999,999 all quantities are shown in millions (rounded to the nearest thousand).If the maximum quantity is equal or greater than 1,000,000,000 all quantities are shown in billions (rounded to the nearest million).

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	P-1 Line Item Number / Title: 2210 / Submarine Acoustic Warfare System	Modification Number / Title: 1 / AASP WM018

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	9.512	3.022	4.061	2.504	0.000	2.504	2.553	5.757	4.901	2.880	28.348	63.538
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	9.512	3.022	4.061	2.504	0.000	2.504	2.553	5.757	4.901	2.880	28.348	63.538
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	9.512	3.022	4.061	2.504	0.000	2.504	2.553	5.757	4.901	2.880	28.348	63.538
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Acoustic Augmentation Support Program (AASP) provides acoustic augmenting systems in appropriate configurations for all submarine classes (except SEAWOLF) installed as temporary equipment (a TEMPALT). A permanently installed Ship Alteration (SHIPALT) configuration for VIRGINIA Class Block I/II/III was developed and installations started in FY17 (delayed from FY16 due because budget insufficient for installation cost estimates). A permanent SHIPALT for VIRGINIA Class Block IV was be developed in FY17 and installations will start in FY26, gradually phasing out the TEMPALTs on VIRGINIA Class. Reliability and refresh upgrades sustain current in-service AASP systems with new components and software updates to maintain reliability.

[WM018 AASP Support] Includes production support for BLK I-IV SHIPALTS and the AASP reliability and refurbishment upgrade.

[WM018 AASP (Acoustic Augmentation Support Program)] AASP includes costs of procuring new systems and reuse of available components, including the HLF-1, for SHIPALT installation such that "unit cost" is a mix of new and used components. An additional HLF-1 transducer (not a complete full system) was procured in FY19 (\$610K).

[WM018 AASP Reliability and Refurbishment Upgrade] Reliability and refurbishment upgrade to sustain current in-service AASP systems.

[WM018 AASP (Acoustic Augmentation Support Program)] Non-recurring costs to produce AASP SHIPALT Package.

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3				P-1 Line Item Number / Title: 2210 / Submarine Acoustic Warfare System					Modification Number / Title: 1 / AASP WM018				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: AN/BQT-1			Modification Type: SHIPALT					Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: AASP WM018													
B Kits													
Recurring													
1.1.1) WM018 AASP Support - Organic ⁽⁷⁾ - / 0.439 - / 0.175 - / 0.445 - / 0.454 - / - - / 0.454 - / 0.463 - / 0.472 - / 0.482 - / 0.492 - / 3.163 - / 6.585													
1.1.2) WM018 AASP (Acoustic Augmentation Support Program) - NonOrganic ⁽⁸⁾ 2 / 1.743 2 / 1.821 1 / 1.524 1 / 0.932 - / - 1 / 0.932 1 / 0.951 3 / 2.907 1 / 0.988 1 / 1.008 8 / 8.626 20 / 20.500													
1.1.3) WM018 AASP Reliability and Refurbishment Upgrade - NonOrganic ⁽⁹⁾ 1 / 1.315 - / - - / - - / - - / - 1 / 0.114 - / - 1 / 0.121 4 / 0.493 7 / 2.043													
Subtotal: Recurring - / 3.497 - / 1.996 - / 1.969 - / 1.386 - / - - / 1.386 - / 1.414 - / 3.493 - / 1.470 - / 1.621 - / 12.282 - / 29.128													
Non-Recurring													
1.2.1) WM018 AASP (Acoustic Augmentation Support Program) - Organic - / 4.310 - / - - / - - / - - / - - / - - / - - / - - / - - / 4.310													
Subtotal: Non-Recurring - / 4.310 - / - - / - - / - - / - - / - - / - - / - - / 0.000 - / 4.310													
Subtotal: AASP WM018 3 / 7.807 2 / 1.996 1 / 1.969 1 / 1.386 - / - 1 / 1.386 1 / 1.414 4 / 3.493 1 / 1.470 2 / 1.621 12 / 12.282 27 / 33.438													
Subtotal: Procurement, All Modification Items - / 7.807 - / 1.996 - / 1.969 - / 1.386 - / - - / 1.386 - / 1.414 - / 3.493 - / 1.470 - / 1.621 - / 12.282 - / 33.438													
Installation													
Modification Item 1 of 1: AASP WM018													
- / 1.705 - / 1.026 - / 2.092 - / 1.118 - / 0.000 - / 1.118 - / 1.139 - / 2.264 - / 3.431 - / 1.259 - / 16.066 - / 30.100													
Subtotal: Installation - / 1.705 - / 1.026 - / 2.092 - / 1.118 - / - - / 1.118 - / 1.139 - / 2.264 - / 3.431 - / 1.259 - / 16.066 - / 30.100													
Total													
Total Cost (Procurement + Support + Installation) 9.512 3.022 4.061 2.504 0.000 2.504 2.553 5.757 4.901 2.880 28.348 63.538													

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3										P-1 Line Item Number / Title: 2210 / Submarine Acoustic Warfare System										Modification Number / Title: 1 / AASP WM018											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: AASP WM018																															
Manufacturer Information																															
Manufacturer Name: HydroAcoustics, Inc															Manufacturer Location: Henritta, NY																
Administrative Leadtime (in Months): 3															Production Leadtime (in Months): 10																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates		Jan 2018				Jan 2019				Jan 2020				Jan 2021				Jan 2022				Jan 2023				Jan 2024					
Delivery Dates		Nov 2018				Nov 2019				Nov 2020				Nov 2021				Nov 2022				Nov 2023				Nov 2024					
Manufacturer Name: NUWC Newport															Manufacturer Location: Newport, Rhode Island																
Administrative Leadtime (in Months): 1															Production Leadtime (in Months): 2																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates																		Oct 2021								Oct 2023					
Delivery Dates																		Jan 2022								Jan 2024					
Installation Information																															
Method of Implementation: AIT:: Installation Name: WM018 AASP (Acoustic Augmentation Support Program)																															
Installation Cost		Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total								
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)								
Prior Years		1 / 0.390		1 / 1.026		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 1.416							
FY 2018		- / -		- / -		2 / 2.092		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 2.092							
FY 2019		- / -		- / -		- / -		1 / 1.118		0 / 0.000		1 / 1.118		- / -		- / -		- / -		- / -		0 / 0.000		1 / 1.118							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		1 / 1.139		- / -		- / -		- / -		0 / 0.000		1 / 1.139							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 1.132		- / -		- / -		0 / 0.000		1 / 1.132							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		3 / 3.431		- / -		0 / 0.000		3 / 3.431							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 1.138		0 / 0.000		1 / 1.138							
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 1.222		1 / 1.222							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		8 / 10.020		8 / 10.020							
Total		1 / 0.390		1 / 1.026		2 / 2.092		1 / 1.118		0 / 0.000		1 / 1.118		1 / 1.139		1 / 1.132		3 / 3.431		1 / 1.138		9 / 11.242		20 / 22.708							
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	1	1	-	-	-	1	1	-	-	-	1	-	-	1	-	-	-	-	-	1	-	2	-	-	1	1	-	-	-	9	20
Out	1	1	-	-	-	1	1	-	-	-	1	-	-	1	-	-	-	-	-	1	-	2	-	-	1	1	-	-	-	9	20

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3										P-1 Line Item Number / Title: 2210 / Submarine Acoustic Warfare System										Modification Number / Title: 1 / AASP WM018											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: AASP WM018																															
Installation Information																															
Method of Implementation: AIT:: Installation Name: WM018 AASP Reliability and Refurbishment Upgrade																															
Installation Cost		Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total																		
		<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>																	
Prior Years		1 / 1.315	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	1 / 1.315																		
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 1.132	- / -	- / -	0 / 0.000	1 / 1.132																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2024		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.121	0 / 0.000	1 / 0.121																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 4.824	4 / 4.824																		
Total		1 / 1.315	- / -	- / -	- / -	- / -	- / -	- / -	1 / 1.132	- / -	1 / 0.121	4 / 4.824	7 / 7.392																		
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1	-	-	4	7
Out	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1	-	-	4	7
Footnotes: ⁽⁷⁾ Includes production support for SHIPALT 4678. FY19 increase in 1.1.1 is due to installations and support. These costs are for 2 FTE to manage the effort (including the IA requirements) and match with the SWFTS upgrade cycle. ⁽⁸⁾ An additional HLF-1 transducer is procured in FY19 (\$610K) which increases the unit cost per system. ⁽⁹⁾ Installations will occur one or two years after procurement due to long term availabilities scheduling. Installation quantities updated in order to accommodate the current budget with the new increased installation cost. One installation is planned in FY18 and two in FY19.																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy							Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3				P-1 Line Item Number / Title: 2210 / Submarine Acoustic Warfare System				Modification Number / Title: 2 / CSA WM019			

ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	36.239	10.356	7.181	7.403	0.000	7.403	8.327	6.319	8.121	9.242	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	36.239	10.356	7.181	7.403	0.000	7.403	8.327	6.319	8.121	9.242	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	36.239	10.356	7.181	7.403	0.000	7.403	8.327	6.319	8.121	9.242	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

WM019 - The Countermeasure Set, Acoustic (CSA) program procures and supports the inboard electronic system necessary for preparing and launching 6" Acoustic Devices, Countermeasure (ADCs) from all 688i and newer U.S. submarines. This inboard system consists of the Torpedo Defense Controller (TDC), Launch Control Panels (LCPs), and associated cabling, in a class-by-class configuration. The CSA program provides obsolescence support for legacy systems and engineering changes to accommodate modified and planned new devices, such as the ADC MK5. Six efforts are supported: (1) the "Technology Refresh" effort is designing, building, testing and certifying replacement components for CSA MK2 systems (MOD 0/3/4) on 688i SSN and OHIO SSBN submarines, with the refresh occurring in FY17-FY20. (2) The "CSA SWFTS Integration" effort is integrating the CSA system with the Submarine Warfare Federated Tactical System (SWFTS) System of Systems (SoS) to facilitate the introduction of the ADC MK5 and the Submarine Torpedo Defense (SubTDS) Tactical Decision Aid (TacDA). A phased approach was taken to allow an incremental implementation of initial capabilities. Required funding is expected to level off after ECL-launched ADC MK5 device fielding and will address recurring upgrades within the SWFTS Technology Insertion (TI)/Advanced Processor Build (APB) cycles. (3) The "CSA MK4 Technology Insertion" effort replaces the CSA MK2 MOD2 with a SubTDS-capable, SWFTS-integrated CSA MK4 system on VIRGINIA Class Block I and II submarines (10 hulls). Non-recurring engineering, production testing, EQT and SHIPALT/Logistics documentation will complete in early FY19 with installs starting in late FY19. (4) The "CSA SEAWOLF SWFTS Integration" effort replaces the CSA MK2 MOD5 system on SEAWOLF Class submarines (3 hulls) with a SubTDS-capable, SWFTS-integrated CSA system. The non-recurring engineering effort will begin in FY21 with fielding beginning in FY23 and the SWFTS TI-22 baseline. (5) The "CSA SWFTS Virtualization" effort supports the development and integration of the CSA system with the AN/BYG-1 Combat Control System on VIRGINIA and COLUMBIA new construction hulls. (6) The sixth effort is the ongoing support of engineering issues across all CSA systems as they arise.

NOTE: Beginning in FY20, the WM019 budget has been restructured to better align the CSA development and procurement efforts with the SWFTS TI/APB model. The changes reallocated funding entirely within the WM019 subhead to support current and future SWFTS development efforts. This restructuring will provide clarity to the recurring development and procurement costs associated with CSA systems and upgrades within the SWFTS TI/APB model.

[WM019 CSA MK3 Engineering Changes (LAN, SWFTS, TDA)] WM019 CSA MK3 Engineering Changes - Organic Technology insertion effort that supports and designs engineering changes for VA Blk III and following ships, including the Countermeasures Set Acoustic (CSA) system, Torpedo Defense Controller (TDC), and Launch Control Panels (LCPs). This supports changes to correct obsolescence, support SWFTS modernization goals and engineering changes necessary to accommodate modified devices and new devices, such as the ADC MK5.

[WM019 ECPs CSA MK2 MOD 2 Conversion to MK 4] WM019 - ECPs CSA MK2 MOD2 Conversion to CSA MK4 - Organic Technology insertion effort that converts CSA MK2 MOD2 to CSA MK4 to accommodate introduction of ADC MK5 to Virginia Class Block 1 and 2 Ships (10 hulls). Proofing completed in FY18, with replacement installations starting in FY19 to better align with overall submarine availabilities scheduling.

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	P-1 Line Item Number / Title: 2210 / Submarine Acoustic Warfare System	Modification Number / Title: 2 / CSA WM019
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
[WM019 CSA MK2 MOD 0 OBSOLESCENCE] WM019 - CSA MK2 MOD0 Obsolescence - NonOrganic Technology refresh effort that designs, builds, tests and certifies replacement components for obsolete CSA MK2 MOD4 on 688i ships and CSA MK2 MOD0 and 3 on SSBNs. Upgrades will occur in FY17-FY20. [WM019 CSAMK2 MOD2 CONVERSION to CSA MK4] WM019 - CSA MK2 MOD2 Conversion to CSA MK4 - Non Organic Technology Insertion effort that procures engineering change kits and systems including Countermeasures Set Acoustic (CSA) system, Torpedo Defense Controller (TDC), Launch Control Panels (LCPs), and CSA support system assets to correct obsolescence, including engineering changes necessary to accommodate modified devices and new devices, such as the ADC MK5. [WM019 CSAMK3 Kits and Systems] WM019 - CSA MK3 Kits and Systems - NonOrganic Procures engineering change kits and systems in support of SAWS including Countermeasures Set Acoustic (CSA) system, Torpedo Defense Controller (TDC), Launch Control Panels (LCPs), CSA support system assets to correct obsolescence, including engineering changes necessary to accommodate modified devices and new devices, such as the ADC MK5. [WM019 CSA MK3 Engineering Changes - Organic] WM019 CSA Engineering Changes - Organic Technology insertion effort that supports and designs engineering changes for the Countermeasure Set, Acoustic (CSA) systems fielded on all 688i and newer U.S. submarines. This supports changes to correct obsolescence, and engineering changes necessary to accommodate modified devices and new devices, such as the ADC MK5. [WM019 CSA Technology Insertion (TI-20) Upgrade Kits NonOrganic] WM019 CSA Technology Insertion (TI-20) - NonOrganic Procures CSA Technology Insertion to upgrade fielded SWFTS-integrated CSA systems from TI-14 and TI-16 to TI-20 on VIRGINIA Class submarines. [WM019 CSA MK3 Technology Insertion (TI-22) Upgrade Kits NonOrganic] WM019 CSA Technology Insertion (TI-22) - NonOrganic Procures CSA Technology Insertion to upgrade legacy CSA MK2 MOD 5 systems to TI-22 on SEAWOLF Class submarines. [WM019 CSA MK3 Technology Insertion (TI-24) Upgrade Kits NonOrganic] WM019 CSA Technology Insertion (TI-24) - NonOrganic Procures CSA Technology Insertion to upgrade fielded SWFTS-integrated CSA systems from TI-16 and TI-20 to TI-24 on VIRGINIA Class submarines. [WM019 CSA SWFTS VIRTUALIZATION - Organic] WM019 - CSA SWFTS VIRTUALIZATION Organic Nonrecurring costs for the development, testing and migration of CSA functionality into the AN/BYG-1 Combat Control System and the Payload Control System (PCS) on SWFTS. [WM019 CSA SEA WOLF SWFTS Integration - Organic] WM019 - CSA SEAWOLF SWFTS Integration Organic Nonrecurring costs for the development, testing, and SHIPALT for the SWFTS-integrated CSA on SEAWOLF in TI-22. [WM019 CSA MK2 MOD 2 Conversion to CSA MK4] WM019 - CSA MK2 MOD2 Conversion to CSA MK4 - Organic Nonrecurring costs for the Technology Insertion CSA MK4. [WM019 CSA ISEA] WM019 - CSA ISEA Supports engineering issues across all systems and platforms as they arise, using ISEA support.		

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3				P-1 Line Item Number / Title: 2210 / Submarine Acoustic Warfare System				Modification Number / Title: 2 / CSA WM019					
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: Countermeasure Set Acoustic			Modification Type: SHIPALT, OCMOD, EC					Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: CSA WM019													
B Kits													
Recurring													
1.1.1) WM019 CSA MK3 Engineering Changes (LAN, SWFTS, TDA) - Organic		- / 10.056	- / 1.813	- / 1.205	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
1.1.2) WM019 ECPs CSA MK2 MOD 2 Conversion to MK 4 - Organic		- / 4.579	- / 2.515	- / 1.226	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
1.1.3) WM019 CSA MK2 MOD 0 OBSOLESCENCE - NonOrganic ⁽¹⁰⁾		42 / 4.756	- / 0.663	- / 0.379	- / 0.206	- / -	- / 0.206	- / -	- / -	- / -	- / -	- / -	42 / 6.004
1.1.4) WM019 CSAMK2 MOD2 CONVERSION to CSA MK4 - NonOrganic		3 / 1.652	4 / 1.714	2 / 0.860	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	9 / 4.226
1.1.5) WM019 CSAMK3 Kits and Systems - NonOrganic		3 / 0.430	4 / 0.760	2 / 0.675	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	9 / 1.865
1.1.6) WM019 CSA MK3 Engineering Changes - Organic - Organic ⁽¹¹⁾		- / -	- / -	- / -	- / 3.214	- / -	- / 3.214	- / 2.548	- / 2.220	- / 2.442	- / 2.505	Continuing	Continuing
1.1.7) WM019 CSA Technology Insertion (TI-20) Upgrade Kits NonOrganic - NonOrganic		- / -	- / -	2 / 0.860	3 / 1.050	- / -	3 / 1.050	4 / 1.400	3 / 1.050	- / -	- / -	- / -	12 / 4.360
1.1.8) WM019 CSA MK3 Technology Insertion (TI-22) Upgrade Kits NonOrganic - NonOrganic		- / -	- / -	- / -	- / -	- / -	- / -	2 / 1.000	- / -	1 / 0.500	1 / 1.008	- / -	4 / 2.508
1.1.9) WM019 CSA MK3 Technology Insertion (TI-24) Upgrade Kits NonOrganic - NonOrganic		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 2.100	8 / 2.880	10 / 3.650	24 / 8.630
Subtotal: Recurring		- / 21.473	- / 7.465	- / 5.205	- / 4.470	- / -	- / 4.470	- / 4.948	- / 3.270	- / 5.042	- / 6.393	Continuing	Continuing
Non-Recurring													
1.2.1) WM019 CSA SWFTS VIRTUALIZATION - Organic - Organic ⁽¹²⁾		- / -	- / -	- / -	- / 0.750	- / -	- / 0.750	- / 0.500	- / 0.500	- / 0.500	- / 0.500	- / -	- / 2.750
1.2.2) WM019 CSA SEA WOLF SWFTS Integration - Organic - Organic ⁽¹³⁾		- / -	- / -	- / -	- / -	- / -	- / -	- / 1.125	- / 1.147	- / 0.489	- / 0.375	- / -	- / 3.136
1.2.3) WM019 CSA MK2 MOD 2 Conversion to CSA MK4 - Organic		- / 7.641	- / 1.357	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 8.998
Subtotal: Non-Recurring		- / 7.641	- / 1.357	- / -	- / 0.750	- / -	- / 0.750	- / 1.625	- / 1.647	- / 0.989	- / 0.875	- / 0.000	- / 14.884
Subtotal: CSA WM019		48 / 29.114	8 / 8.822	6 / 5.205	3 / 5.220	- / -	3 / 5.220	6 / 6.573	3 / 4.917	7 / 6.031	9 / 7.268	Continuing	Continuing
Subtotal: Procurement, All Modification Items		- / 29.114	- / 8.822	- / 5.205	- / 5.220	- / -	- / 5.220	- / 6.573	- / 4.917	- / 6.031	- / 7.268	Continuing	Continuing
Support (All Modification Items)													
2.1) WM019 CSA ISEA ⁽¹⁴⁾		- / 5.900	- / 0.771	- / 0.750	- / 0.791	- / -	- / 0.791	- / 0.862	- / 0.898	- / 0.980	- / 1.018	Continuing	Continuing

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3				P-1 Line Item Number / Title: 2210 / Submarine Acoustic Warfare System						Modification Number / Title: 2 / CSA WM019			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: Countermeasure Set Acoustic				Modification Type: SHIPALT, OCMOD, EC				Related RDT&E PEs:					

	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Financial Plan	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
<i>Subtotal: Support</i>	- / 5.900	- / 0.771	- / 0.750	- / 0.791	- / -	- / 0.791	- / 0.862	- / 0.898	- / 0.980	- / 1.018	Continuing	Continuing
Installation												
Modification Item 1 of 1: CSA WM019	- / 1.225	- / 0.763	- / 1.226	- / 1.392	- / 0.000	- / 1.392	- / 0.892	- / 0.504	- / 1.110	- / 0.956	- / 4.970	- / 13.038
<i>Subtotal: Installation</i>	- / 1.225	- / 0.763	- / 1.226	- / 1.392	- / -	- / 1.392	- / 0.892	- / 0.504	- / 1.110	- / 0.956	- / 4.970	- / 13.038
Total												
Total Cost (Procurement + Support + Installation)	36.239	10.356	7.181	7.403	0.000	7.403	8.327	6.319	8.121	9.242	Continuing	Continuing

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Exhibit P-3a, Individual Modification: PB 2020 Navy					Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3			P-1 Line Item Number / Title: 2210 / Submarine Acoustic Warfare System			Modification Number / Title: 2 / CSA WM019	
ID Code (A=Service Ready, B=Not Service Ready) :					MDAP/MAIS Code:		
Modification Item 1 of 1: CSA WM019							
Manufacturer Information							
Manufacturer Name: CSA MK3 RAYTHEON				Manufacturer Location: Keyport, WA			
Administrative Leadtime (<i>in Months</i>): 6				Production Leadtime (<i>in Months</i>): 18			
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates	Apr 2018						
Delivery Dates	Oct 2019						
Manufacturer Name: CSA MK2 Obsolescence NUWC Keyport				Manufacturer Location: Keyport, WA			
Administrative Leadtime (<i>in Months</i>): 4				Production Leadtime (<i>in Months</i>): 16			
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates	Feb 2018	Feb 2019	Feb 2020				
Delivery Dates	Jun 2019	Jun 2020	Jun 2021				
Manufacturer Name: CSA MK 2 to MK4 RAYTHEON				Manufacturer Location: Keyport, WA			
Administrative Leadtime (<i>in Months</i>): 6				Production Leadtime (<i>in Months</i>): 18			
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates	Apr 2018	Apr 2019					
Delivery Dates	Oct 2019	Oct 2020					
Manufacturer Name: CSA MK3 Technology Insertion (TI-20) TBD				Manufacturer Location: TBD			
Administrative Leadtime (<i>in Months</i>): 0				Production Leadtime (<i>in Months</i>): 18			
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates		Apr 2019	Apr 2020	Apr 2021	Apr 2022		
Delivery Dates		Oct 2020	Oct 2021	Oct 2022	Oct 2023		
Manufacturer Name: CSA MK3 Technology Insertion (TI-22) TBD				Manufacturer Location: TBD			
Administrative Leadtime (<i>in Months</i>): 0				Production Leadtime (<i>in Months</i>): 18			
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates				Apr 2021		Apr 2023	Apr 2024
Delivery Dates				Oct 2022		Oct 2024	Oct 2025
Manufacturer Name: CSA MK3 Technology Insertion (TI-24) TBD				Manufacturer Location: TBD			
Administrative Leadtime (<i>in Months</i>): 0				Production Leadtime (<i>in Months</i>): 18			
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates						Apr 2023	Apr 2024
Delivery Dates						Oct 2024	Oct 2025

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	P-1 Line Item Number / Title: 2210 / Submarine Acoustic Warfare System	Modification Number / Title: 2 / CSA WM019
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:

Modification Item 1 of 1: CSA WM019

Installation Information

Method of Implementation: AIT:: Installation Name: WM019 CSA MK2 MOD 0 OBSOLESCENCE

Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	24 / 1.225	10 / 0.563	5 / 0.286	3 / 0.175	0 / 0.000	3 / 0.175	- / -	- / -	- / -	- / -	0 / 0.000	42 / 2.249
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	24 / 1.225	10 / 0.563	5 / 0.286	3 / 0.175	0 / 0.000	3 / 0.175	- / -	- / -	- / -	- / -	0 / 0.000	42 / 2.249

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	24	-	-	10	-	-	-	5	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42
Out	24	-	-	10	-	-	-	5	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42

Method of Implementation: AIT:: Installation Name: WM019 CSAMK2 MOD2 CONVERSION to CSA MK4

Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	3 / 0.810	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 0.810
FY 2018	- / -	- / -	- / -	4 / 1.102	0 / 0.000	4 / 1.102	- / -	- / -	- / -	- / -	0 / 0.000	4 / 1.102
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.556	- / -	- / -	- / -	0 / 0.000	2 / 0.556
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Navy																								Date: March 2019							
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3												P-1 Line Item Number / Title: 2210 / Submarine Acoustic Warfare System												Modification Number / Title: 2 / CSA WM019							
ID Code (A=Service Ready, B=Not Service Ready) :																		MDAP/MAIS Code:													
Modification Item 1 of 1: CSA WM019																															
Installation Information																															
Method of Implementation: AIT:: Installation Name: WM019 CSAMK2 MOD2 CONVERSION to CSA MK4																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Total		- / -		- / -		3 / 0.810		4 / 1.102		0 / 0.000		4 / 1.102		2 / 0.556		- / -		- / -		- / -		0 / 0.000		9 / 2.468							
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	1	1	1	-	2	2	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9
Out	-	-	-	-	-	-	1	1	1	-	2	2	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	9
Method of Implementation: AIT:: Installation Name: WM019 CSAMK3 Kits and Systems																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		- / -		2 / 0.200		1 / 0.130		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		3 / 0.330					
FY 2018		- / -		- / -		- / -		1 / 0.115		0 / 0.000		1 / 0.115		- / -		- / -		- / -		- / -		- / -		3 / 0.345		4 / 0.460					
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		2 / 0.230		2 / 0.230					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
Total		- / -		2 / 0.200		1 / 0.130		1 / 0.115		0 / 0.000		1 / 0.115		- / -		- / -		- / -		- / -		- / -		5 / 0.575		9 / 1.020					
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	2	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	9
Out	-	-	2	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	9

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Exhibit P-3a, Individual Modification: PB 2020 Navy											Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3					P-1 Line Item Number / Title: 2210 / Submarine Acoustic Warfare System					Modification Number / Title: 2 / CSA WM019																						
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:																						
Modification Item 1 of 1: CSA WM019																																
Installation Information																																
Method of Implementation: [none specified]:: Installation Name: WM019 CSA Technology Insertion (TI-20) Upgrade Kits NonOrganic																																
Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total																				
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																				
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																				
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																				
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.336	- / -	- / -	- / -	0 / 0.000	2 / 0.336																				
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 0.504	- / -	- / -	0 / 0.000	3 / 0.504																				
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 0.672	- / -	0 / 0.000	4 / 0.672																				
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.168	2 / 0.336	0 / 0.000	3 / 0.504																				
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																				
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																				
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																				
Total	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.336	3 / 0.504	5 / 0.840	2 / 0.336	0 / 0.000	12 / 2.016																				
Installation Schedule																																
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot	
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
In	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	3	-	-	-	1	1	3	-	-	-	-	2	-	-	12
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	3	-	-	-	1	1	3	-	-	-	2	-	-	12
Method of Implementation: [none specified]:: Installation Name: WM019 CSA MK3 Technology Insertion (TI-22) Upgrade Kits NonOrg																																
Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total																				
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																				
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																				
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																				
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																				
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																				
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.270	1 / 0.270	0 / 0.000	2 / 0.540																				
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																				
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.270	1 / 0.270																				
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.275	1 / 0.275																				
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																				

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Exhibit P-3a, Individual Modification: PB 2020 Navy																							Date: March 2019								
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3											P-1 Line Item Number / Title: 2210 / Submarine Acoustic Warfare System											Modification Number / Title: 2 / CSA WM019									
ID Code (A=Service Ready, B=Not Service Ready) :																		MDAP/MAIS Code:													
Modification Item 1 of 1: CSA WM019																															
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: WM019 CSA MK3 Technology Insertion (TI-22) Upgrade Kits NonOrg																															
Installation Cost						Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total			
						Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)	
Total						- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 0.270		1 / 0.270		2 / 0.545		4 / 1.085			
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	2	4
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	2	4
Method of Implementation: [none specified]:: Installation Name: WM019 CSA MK3 Technology Insertion (TI-24) Upgrade Kits NonOrg																															
Installation Cost						Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total			
						Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)	
Prior Years						- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -	
FY 2018						- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -	
FY 2019						- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -	
FY 2020						- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -	
FY 2021						- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -	
FY 2022						- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -	
FY 2023						- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		2 / 0.350		4 / 0.700		6 / 1.050	
FY 2024						- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		8 / 1.400		8 / 1.400	
To Complete						- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		10 / 1.750		10 / 1.750	
Total						- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		2 / 0.350		22 / 3.850		24 / 4.200	
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	22	24
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	22	24

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	P-1 Line Item Number / Title: 2210 / Submarine Acoustic Warfare System	Modification Number / Title: 2 / CSA WM019
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
Footnotes: ⁽¹⁰⁾ Accommodated shifts to delivery of CSA MK4 systems due to continuing TI/APB changes. Seven shipsets will be delivered to hulls with TI-16/APB-17 baseline and remaining three shipsets will be delivered to hulls with the SWFTS TI-20/APB-19 baseline in FY20-FY21. ⁽¹¹⁾ CSA Engineering Changes (1.1.6) reflects a combination of the two previous organic CSA engineering support efforts on lines 1.1.1 and 1.1.2 less the SEAWOLF development effort. The SEAWOLF development and non-recurring engineering effort has been moved to a separate line (1.2.2) for better accountability of this effort. Increase in funding in FY20 is due to increase in requirement for software development associated with TI-20 baseline. ⁽¹²⁾ CSA Virtualization effort supports advanced integration of the CSA system with the AN/BYG-1 Combat Control System on VIRGINIA and COLUMBIA new construction hulls. ⁽¹³⁾ Installations were updated to reflect the current install schedule on Naval Tool for Interoperability Risk Assessment (NTIRA). ⁽¹⁴⁾ Installations were updated to reflect the current install schedule on Naval Tool for Interoperability Risk Assessment (NTIRA).		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 3: ASW Electronic Equipment							P-1 Line Item Number / Title: 2213 / Surface Ship Torpedo Def (SSTD)					
ID Code (A=Service Ready, B=Not Service Ready): B			Program Elements for Code B Items: N/A				Other Related Program Elements: N/A					
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	165.124	12.867	4.777	12.439	0.000	12.439	13.149	13.372	13.532	13.800	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	165.124	12.867	4.777	12.439	0.000	12.439	13.149	13.372	13.532	13.800	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	165.124	12.867	4.777	12.439	0.000	12.439	13.149	13.372	13.532	13.800	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	0.853	0.799	0.264	-	0.264	0.441	0.241	0.475	0.528	Continuing	Continuing
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:
The FY 2020 funding request was reduced by \$0.223 million to account for the availability of prior year execution balances.

Surface Ship Torpedo Defense (SSTD) provides a layered torpedo defense capability to protect surface ships. Under the OPN appropriation, SSTD funds the AN/SLQ-25 (NIXIE) system and the Torpedo Warning System (TWS). The AN/SLQ-25 (NIXIE) system provides towed persistent countermeasure capability. The TWS provides automated torpedo detection, classification, localization, and alertment capability. TWS is a component of The Anti-Torpedo Torpedo Defense System, a CVN based hard kill Torpedo Defense System.

WL101 AN/SLQ-25A UPGRADE KITS: Procures the upgrade of the AN/SLQ-25A (NIXIE) towed acoustic countermeasure system to the AN/SLQ-25C configuration. The AN/SLQ-25C enhances ship survivability against future torpedo threats.

WL102 Torpedo Warning System (TWS): Procures the Torpedo Warning System (TWS). TWS is an automated Torpedo Detection, Classification, and Localization (TDCL) system that generates warning alerts on incoming threat torpedoes. The TWS consists of towed active acoustic source and receive sensors, processing cabinets, workstations, and Countermeasure Anti-Torpedo (CAT) ready stows. The TWS sub functional groups are called the Target Acquisition Group (TAG), Tactical Control Group (TCG), and Ready Stow Group (RSG).

WL106 AN/SLQ-25 ENGINEERING CHANGES: The AN/SLQ-25 NIXIE is the Navy's primary Surface Ship Torpedo Defense (SSTD) system, providing towed persistent countermeasure capability to protect over 179 surface ships, including hulls that are duel tow from torpedoes. WL106, AN/SLQ-25 ENGINEERING CHANGES, consists of two major efforts starting in FY 2018 and continuing into FY2019: (1) Engineering Changes for AN/SLQ-25C and earlier variants and (2) continuation of the system technical insertion, started in FY 2018, that will result in the new configuration baseline, known as the AN/SLQ-25E. The following details each of the two major efforts. (1) Funding for AN/SLQ-25 Engineering Changes provides for hardware and software configuration changes to current production baselines to resolve emergent hardware obsolescence issues, software updates, and cyber security and program protection updates to the AN/SLQ-25A/C. These recurring efforts include investigation and resolution of AN/SLQ-25 Trouble Reports, including those resulting from service-identified issues resulting in operational downtime. These efforts are critical to the extension of the military service life of the system until all AN/SLQ-25A/C systems are modified to AN/SLQ-25E. (2) As a result of hardware obsolescence issues with the AN/SLQ-25A/C baseline that have precluded the continued production of this variant, a technical insertion began in FY 2018 under the nomenclature AN/SLQ-25E, which now is a government design and Request For Proposal (RFP) release as a hybrid build to print/build to spec contract. The AN/SLQ-25E updates the hardware and software architecture to a Commercial Off The Shelf (COTS-based), open, and modular configuration. The nonrecurring design efforts being completed by the Navy, began in FY 2018 and will continue into FY 2019. In FY 2019, systems design and software development will be on-going. This supports the RFP release in third quarter FY 2019. In FY2020, two major Engineering Changes will continue to support

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 3: ASW Electronic Equipment		P-1 Line Item Number / Title: 2213 / Surface Ship Torpedo Def (SSTD)
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
the in-service ships. Efforts for AN/SLQ 25-E system test and integration have been delayed due to the FY19 mark. These efforts are required to validate the new AN/SLQ-25E systems to be delivered to new construction ships starting in FY 2023. Procurement of AN/SLQ-25E system upgrade kits begins in FY 2022 to resolve AN/SLQ-25C obsolescence issues by back fitting systems in the existing fleet.		
WL830 PRODUCTION ENGINEERING (IN-HOUSE): Funding provides specification preparation and validation, production planning, contract deliverable monitoring, prime contractor monitoring for cost, schedule, and performance and Integrated Logistics Support (ILS) planning, review and evaluation of obsolescence issues, and coordination of government furnished information (GFI) and government furnished equipment (GFE).		
WL840 QUALITY ASSURANCE: Funding provides for quality assurance efforts including conducting quality assurance reviews of the contractor and subcontractors, documentation indicating contractor conformity to product performance requirements, and review of objective quality evidence.		
WL860 ACCEPTANCE TEST & ENGINEERING: Funding provides for production acceptance of contractor hardware. Acceptance testing includes government acceptance testing and Environmental Qualification Testing(EQT) in support of the AN/SLQ-25E development with operationally trained subject matter experts and software support engineers.		
WL900 PRODUCTION ENGINEERING (OUT-HOUSE): Consulting services in prior years provided production monitoring, installation planning and coordination support.		
WL900 CONSULTING SERVICES: Funding provides for contractor support to the program office for production monitoring, installation planning and coordination support.		
WL905 PRODUCTION ENGINEERING CONTRACTOR: Funding provides for production engineering tasks performed by the hardware contractor.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 3: ASW Electronic Equipment						P-1 Line Item Number / Title: 2213 / Surface Ship Torpedo Def (SSTD)				
ID Code (A=Service Ready, B=Not Service Ready): B				Program Elements for Code B Items: N/A			Other Related Program Elements: N/A			
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Surface Ship Torpedo Def (SSTD)				- / 156.934	- / -	- / -	- / -	- / -	- / -
P-3a	1 / WL106 ENGINEERING CHANGES (TBD)				- / 8.190	- / 12.867	- / 4.777	- / 12.439	- / 0.000	- / 12.439
P-40	Total Gross/Weapon System Cost				- / 165.124	- / 12.867	- / 4.777	- / 12.439	- / 0.000	- / 12.439
Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Surface Ship Torpedo Def (SSTD)				- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / WL106 ENGINEERING CHANGES (TBD)				- / 13.149	- / 13.372	- / 13.532	- / 13.800	Continuing	Continuing
P-40	Total Gross/Weapon System Cost				- / 13.149	- / 13.372	- / 13.532	- / 13.800	Continuing	Continuing
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown. Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										
Justification: The FY 2020 funding request was reduced by \$0.223 million to account for the availability of prior year execution balances.										

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3						P-1 Line Item Number / Title: 2213 / Surface Ship Torpedo Def (SSTD)									Aggregated Items Title: Surface Ship Torpedo Def (SSTD)					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
1) WL101 AN/SLQ-25A UPGRADE KITS																				
1.1) 25A Modification Kits	A		528,387.85	214	113.075	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) WL101 AN/SLQ-25A UPGRADE KITS			-	-	113.075	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3) WL103 AN/SLQ-25X (TWS COMPATIBLE SYSTEM) HARDWARE																				
3.1) WL103 AN/SLQ-25X (TWS COMPATIBLE SYSTEM) HARDWARE	A		3,788K	1	3.788	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 3) WL103 AN/SLQ-25X (TWS COMPATIBLE SYSTEM) HARDWARE			-	-	3.788	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4) WL104 AN-SLQ-25D EC-2 ()																				
4.1) AN-SLQ-25C EC-2 ()	A		13,447K	1	13.447	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 4) WL104 AN-SLQ-25D EC-2 ()			-	-	13.447	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5) WL105 AN-SLQ-25C CVN BATTLE SPARE																				
5.1) HARDWARE	A		-	-	1.500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 5) WL105 AN-SLQ-25C CVN BATTLE SPARE			-	-	1.500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6) WL106 ENGINEERING CHANGE																				
6.1) EC-1 UPDATE SLQ-25	A		-	-	2.100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.2) TECH INSERTION EC SLQ-25	A		-	-	0.936	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 6) WL106 ENGINEERING CHANGE			-	-	3.036	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7) WL830 PRODUCTION ENGINEERING																				
7.1) PRODUCTION ENGINEERING IN-HOUSE	A		-	-	13.281	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 7) WL830 PRODUCTION ENGINEERING			-	-	13.281	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8) WL840 QUALITY ASSURANCE																				
8.1) QUALITY ASSURANCE (IN-HOUSE)	A		-	-	1.264	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.2) Torpedo Warning System (TWS) Quality Assurance	A		-	-	0.212	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3							P-1 Line Item Number / Title: 2213 / Surface Ship Torpedo Def (SSTD)								Aggregated Items Title: Surface Ship Torpedo Def (SSTD)					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
Subtotal: 8) WL840 QUALITY ASSURANCE			-	-	1.476	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9) WL860 ACCEPTANCE TEST AND ENGINEERING																				
9.1) ACCEPTANCE TESTING & ENGINEERING	A		-	-	1.824	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.2) TWS Acceptance Testing & Engineering	A		-	-	0.496	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 9) WL860 ACCEPTANCE TEST AND ENGINEERING			-	-	2.320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10) WL900 SERVICES																				
10.1) PRODUCTION ENGINEERING (OUT-HOUSE)	A		-	-	0.925	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.2) CONSULTING SERVICES	A		-	-	1.944	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 10) WL900 SERVICES			-	-	2.869	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11) WL905 PRODUCTION ENGINEERING CONTRACTOR																				
11.1) PRODUCTION ENGINEERING CONTRACTOR	A		-	-	2.142	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 11) WL905 PRODUCTION ENGINEERING CONTRACTOR			-	-	2.142	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total			-	-	156.934	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

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Exhibit P-3a, Individual Modification: PB 2020 Navy						Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3				P-1 Line Item Number / Title: 2213 / Surface Ship Torpedo Def (SSTD)				Modification Number / Title: 1 / WL106 ENGINEERING CHANGES			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	8.190	12.867	4.777	12.439	0.000	12.439	13.149	13.372	13.532	13.800	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	8.190	12.867	4.777	12.439	0.000	12.439	13.149	13.372	13.532	13.800	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	8.190	12.867	4.777	12.439	0.000	12.439	13.149	13.372	13.532	13.800	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

[WL106 Engineering Changes SLQ-25] WL106 AN/SLQ-25 ENGINEERING CHANGES: The AN/SLQ-25 NIXIE is the Navy's primary Surface Ship Torpedo Defense (SSTD) system, providing towed persistent countermeasure capability to protect over 185 surface ships from torpedoes. WL106, AN/SLQ-25 ENGINEERING CHANGES, consists of two major efforts starting in FY 2018 and continuing into FY2019: (1) Engineering Changes for AN/SLQ-25C and earlier variants and (2) continuation of the system technical refresh, started in FY 2018, that will result in the new configuration baseline, AN/SLQ-25E. The following details each of the two major efforts. (1) Funding for AN/SLQ-25 Engineering Changes provides for hardware and software configuration changes to current production baselines to resolve emergent hardware obsolescence issues, provides for software updates, and provides for cyber security and program protection updates. These recurring efforts include investigation and resolution of AN/SLQ-25 Trouble Reports, including those resulting from service-identified issues. These efforts are critical to the extension of the military service life of the system until all AN/SLQ-25C systems are modified to AN/SLQ-25E. (2) As a result of hardware obsolescence issues with the AN/SLQ-25C baseline that have precluded the continued production of this variant, a technical refresh began in FY 2018 under the nomenclature AN/SLQ-25E, which now is a government design and Request For Proposal (RFP) release as a build to print. The AN/SLQ-25E updates the hardware and software architecture to a Commercial Off The Shelf (COTS-based), open, and modular configuration. The nonrecurring design efforts being completed by the Navy, began in FY 2018 and will continue into FY 2019. In FY 2019, systems design and software development will be completed along with system testing and integration. This supports the RFP release of Second Quarter FY 2019. FY 2020 will continue Engineering Change on the fleet. These EC's extend the system longevity by addressing obsolescence with system until AN/SLQ 25E backfit is available. These efforts are required to deliver AN/SLQ-25E systems to new construction ships starting in FY 2023. Procurement of AN/SLQ-25E system upgrade kits begins in FY 2022 to resolve AN/SLQ-25C obsolescence issues by back fitting systems in the existing fleet.

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3				P-1 Line Item Number / Title: 2213 / Surface Ship Torpedo Def (SSTD)				Modification Number / Title: 1 / WL106 ENGINEERING CHANGES				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Models of Systems Affected: [No Model Specified]			Modification Type: TBD					Related RDT&E PEs:				
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Procurement												
Modification Item 1 of 1: WL106 ENGINEERING CHANGES												
B Kits												
Recurring												
1.1.1) WL106 Engineering Changes SLQ-25 - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 0.836	5 / 3.060	3 / 1.836	Continuing	Continuing
1.1.2) WL106 ECPs - Organic	- / -	- / -	- / -	- / 0.670	- / -	- / 0.670	- / 1.129	- / 0.999	- / 0.825	- / 0.960	Continuing	Continuing
1.1.3) WL106 TECH INSERTION EC SLQ-25 - Organic	- / -	- / 0.718	- / 0.536	- / 0.654	- / -	- / 0.654	- / 0.646	- / 0.675	- / 0.500	- / -	- / -	- / 3.729
1.1.4) WL106 EC-1 UPDATE SLQ-25 - Organic	- / -	- / 0.713	- / 0.713	- / 0.727	- / -	- / 0.727	- / 0.800	- / 0.830	- / 0.770	- / 0.880	- / -	- / 5.433
Subtotal: Recurring	- / 0.000	- / 1.431	- / 1.249	- / 2.051	- / -	- / 2.051	- / 2.575	- / 3.340	- / 5.155	- / 3.676	Continuing	Continuing
Non-Recurring												
1.2.1) WL106 AN/SLQ-25 Tech Insertion - Non - Organic ⁽¹⁾	- / 8.190	- / 5.400	- / 0.785	- / 4.408	- / -	- / 4.408	- / 4.078	- / 3.199	- / -	- / 1.200	- / -	- / 27.260
1.2.2) WL106 AN/SLQ-25 Tech Insertion - Organic ⁽²⁾	- / -	- / 4.206	- / 0.849	- / 1.260	- / -	- / 1.260	- / 0.900	- / 0.920	- / -	- / 0.854	- / -	- / 8.989
Subtotal: Non-Recurring	- / 8.190	- / 9.606	- / 1.634	- / 5.668	- / -	- / 5.668	- / 4.978	- / 4.119	- / -	- / 2.054	- / 0.000	- / 36.249
Subtotal: WL106 ENGINEERING CHANGES	- / 8.190	- / 11.037	- / 2.883	- / 7.719	- / -	- / 7.719	- / 7.553	3 / 7.459	5 / 5.155	3 / 5.730	Continuing	Continuing
Subtotal: Procurement, All Modification Items	- / 8.190	- / 11.037	- / 2.883	- / 7.719	- / -	- / 7.719	- / 7.553	- / 7.459	- / 5.155	- / 5.730	Continuing	Continuing
Support (All Modification Items)												
2.1) WL830 AN/SLQ-25 Production Engineering In House ⁽³⁾	- / -	- / 0.514	- / 0.360	- / 1.607	- / -	- / 1.607	- / 1.579	- / 1.725	- / 1.659	- / 1.818	Continuing	Continuing
2.2) WL840 AN/SLQ-25 Quality Assurance ⁽⁴⁾	- / -	- / 0.204	- / 0.200	- / 0.861	- / -	- / 0.861	- / 0.895	- / 0.920	- / 0.752	- / 1.587	Continuing	Continuing
2.3) WL860 AN/SLQ-25 Acceptance Test and Engineering ⁽⁵⁾	- / -	- / 0.509	- / 0.329	- / 0.690	- / -	- / 0.690	- / 0.722	- / 0.899	- / 0.642	- / 0.890	Continuing	Continuing
2.4) WL900 AN/SLQ-25 Consulting Services ⁽⁶⁾	- / -	- / 0.255	- / 0.650	- / 1.100	- / -	- / 1.100	- / 1.200	- / 1.269	- / 0.979	- / 1.000	Continuing	Continuing
2.5) WL905 AN/SLQ-25 Production Engineering Contractor ⁽⁷⁾	- / -	- / 0.348	- / 0.355	- / 0.462	- / -	- / 0.462	- / 1.200	- / 1.100	- / 0.345	- / 0.375	Continuing	Continuing
Subtotal: Support	- / 0.000	- / 1.830	- / 1.894	- / 4.720	- / -	- / 4.720	- / 5.596	- / 5.913	- / 4.377	- / 5.670	Continuing	Continuing
Installation												
Modification Item 1 of 1: WL106 ENGINEERING CHANGES	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 4.000	- / 2.400	- / 0.612	- / 7.012
Subtotal: Installation	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 4.000	- / 2.400	- / 0.612	- / 7.012
Total												
Total Cost (Procurement + Support + Installation)	8.190	12.867	4.777	12.439	0.000	12.439	13.149	13.372	13.532	13.800	Continuing	Continuing

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																							
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3										P-1 Line Item Number / Title: 2213 / Surface Ship Torpedo Def (SSTD)										Modification Number / Title: 1 / WL106 ENGINEERING CHANGES													
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																		
Modification Item 1 of 1: WL106 ENGINEERING CHANGES																																	
Installation Information																																	
Method of Implementation: [none specified]:: Installation Name: WL106 Engineering Changes SLQ-25																																	
Installation Cost		Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total																				
		<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>																			
Prior Years		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																				
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																				
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																				
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																				
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																				
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 4.000	- / -	0 / 0.000	3 / 4.000																				
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 2.400	0 / 0.000	5 / 2.400																				
FY 2024		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 0.612	3 / 0.612																				
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	- / -																				
Total		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 4.000	5 / 2.400	3 / 0.612	11 / 7.012																				
Installation Schedule																																	
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot		
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	-	2	2	1	-	3	11		
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	-	2	2	1	3	11		
Method of Implementation (Organic): WL106 ECPs - Not Installed																														Installation Quantity: 0			
Footnotes: ⁽¹⁾ The increase in FY 20 supports AN/SLQ-25C Engineering Change updates not completed to reduce CASREPs and resolve parts obsolescence in the fleet; non-recurring engineering government design for the AN/SLQ-25E system hardware and software technical insertion; and hardware procurement for the government build of Design Qualification Units (DQU) used to support system integration and design validation. ⁽²⁾ The increase in FY 20 supports AN/SLQ-25C Engineering Change updates not completed to reduce CASREPs and resolve parts obsolescence in the fleet; non-recurring engineering government design for the AN/SLQ-25E system hardware and software technical insertion; and hardware procurement for the government build of Design Qualification Units (DQU) used to support system integration and design validation. ⁽³⁾ Moved Support Costs to P-3a from P-40A to show all costs associated with Engineering Changes. In House Production Support increases in FY 20 due to the parts obsolescence modal forecasted increases in Engineering Change Proposals (ECPs) needed for the obsolete 25C system; and developing first article testing requirements prior to production supporting first article delivery. ⁽⁴⁾ Quality Assurance funding increases in FY 20 to establish requirements for the AN/SLQ-25E production and finalize the Quality Assurance Plan with the vendor.																																	

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	P-1 Line Item Number / Title: 2213 / Surface Ship Torpedo Def (SSTD)	Modification Number / Title: 1 / WL106 ENGINEERING CHANGES
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
⁽⁵⁾ The increase in FY 20 supports AN/SLQ-25C software validation, CASREPS, AN/SLQ-25E technology insertion test and acceptance. The program will utilize subject matter experts to ensure industry can manufacture the 25E and prototypes can be produced through government machine shops allowing earlier hands-on assessment of system hardware components used as schedule risk reduction strategy supporting system deliveries to the fleet. ⁽⁶⁾ The increase in FY 20 supports AN/SLQ-25C software validation, CASREPS, AN/SLQ-25E technology insertion test and acceptance. The program will utilize subject matter experts to ensure industry can manufacture the 25E and prototypes can be produced through government machine shops allowing earlier hands-on assessment of system hardware components used as schedule risk reduction strategy supporting system deliveries to the fleet. ⁽⁷⁾ The increase in FY 20 supports AN/SLQ-25C software validation, CASREPS, AN/SLQ-25E technology insertion test and acceptance. The program will utilize subject matter experts to ensure industry can manufacture the 25E and prototypes can be produced through government machine shops allowing earlier hands-on assessment of system hardware components used as schedule risk reduction strategy supporting system deliveries to the fleet.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy	Date: March 2019

Appropriation / Budget Activity / Budget Sub Activity:

1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip /
BSA 3: ASW Electronic Equipment

P-1 Line Item Number / Title:

2225 / Fixed Surveillance System

ID Code (A=Service Ready, B=Not Service Ready): A**Program Elements for Code B Items:** N/A**Other Related Program Elements:** N/A**Line Item MDAP/MAIS Code:** N/A

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	1,411.495	330.102	294.730	128.441	310.503	438.944	401.417	371.103	302.977	552.330	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	1,411.495	330.102	294.730	128.441	310.503	438.944	401.417	371.103	302.977	552.330	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	1,411.495	330.102	294.730	128.441	310.503	438.944	401.417	371.103	302.977	552.330	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The FY 2020 funding request was reduced by \$11.954 million to account for the availability of prior year execution balances.

Additional details with respect to this line item are held at a higher classification. This line item is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.

[P40A / Classified (2225)]: Additional details with respect to this line item are held at a higher classification. This line item is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.

[P40A / Classified (222506)]: Additional details with respect to this line item are held at a higher classification. This line item is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 3: ASW Electronic Equipment						P-1 Line Item Number / Title: 2225 / Fixed Surveillance System				
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A			Other Related Program Elements: N/A			
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Fixed Surveillance System				- / 1,411.495	- / 330.102	- / 294.730	- / 128.441	- / 310.503	- / 438.944
P-40	Total Gross/Weapon System Cost				- / 1,411.495	- / 330.102	- / 294.730	- / 128.441	- / 310.503	- / 438.944
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										

Justification:

\$310.5M of FY 2020 baseline funding request was shifted to OCO to support the European Deterrence Initiative Systems.

Additional details with respect to this line item are held at a higher classification. This line item is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.

OCO:

The FY20 OCO supports the European Deterrence Initiative Systems.

Additional details with respect to this line item are held at a higher classification. This line item is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3						P-1 Line Item Number / Title: 2225 / Fixed Surveillance System									Aggregated Items Title: Fixed Surveillance System					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
1) Classified																				
1.1) Classified (2225)	A		-	-	1,325.564	-	-	323.118	-	-	287.731	-	-	121.570	-	-	310.503	-	-	432.073
1.2) Classified (222506)	A		-	-	85.931	-	-	6.984	-	-	6.999	-	-	6.871	-	-	-	-	-	6.871
Subtotal: 1) Classified			-	-	1,411.495	-	-	330.102	-	-	294.730	-	-	128.441	-	-	310.503	-	-	438.944
Total			-	-	1,411.495	-	-	330.102	-	-	294.730	-	-	128.441	-	-	310.503	-	-	438.944

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 3: ASW Electronic Equipment							P-1 Line Item Number / Title: 2237 / SURTASS					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: 0204311N				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	144.632	36.580	57.872	21.923	0.000	21.923	17.977	24.278	24.723	25.218	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	144.632	36.580	57.872	21.923	0.000	21.923	17.977	24.278	24.723	25.218	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	144.632	36.580	57.872	21.923	0.000	21.923	17.977	24.278	24.723	25.218	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	2.111	2.782	2.753	-	2.753	1.600	2.990	2.753	1.346	Continuing	Continuing
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

PROGRAM COVERAGE: Surveillance Towed Array Sensor System (SURTASS) is the mobile, tactical, and strategic arm of the Navy's undersea surveillance capability that provides deep ocean and littoral acoustic detection and cueing for tactical weapon platforms against diesel and nuclear submarines as well as surface vessels in any given Area of Operations worldwide. Dedicated Anti-Submarine Warfare (ASW) T-AGOS ships tow long acoustic arrays that collect acoustic data and relay that data to shore facilities via satellites for processing and fusion of the resulting contact data with other sensors. Currently, there are five Small Waterplane Area Twin Hull (SWATH) T-AGOS ships operating in the Pacific area. Ship configurations are:

T-AGOS 22 USNS LOYAL (1), a SWATH-P platform which supports passive operations using the TB-29A Twinline (TL-29A) array, providing improved detection and classification capability. This ship class uses the Integrated Common Processor (ICP) signal processing and display system common with the SSN Advanced Rapid Commercial Off the Shelf (COTS) Insertion (ARCI) Sonar Processing System;

Three (3) T-AGOS SWATH-P platforms, T-AGOS 19 USNS VICTORIOUS, T-AGOS 20 USNS ABLE, and T-AGOS 21 USNS EFFECTIVE, supporting passive/active operations, configured with the ICP processing and display system, the TL-29A array, and the Compact Low Frequency Active (CLFA) transmit capability;

One (1) Low Frequency Active (LFA) equipped ship, T-AGOS 23 USNS IMPECCABLE, a SWATH-P platform configured with the ICP Processing and Display system, the TL-29A array, and the Low Frequency Active (LFA) transmit capability. The active capability provides greatly improved detection against diesel submarines as well as the quiet nuclear submarine threat.

In addition to the five platforms described above, two (2) shore sites are configured with the ICP processing and display suites to receive the T-AGOS acoustic data via SHF satellite communication links. One of the two shore sites is equipped with three (3) SURTASS Team Trainers (STTs) to support Home Port Training Periods.

A cost sharing agreement with Japan also provides a shore site and two Japanese SWATH ships with similar capability to the T-AGOS SWATH ships for the Western Pacific region. The Japanese Auxiliary Ocean Surveillance (JAOS) ships are being upgraded to the TL-29A array. A third Japanese SWATH ship is planned for delivery in 2021 with mission equipment funding previously programmed.

[P3A - 6 / VG007 - Field Changes/Modifications]: VG007
Field Changes/Modifications - Provide for correction of deficiencies identified by Fleet use, array support equipment, communications equipment, and replacement of aging/unsupportable equipment.

VG776

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 3: ASW Electronic Equipment		P-1 Line Item Number / Title: 2237 / SURTASS
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0204311N
Line Item MDAP/MAIS Code: N/A		
Installation of Equipment - Installation Agents: SSC LANT, SSC PAC, Military Sealift Command, and Lockheed Martin.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 3: ASW Electronic Equipment						P-1 Line Item Number / Title: 2237 / SURTASS				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: 0204311N				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	1 / VG006 - Integrated Common Processor (N/A)				- / 44.757	- / 11.452	- / 13.385	- / 11.432	- / 0.000	- / 11.432
P-3a	5 / VG006 - SURTASS-E (TBD)				- / 0.000	- / 0.000	- / 10.000	- / 0.000	- / 0.000	- / 0.000
P-3a	2 / VG006 - TL-29A U.S. Twinline Arrays (N/A)				- / 63.687	- / 11.464	- / 1.820	- / 1.860	- / 0.000	- / 1.860
P-3a	3 / VG006 - J-AOS (N/A)				- / 15.000	- / 0.000	- / 28.354	- / 0.000	- / 0.000	- / 0.000
P-3a	4 / VG006 - SURTASS Team Trainer (N/A)				- / 7.867	- / 4.194	- / 1.750	- / 4.500	- / 0.000	- / 4.500
P-3a	6 / VG007 - Field Changes/Modifications (N/A)				- / 13.321	- / 9.470	- / 2.563	- / 4.131	- / 0.000	- / 4.131
P-40	Total Gross/Weapon System Cost				- / 144.632	- / 36.580	- / 57.872	- / 21.923	- / 0.000	- / 21.923
Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	1 / VG006 - Integrated Common Processor (N/A)				- / 11.394	- / 15.630	- / 17.114	- / 16.346	- / 3.640	- / 145.150
P-3a	5 / VG006 - SURTASS-E (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 10.000
P-3a	2 / VG006 - TL-29A U.S. Twinline Arrays (N/A)				- / 1.018	- / 1.935	- / 1.974	- / 2.013	- / 0.000	- / 85.771
P-3a	3 / VG006 - J-AOS (N/A)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 43.354
P-3a	4 / VG006 - SURTASS Team Trainer (N/A)				- / 1.750	- / 4.700	- / 1.750	- / 4.800	Continuing	Continuing
P-3a	6 / VG007 - Field Changes/Modifications (N/A)				- / 3.815	- / 2.013	- / 3.885	- / 2.059	- / 0.000	- / 41.257
P-40	Total Gross/Weapon System Cost				- / 17.977	- / 24.278	- / 24.723	- / 25.218	Continuing	Continuing
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										
Justification: FY 20 requests funding (\$11.5 million) for Integrated Common Processor (ICP) spares and spare parts for Low Frequency Active (LFA)/Compact Low Frequency Active (CLFA) components and towed arrays, \$4.2M for field changes and modifications for multi-year transition to an upgraded command and control (C2) system, \$4.5M for SURTASS Team Trainers, and \$1.8M for additional TL-29A towed array refurbishments. Details provided in individual exhibit P-3As.										

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3					P-1 Line Item Number / Title: 2237 / SURTASS					Modification Number / Title: 1 / VG006 - Integrated Common Processor		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	44.757	11.452	13.385	11.432	0.000	11.432	11.394	15.630	17.114	16.346	3.640	145.150
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	44.757	11.452	13.385	11.432	0.000	11.432	11.394	15.630	17.114	16.346	3.640	145.150
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	44.757	11.452	13.385	11.432	0.000	11.432	11.394	15.630	17.114	16.346	3.640	145.150
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: FY20 and out-year funding continues cyclical ICP technical refresh of hardware and software. ICP system configuration varies from ship to ship depending upon the type of arrays used (passive only, or passive and active). Additionally, Tech refresh efforts and individual unit procurements and their related costs can be more significant in some years than others based on a wide range of factors, including end of life components that require refresh; the combination of Low Frequency Active (LFA) vs. Compact Low Frequency Active (CLFA) assets; the need to incorporate significant cyber security and program protection improvements to reduce existing and projected threat vectors as well as the overall program protection posture and related requirements; inspections and testing into a particular ICP system undergoing refresh; and the need to update Configuration Control Models (CCMs) or Engineering Measurements Program (EMP) systems for each major hardware refresh. Accordingly, the procurement and installation costs will vary from one platform to another, depending on the configuration and the ship.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3					P-1 Line Item Number / Title: 2237 / SURTASS					Modification Number / Title: 1 / VG006 - Integrated Common Processor			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: Integrated Common Processor				Modification Type: N/A				Related RDT&E PEs: 0204311N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	
Procurement													
Modification Item 1 of 1: VG006 - Integrated Common Processor													
B Kits													
Recurring													
1.1.1) Integrated Common Processor - NonOrganic ⁽¹⁾	28 / 34.523	7 / 9.052	7 / 10.184	7 / 8.631	- / -	7 / 8.631	6 / 9.244	10 / 13.030	10 / 13.614	10 / 12.776	- / -	85 / 111.054	
<i>Subtotal: Recurring</i>	- / 34.523	- / 9.052	- / 10.184	- / 8.631	- / -	- / 8.631	- / 9.244	- / 13.030	- / 13.614	- / 12.776	- / 0.000	- / 111.054	
<i>Subtotal: VG006 - Integrated Common Processor</i>	28 / 34.523	7 / 9.052	7 / 10.184	7 / 8.631	- / -	7 / 8.631	6 / 9.244	10 / 13.030	10 / 13.614	10 / 12.776	- / -	85 / 111.054	
<i>Subtotal: Procurement, All Modification Items</i>	- / 34.523	- / 9.052	- / 10.184	- / 8.631	- / -	- / 8.631	- / 9.244	- / 13.030	- / 13.614	- / 12.776	- / 0.000	- / 111.054	
Installation													
Modification Item 1 of 1: VG006 - Integrated Common Processor	- / 10.234	- / 2.400	- / 3.201	- / 2.801	- / 0.000	- / 2.801	- / 2.150	- / 2.600	- / 3.500	- / 3.570	- / 3.640	- / 34.096	
<i>Subtotal: Installation</i>	- / 10.234	- / 2.400	- / 3.201	- / 2.801	- / -	- / 2.801	- / 2.150	- / 2.600	- / 3.500	- / 3.570	- / 3.640	- / 34.096	
Total													
Total Cost (Procurement + Support + Installation)	44.757	11.452	13.385	11.432	0.000	11.432	11.394	15.630	17.114	16.346	3.640	145.150	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3					P-1 Line Item Number / Title: 2237 / SURTASS					Modification Number / Title: 1 / VG006 - Integrated Common Processor		
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:				
Modification Item 1 of 1: VG006 - Integrated Common Processor												
Manufacturer Information												
Manufacturer Name: Lockheed Martin						Manufacturer Location: VA						
Administrative Leadtime (in Months): 2						Production Leadtime (in Months): 12						
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates	Jan 2018	Jan 2019	Jan 2020	Jan 2021	Jan 2022	Jan 2023	Jan 2024					
Delivery Dates	Jan 2019	Jan 2020	Jan 2021	Jan 2022	Jan 2023	Jan 2024	Jan 2025					
Manufacturer Name: Various						Manufacturer Location: Various						
Administrative Leadtime (in Months): 2						Production Leadtime (in Months): 12						
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates	Jan 2018	Jan 2019	Jan 2020	Jan 2021	Jan 2022	Jan 2023	Jan 2024					
Delivery Dates	Jan 2019	Jan 2020	Jan 2021	Jan 2022	Jan 2023	Jan 2024	Jan 2025					
Installation Information												
Method of Implementation: AIT (Alteration Installation Team):: Installation Name: Integrated Common Processor												
Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	23 / 10.234	5 / 2.400	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	28 / 12.634
FY 2018	- / -	- / -	7 / 3.201	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	7 / 3.201
FY 2019	- / -	- / -	- / -	7 / 2.801	0 / 0.000	7 / 2.801	- / -	- / -	- / -	- / -	0 / 0.000	7 / 2.801
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	7 / 2.150	- / -	- / -	- / -	0 / 0.000	7 / 2.150
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 2.600	- / -	- / -	0 / 0.000	6 / 2.600
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 3.500	- / -	0 / 0.000	10 / 3.500
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 3.570	0 / 0.000	10 / 3.570
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 3.640	10 / 3.640
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	23 / 10.234	5 / 2.400	7 / 3.201	7 / 2.801	0 / 0.000	7 / 2.801	7 / 2.150	6 / 2.600	10 / 3.500	10 / 3.570	10 / 3.640	85 / 34.096

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Exhibit P-3a, Individual Modification: PB 2020 Navy																		Date: March 2019													
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3										P-1 Line Item Number / Title: 2237 / SURTASS										Modification Number / Title: 1 / VG006 - Integrated Common Processor											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: VG006 - Integrated Common Processor																															
Installation Information																															
Method of Implementation: AIT (Alteration Installation Team):: Installation Name: Integrated Common Processor																															
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	23	-	-	3	2	-	1	3	3	-	2	3	2	-	2	3	2	-	1	3	2	-	4	3	3	-	4	3	3	10	85
Out	21	2	-	-	3	2	1	-	3	3	2	-	3	2	2	-	3	2	1	3	2	-	4	3	3	-	4	3	3	10	85

Footnotes:

⁽¹⁾ ICP system configuration varies from ship to ship depending upon the type of arrays used (passive only, or passive and active). Additionally, Tech refresh efforts and individual unit procurements and their related costs can be more significant in some years than others based on a wide range of factors, including end of life components that require refresh; the combination of Low Frequency Active (LFA) vs. Compact Low Frequency Active (CLFA) assets; the need to incorporate significant cyber security and program protection improvements to reduce existing and projected threat vectors as well as the overall program protection posture and related requirements; inspections and testing into a particular ICP system undergoing refresh; and the need to update Configuration Control Models (CCMs) or Engineering Measurements Program (EMP) systems for each major hardware refresh. Accordingly, the procurement and installation costs will vary from one platform to another, depending on the configuration and the ship.

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3				P-1 Line Item Number / Title: 2237 / SURTASS						Modification Number / Title: 5 / VG006 - SURTASS-E		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	0.000	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	10.000
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	0.000	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	10.000
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	0.000	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	10.000
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:
The Expeditionary Surveillance Towed Array Sensor System (SURTASS-E) is a Rapid Prototyping, Experimentation and Demonstration (RPED) project, tasked to re-package, test and demonstrate a SURTASS-like acoustic surveillance system which can be used as a surrogate for some of the capabilities provided by traditional T-AGOS class vessels. The \$10M in FY19 provides for procurement of a production TL-29A Twin Line Towed Array plus supporting towed array assemblies and components required to provide the expeditionary capability to the fleet for extended testing and development.

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3				P-1 Line Item Number / Title: 2237 / SURTASS						Modification Number / Title: 5 / VG006 - SURTASS-E			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: [No Model Specified]				Modification Type: TBD				Related RDT&E PEs: 0204311N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	
Procurement													
<i>Modification Item 1 of 1:</i> VG006 - SURTASS-E													
B Kits													
Recurring													
1.1.1) SURTASS-E Arrays - NonOrganic	- / -	- / -	1 / 10.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 10.000	
<i>Subtotal: Recurring</i>	- / 0.000	- / -	- / 10.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 10.000	
<i>Subtotal: VG006 - SURTASS-E</i>	- / -	- / -	1 / 10.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 10.000	
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.000	- / -	- / 10.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 10.000	
Installation													
<i>Modification Item 1 of 1:</i> VG006 - SURTASS-E	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	
<i>Subtotal: Installation</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	10.000	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3										P-1 Line Item Number / Title: 2237 / SURTASS										Modification Number / Title: 5 / VG006 - SURTASS-E											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: VG006 - SURTASS-E																															
Manufacturer Information																															
Manufacturer Name: LOCKHEED MARTIN															Manufacturer Location: SYRCACUSE, NY																
Administrative Leadtime (in Months): 2															Production Leadtime (in Months): 19																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates						Sep 2019																									
Delivery Dates						Apr 2021																									
Installation Information																															
Method of Implementation: AIT (Alteration Installation Team):: Installation Name: SURTASS-E Arrays																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		1 / 0.000		- / -		- / -		- / -		- / -		0 / 0.000		1 / -					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
Total		- / -		- / -		- / -		- / -		- / -		- / -		1 / 0.000		- / -		- / -		- / -		- / -		0 / 0.000		1 / -					
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1

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Exhibit P-3a, Individual Modification: PB 2020 Navy						Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3				P-1 Line Item Number / Title: 2237 / SURTASS				Modification Number / Title: 2 / VG006 - TL-29A U.S. Twinline Arrays			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	63.687	11.464	1.820	1.860	0.000	1.860	1.018	1.935	1.974	2.013	0.000	85.771
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	63.687	11.464	1.820	1.860	0.000	1.860	1.018	1.935	1.974	2.013	0.000	85.771
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	63.687	11.464	1.820	1.860	0.000	1.860	1.018	1.935	1.974	2.013	0.000	85.771
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The TL-29A Twinline is a shallow water variant of the common array produced by NAVSEA. The array consists of 2 shorter array lengths and array support equipment, and is designed for increased surveillance capability in high clutter environments and littoral areas. Funding in FY20-FY24 is provided to refurbish existing TL-29A array legs. Support equipment includes ancillary test sets, array headline and roll control systems, tow cables, and array leader cables.

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3				P-1 Line Item Number / Title: 2237 / SURTASS				Modification Number / Title: 2 / VG006 - TL-29A U.S. Twinline Arrays					
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: TL-29A Twinline Arrays				Modification Type: N/A				Related RDT&E PEs: 0204311N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
<i>Modification Item 1 of 1:</i> VG006 - TL-29A U.S. Twinline Arrays													
B Kits													
Recurring													
1.1.1) U.S. Twinline Arrays - NonOrganic ⁽²⁾	10 / 62.787	2 / 11.464	1 / 1.820	1 / 1.860	- / -	1 / 1.860	1 / 1.018	1 / 1.935	1 / 1.974	1 / 2.013	- / -	18 / 84.871	
<i>Subtotal: Recurring</i>	- / 62.787	- / 11.464	- / 1.820	- / 1.860	- / -	- / 1.860	- / 1.018	- / 1.935	- / 1.974	- / 2.013	- / 0.000	- / 84.871	
<i>Subtotal: VG006 - TL-29A U.S. Twinline Arrays</i>	10 / 62.787	2 / 11.464	1 / 1.820	1 / 1.860	- / -	1 / 1.860	1 / 1.018	1 / 1.935	1 / 1.974	1 / 2.013	- / -	18 / 84.871	
<i>Subtotal: Procurement, All Modification Items</i>	- / 62.787	- / 11.464	- / 1.820	- / 1.860	- / -	- / 1.860	- / 1.018	- / 1.935	- / 1.974	- / 2.013	- / 0.000	- / 84.871	
Installation													
<i>Modification Item 1 of 1:</i> VG006 - TL-29A U.S. Twinline Arrays	- / 0.900	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.900	
<i>Subtotal: Installation</i>	- / 0.900	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 0.900	
Total													
Total Cost (Procurement + Support + Installation)	63.687	11.464	1.820	1.860	0.000	1.860	1.018	1.935	1.974	2.013	0.000	85.771	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3										P-1 Line Item Number / Title: 2237 / SURTASS										Modification Number / Title: 2 / VG006 - TL-29A U.S. Twinline Arrays											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: VG006 - TL-29A U.S. Twinline Arrays																															
Manufacturer Information																															
Manufacturer Name: LOCKHEED MARTIN															Manufacturer Location: SYRACUSE, NY																
Administrative Leadtime <i>(in Months)</i> : 2															Production Leadtime <i>(in Months)</i> : 19																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates		Dec 2017				Dec 2018				Dec 2019				Dec 2020				Dec 2021				Dec 2022				Dec 2023					
Delivery Dates		Jul 2019				Jul 2020				Jul 2021				Jul 2022				Jul 2023				Jul 2024				Jul 2025					
Installation Information																															
Method of Implementation: AIT (Alteration Installation Team):: Installation Name: U.S. Twinline Arrays																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		8 / 0.900		- / -		2 / 0.000		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		10 / 0.900					
FY 2018		- / -		- / -		1 / 0.000		1 / 0.000		0 / 0.000		1 / 0.000		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / -					
FY 2019		- / -		- / -		- / -		1 / 0.000		0 / 0.000		1 / 0.000		- / -		- / -		- / -		- / -		- / -		0 / 0.000		1 / -					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		1 / 0.000		- / -		- / -		- / -		- / -		0 / 0.000		1 / -					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 0.000		- / -		- / -		- / -		0 / 0.000		1 / -					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 0.000		- / -		- / -		0 / 0.000		1 / -					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 0.000		0 / 0.000		1 / -		1 / -					
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 0.000		1 / -					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
Total		8 / 0.900		- / -		3 / 0.000		2 / 0.000		0 / 0.000		2 / 0.000		1 / 0.000		1 / 0.000		1 / 0.000		1 / 0.000		1 / 0.000		1 / 0.000		18 / 0.900					
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	8	-	-	-	-	-	-	-	3	-	-	-	2	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	1	1	18
Out	8	-	-	-	-	-	-	-	3	-	-	-	2	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	1	1	18
Footnotes: ⁽²⁾ The TL-29A Twinline is a shallow water variant of the common array produced by NAVSEA. The array consists of two shorter array lengths and array support equipment, and is designed for increased surveillance capability in high clutter environments and littoral areas. Support equipment procurement is for ancillary test sets, array headline and roll control systems, tow cable, and leader cables. Installation funding is not required for the support equipment. FY20-FY24 funds refurbishment of one (1) array leg per year, which is less costly than procurement of new arrays. Installation Remarks: Installation occurs on five T-AGOS platforms and a TASW SURTASS platform. Historically, an array is lost or severely damaged every 18-24 months. The arrays require constant refurbishment and/or parts replacement due to																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3	P-1 Line Item Number / Title: 2237 / SURTASS	Modification Number / Title: 2 / VG006 - TL-29A U.S. Twinline Arrays
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
the harsh environmental conditions sustained. Without a ready asset in theater, if an array is lost or damaged, a SURTASS ship cannot deploy and execute its mission. Future assets to be delivered are initially provided as ready assets, and installed as needed.		

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Exhibit P-3a, Individual Modification: PB 2020 Navy						Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3				P-1 Line Item Number / Title: 2237 / SURTASS				Modification Number / Title: 3 / VG006 - J-AOS			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	15.000	0.000	28.354	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	43.354
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	15.000	0.000	28.354	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	43.354
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	15.000	0.000	28.354	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	43.354
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>	-	-	-	-	-	-	-	-	-	-	-	-

Description:

New P-3A to break out the J-AOS TL-29A array requirements from the U.S. requirements.

The J-AOS TL-29A procurement costs are associated with upgrading to a new array type and array support infrastructure, including two complete towed arrays and associated tow hardware and dry end equipment. A third rotational pool array, modules, dry side equipment and support equipment procurement was moved from FY21 to FY19. A third J-AOS ship is being constructed with commissioning scheduled for FY21. The ship requires outfitting with a mission system with procurement of a TL-29A array system and associated tow hardware, dry end equipment and installation. The program is funded with both FMS and OPN, and the \$15M in FY17 and the \$8.754M in FY19 represent the U.S. share of the total cost of the J-AOS TL-29A upgrade program. The U.S. cost share for the outfitting of the new J-AOS platform (J-3) is \$19.6M. All installation costs are paid via FMS funds.

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3				P-1 Line Item Number / Title: 2237 / SURTASS						Modification Number / Title: 3 / VG006 - J-AOS			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: [No Model Specified]				Modification Type: N/A				Related RDT&E PEs: 02040311N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: VG006 - J-AOS													
B Kits													
Recurring													
1.1.1) J-AOS - NonOrganic	1 / 15.000	- / -	2 / 28.354	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 43.354	
Subtotal: Recurring	- / 15.000	- / -	- / 28.354	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 43.354	
Subtotal: VG006 - J-AOS	1 / 15.000	- / -	2 / 28.354	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 43.354	
Subtotal: Procurement, All Modification Items	- / 15.000	- / -	- / 28.354	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 43.354	
Installation													
Modification Item 1 of 1: VG006 - J-AOS	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	
Subtotal: Installation	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	
Total													
Total Cost (Procurement + Support + Installation)	15.000	0.000	28.354	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	43.354	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3										P-1 Line Item Number / Title: 2237 / SURTASS										Modification Number / Title: 3 / VG006 - J-AOS											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: VG006 - J-AOS																															
Manufacturer Information																															
Manufacturer Name: LOCKHEED MARTIN															Manufacturer Location: SYRACUSE, NY																
Administrative Leadtime (in Months): 2															Production Leadtime (in Months): 19																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates						Dec 2018																									
Delivery Dates						Jul 2020																									
Installation Information																															
Method of Implementation: AIT (Alteration Installation Team):: Installation Name: J-AOS																															
Installation Cost		Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total								
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)								
Prior Years		- / -	- / -		1 / 0.000		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		1 / -								
FY 2018		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2019		- / -	- / -		- / -		- / -		- / -		- / -		2 / 0.000		- / -		- / -		- / -		0 / 0.000		2 / -								
FY 2020		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2021		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2022		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2023		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2024		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
To Complete		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
Total		- / -	- / -		1 / 0.000		- / -		- / -		- / -		2 / 0.000		- / -		- / -		- / -		0 / 0.000		3 / -								
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	3
Out	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	3

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Exhibit P-3a, Individual Modification: PB 2020 Navy						Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3				P-1 Line Item Number / Title: 2237 / SURTASS				Modification Number / Title: 4 / VG006 - SURTASS Team Trainer			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	7.867	4.194	1.750	4.500	0.000	4.500	1.750	4.700	1.750	4.800	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	7.867	4.194	1.750	4.500	0.000	4.500	1.750	4.700	1.750	4.800	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	7.867	4.194	1.750	4.500	0.000	4.500	1.750	4.700	1.750	4.800	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The SURTASS Team Trainer (STT) provides SURTASS crews with three high fidelity synthetic and live playback training capabilities to support Home Port Training Periods (HPTP) and Pre-Deployment Certification Periods (PDCP). Each STT will receive a hardware tech refresh on a six-year cycle and receive a major software update installation on a two-year cycle, so that 3 STTs hardware tech refreshes and 9 major software installations would be performed over a given six-year period. Tech refresh and software updates for the STTs will continue on this cycle. The 4-7% procurement cost growth between FY18, FY20, FY22, and FY24 accounts for the additional STT capabilities incorporated to provide operators with the means to address more sophisticated threat targets and environments.

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3					P-1 Line Item Number / Title: 2237 / SURTASS					Modification Number / Title: 4 / VG006 - SURTASS Team Trainer			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: SURTASS Team Trainer				Modification Type: N/A				Related RDT&E PEs: 0204311N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	
Procurement													
<i>Modification Item 1 of 1: VG006 - SURTASS Team Trainer</i>													
<i>B Kits</i>													
<i>Recurring</i>													
1.1.1) SURTASS Team Trainer - NonOrganic	2 / 6.341	1 / 4.194	- / -	1 / 4.500	- / -	1 / 4.500	- / -	1 / 4.700	- / -	1 / 4.800	Continuing	Continuing	
<i>Subtotal: Recurring</i>	- / 6.341	- / 4.194	- / -	- / 4.500	- / -	- / 4.500	- / -	- / 4.700	- / -	- / 4.800	Continuing	Continuing	
<i>Subtotal: VG006 - SURTASS Team Trainer</i>	2 / 6.341	1 / 4.194	- / -	1 / 4.500	- / -	1 / 4.500	- / -	1 / 4.700	- / -	1 / 4.800	Continuing	Continuing	
<i>Subtotal: Procurement, All Modification Items</i>	- / 6.341	- / 4.194	- / -	- / 4.500	- / -	- / 4.500	- / -	- / 4.700	- / -	- / 4.800	Continuing	Continuing	
Installation													
<i>Modification Item 1 of 1: VG006 - SURTASS Team Trainer</i>	- / 1.526	- / 0.000	- / 1.750	- / 0.000	- / 0.000	- / 0.000	- / 1.750	- / 0.000	- / 1.750	- / 0.000	- / 1.750	- / 8.526	
<i>Subtotal: Installation</i>	- / 1.526	- / -	- / 1.750	- / -	- / -	- / -	- / 1.750	- / -	- / 1.750	- / -	- / 1.750	- / 8.526	
Total													
Total Cost (Procurement + Support + Installation)	7.867	4.194	1.750	4.500	0.000	4.500	1.750	4.700	1.750	4.800	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3					P-1 Line Item Number / Title: 2237 / SURTASS										Modification Number / Title: 4 / VG006 - SURTASS Team Trainer																
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:																					
Modification Item 1 of 1: VG006 - SURTASS Team Trainer																															
Manufacturer Information																															
Manufacturer Name: NSWC CD										Manufacturer Location: BETHESDA, MD																					
Administrative Leadtime (in Months): 2										Production Leadtime (in Months): 14																					
Dates		FY 2018			FY 2019			FY 2020			FY 2021			FY 2022			FY 2023			FY 2024											
Contract Dates		Jan 2018						Jan 2020						Jan 2022						Jan 2024											
Delivery Dates		Feb 2019						Feb 2021						Feb 2023						Feb 2025											
Manufacturer Name: Lockheed Martin										Manufacturer Location: VA																					
Administrative Leadtime (in Months): 2										Production Leadtime (in Months): 14																					
Dates		FY 2018			FY 2019			FY 2020			FY 2021			FY 2022			FY 2023			FY 2024											
Contract Dates		Jan 2018						Jan 2020						Jan 2022						Jan 2024											
Delivery Dates		Feb 2019						Feb 2021						Feb 2023						Feb 2025											
Installation Information																															
Method of Implementation: AIT (Alteration Installation Team):: Installation Name: SURTASS Team Trainer																															
Installation Cost		Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total																		
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																		
Prior Years		2 / 1.526	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 1.526																		
FY 2018		- / -	- / -	1 / 1.750	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	1 / 1.750																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	1 / 1.750	- / -	- / -	- / -	0 / 0.000	1 / 1.750																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 1.750	- / -	0 / 0.000	1 / 1.750																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2024		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 1.750	1 / 1.750																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		2 / 1.526	- / -	1 / 1.750	- / -	- / -	- / -	1 / 1.750	- / -	1 / 1.750	- / -	1 / 1.750	6 / 8.526																		
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	2	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	6
Out	2	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	1	6

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Exhibit P-3a, Individual Modification: PB 2020 Navy						Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3				P-1 Line Item Number / Title: 2237 / SURTASS				Modification Number / Title: 6 / VG007 - Field Changes/Modifications			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	13.321	9.470	2.563	4.131	0.000	4.131	3.815	2.013	3.885	2.059	0.000	41.257
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	13.321	9.470	2.563	4.131	0.000	4.131	3.815	2.013	3.885	2.059	0.000	41.257
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	13.321	9.470	2.563	4.131	0.000	4.131	3.815	2.013	3.885	2.059	0.000	41.257
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Field Changes/Modifications for correction of deficiencies identified by Fleet use, array support, communications equipment and replacement of aging/unsupportable equipment. Additional FY19-FY23 funding will facilitate transition to an upgraded command and control system, including installation of the Consolidated Afloat Network Enterprise System (CANES). Other aging End-of-life systems, including Global Command and Control System-Maritime (GCCS-M), UHF Line-of-sight Satellite (LOS/SAT), and ship's gyros will need to be replaced in order to ensure continuity of operations should the primary acoustic path to shore become inoperable.

Cost growth is reflective of funding for C4I Modernization added in POM-18. Costs for individual C4I systems being procured are varied, resulting in the variability in individual unit costs across the fiscal years, with the primary procurements occurring in FY18.

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3				P-1 Line Item Number / Title: 2237 / SURTASS						Modification Number / Title: 6 / VG007 - Field Changes/Modifications			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: Field Changes/ Modifications				Modification Type: N/A				Related RDT&E PEs: 0204311N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	
Procurement													
<i>Modification Item 1 of 1:</i> VG007 - Field Changes/ Modifications													
B Kits													
Recurring													
1.1.1) Field Changes/Modifications - NonOrganic	73 / 8.978	5 / 9.149	5 / 2.157	5 / 3.754	- / -	5 / 3.754	5 / 3.468	5 / 1.513	5 / 3.385	5 / 1.559	- / -	108 / 33.963	
<i>Subtotal: Recurring</i>	- / 8.978	- / 9.149	- / 2.157	- / 3.754	- / -	- / 3.754	- / 3.468	- / 1.513	- / 3.385	- / 1.559	- / 0.000	- / 33.963	
<i>Subtotal: VG007 - Field Changes/Modifications</i>	73 / 8.978	5 / 9.149	5 / 2.157	5 / 3.754	- / -	5 / 3.754	5 / 3.468	5 / 1.513	5 / 3.385	5 / 1.559	- / -	108 / 33.963	
<i>Subtotal: Procurement, All Modification Items</i>	- / 8.978	- / 9.149	- / 2.157	- / 3.754	- / -	- / 3.754	- / 3.468	- / 1.513	- / 3.385	- / 1.559	- / 0.000	- / 33.963	
Installation													
<i>Modification Item 1 of 1:</i> VG007 - Field Changes/ Modifications	- / 4.343	- / 0.321	- / 0.406	- / 0.377	- / 0.000	- / 0.377	- / 0.347	- / 0.500	- / 0.500	- / 0.500	- / 0.000	- / 7.294	
<i>Subtotal: Installation</i>	- / 4.343	- / 0.321	- / 0.406	- / 0.377	- / -	- / 0.377	- / 0.347	- / 0.500	- / 0.500	- / 0.500	- / 0.000	- / 7.294	
Total													
Total Cost (Procurement + Support + Installation)	13.321	9.470	2.563	4.131	0.000	4.131	3.815	2.013	3.885	2.059	0.000	41.257	

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Exhibit P-3a, Individual Modification: PB 2020 Navy							Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3				P-1 Line Item Number / Title: 2237 / SURTASS				Modification Number / Title: 6 / VG007 - Field Changes/Modifications				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Modification Item 1 of 1: VG007 - Field Changes/Modifications												
Manufacturer Information												
Manufacturer Name: SSC PAC							Manufacturer Location: San Diego, CA					
Administrative Leadtime (in Months): 2							Production Leadtime (in Months): 10					
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates	Nov 2017	Nov 2018	Nov 2019	Nov 2020	Nov 2021	Nov 2022	Nov 2023					
Delivery Dates	Sep 2018	Sep 2019	Sep 2020	Sep 2021	Sep 2022	Sep 2023	Sep 2024					
Manufacturer Name: SSC LANT							Manufacturer Location: Charleston, SC					
Administrative Leadtime (in Months): 2							Production Leadtime (in Months): 10					
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates	Nov 2017	Nov 2018	Nov 2019	Nov 2020	Nov 2021	Nov 2022	Nov 2023					
Delivery Dates	Sep 2018	Sep 2019	Sep 2020	Sep 2021	Sep 2022	Sep 2023	Sep 2024					
Manufacturer Name: Lockheed Martin							Manufacturer Location: VA					
Administrative Leadtime (in Months): 2							Production Leadtime (in Months): 10					
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates	Nov 2017	Nov 2018	Nov 2019	Nov 2020	Nov 2021	Nov 2022	Nov 2023					
Delivery Dates	Sep 2018	Sep 2019	Sep 2020	Sep 2021	Sep 2022	Sep 2023	Sep 2024					
Installation Information												
Method of Implementation: AIT (Alteration Installation Team):: Installation Name: Field Changes/Modifications												
Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	73 / 4.343	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	73 / 4.343
FY 2018	- / -	5 / 0.321	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	5 / 0.321
FY 2019	- / -	- / -	5 / 0.406	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	5 / 0.406
FY 2020	- / -	- / -	- / -	5 / 0.377	0 / 0.000	5 / 0.377	- / -	- / -	- / -	- / -	0 / 0.000	5 / 0.377
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.347	- / -	- / -	- / -	0 / 0.000	5 / 0.347
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.500	- / -	- / -	0 / 0.000	5 / 0.500
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.500	- / -	0 / 0.000	5 / 0.500
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.500	0 / 0.000	5 / 0.500
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	73 / 4.343	5 / 0.321	5 / 0.406	5 / 0.377	0 / 0.000	5 / 0.377	5 / 0.347	5 / 0.500	5 / 0.500	5 / 0.500	0 / 0.000	108 / 7.294

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Exhibit P-3a, Individual Modification: PB 2020 Navy																				Date: March 2019												
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3										P-1 Line Item Number / Title: 2237 / SURTASS										Modification Number / Title: 6 / VG007 - Field Changes/Modifications												
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																	
Modification Item 1 of 1: VG007 - Field Changes/Modifications																																
Installation Information																																
Method of Implementation: AIT (Alteration Installation Team):: Installation Name: Field Changes/Modifications																																
Installation Schedule																																
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot	
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
In	73	-	-	-	5	-	-	-	5	-	-	-	5	-	-	-	5	-	-	-	5	-	-	-	5	-	-	-	5	-	-	108
Out	73	-	-	-	5	-	-	-	5	-	-	-	5	-	-	-	5	-	-	-	5	-	-	-	5	-	-	-	5	-	-	108

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 4: Electronic Warfare Equipment							P-1 Line Item Number / Title: 2312 / AN/SLQ-32					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: 0204228N				Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1,019.474	233.237	366.147	420.154	0.000	420.154	546.922	415.784	399.808	347.341	2,359.812	6,108.679
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,019.474	233.237	366.147	420.154	0.000	420.154	546.922	415.784	399.808	347.341	2,359.812	6,108.679
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1,019.474	233.237	366.147	420.154	0.000	420.154	546.922	415.784	399.808	347.341	2,359.812	6,108.679
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	11.976	9.903	4.289	-	4.289	5.082	9.253	8.772	9.819	Continuing	Continuing
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:
 The FY 2020 funding request was reduced by \$4.000 million to account for the availability of prior year execution balances.

The AN/SLQ-32(V) provides a family of modular ship born electronic warfare equipment which is installed on all surface combatants, aircraft carriers, amphibious ships and auxiliaries in the surface Navy. The system provides early detection, analysis, threat warning and protection from anti-ship missiles. The OPN 2312 budget supports the AN/SLQ-32(V)6 and AN/SLQ-32(V)7 variants through procurement and installation. The SEWIP Block 1B3 and Block 2 units are installed conjunctively and comprise the AN/SLQ-32(V)6 system. The SEWIP Block 1B3, Block 2 and Block 3 units are installed conjunctively and comprise the AN/SLQ-32(V)7 system.

TC056: SURFACE ELECTRONIC WARFARE (EW) IMPROVEMENTS BLOCK 1
 The Surface Electronic Warfare (EW) Improvement Program (SEWIP) will develop a modern, highly capable family of EW systems by block upgrade of the current AN/SLQ-32 system that is robust in detecting and countering current and future threats and will extend the service life of AN/SLQ3-2(V) systems. Funding procures upgrades to the current AN/SLQ-32 system.

BLOCK 1B1 - SMALL SHIP ELECTRONIC MEASURES SYSTEM (SSESM):
 Small Ship Electronic Support Measures System (SSESM) provides Specific Emitter Identification (SEI) capability to various ships/ship classes in a stand-alone configuration. Tech Refresh funding is provided to address obsolescence and reliability issues presenting affecting fielded systems.

BLOCK 1B2 - FEDERATED SPECIFIC EMITTER IDENTIFICATION (SEI):
 The federated SEI, consisting of SEI hardware plus an ICAD modification kit, fully integrates SEI functionality with the ICAD/Q-70 console. Tech Refresh funding is provided to address obsolescence and reliability issues affecting fielded systems.

BLOCK 1B3 - HIGH GAIN HIGH SENSITIVITY (HGHS):
 High Gain High Sensitivity (HGHS) Adjunct Sensor is a critical improvement for threat correlation, situational awareness, and extending the battle space. Engineering Change Proposal (ECP) funding is provided to support changes resulting from software and hardware trouble reports from production, shipboard installations and/or land based testing. Tech Refresh funding is provided to address obsolescence and reliability issues affecting fielded systems. The SEWIP Block 1B3 and Block 2 units are installed conjunctively to compose the AN/SLQ-32(V)6 system. The SEWIP Block 1B3, Block 2 and Block 3 units are installed conjunctively to compose the AN/SLQ-32(V)7 system. The SEWIP Block 1B3 P-3a funding has been broken out to separately show systems installed with SEWIP Block 2 (FMP Block 1B3 for SLQ-32

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 4: Electronic Warfare Equipment		P-1 Line Item Number / Title: 2312 / AN/SLQ-32
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: 0204228N	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
(V)6) and systems installed with SEWIP Block 2 and Block 3 (FMP Block 1B3 for SLQ-32 (V)7). For FMP Block 1B3 systems for SLQ-32 (V)7, production lead times for Block 1B3 are 15 months and these systems are then delivered to the Block 3 Integration Facility, NSWC Crane, 6 months (180 days) prior to delivery as part of an integrated SLQ-32 (V)7 system. The 180 days is required for integration and testing with SEWIP Block 3 at the NSCW Crane Integration Facility. TC059: SURFACE ELECTRONIC WARFARE (EW) IMPROVEMENTS BLOCK 2 Block 2 will provide AN/SLQ-32(V) an upgraded antenna, receiver, and combat systems interface. The upgrades will pace the threat, improve detection and accuracy and mitigate Electromagnetic Interference (EMI). The Block 2 hardware cost includes the SEWIP Block 2 ES system, Blanker-Video Mixer Group (AN/SLA-10D), Common Processing System, Common Display System, Liquid Conditioning Unit and Data Adaptation Processor. The SEWIP Block 1B3 and Block 2 units are installed conjunctively and compose the AN/SLQ-32(V)6 system. The SEWIP Block 1B3, Block 2 and Block 3 units are installed conjunctively to compose the AN/SLQ-32(V)7 system. The SEWIP Block 2 P-3a funding has been broken out to separately show systems installed with SEWIP Block 1B3 (FMP Block 2 for SLQ-32 (V)6 and systems installed with SEWIP Block 1B3 and Block 3 (FMP Block 2 for SLQ-32 (V)7). For FMP Block 2 systems for SLQ-32 (V)7, production lead times for Block 2 are 17 months and these systems are then delivered to the system integrator, NSWC Crane, 6 months (180 days) prior to delivery as part of an integrated SLQ-32 (V)7 system. The 180 days is required for integration and testing with SEWIP Block 3 at the NSWC Crane Integration Facility. TC060: SURFACE ELECTRONIC WARFARE (EW) IMPROVEMENTS BLOCK 3: Block 3 will provide an Electronic Attack (EA) capability improvement required for the AN/SLQ-32(V) system to keep pace with the threat. SEWIP Block 3 will provide a common EA capability to surface combatants (CVN, DDG, LHD) outfitted with the active variant of the AN/SLQ-32, mainly the (V)3 and (V)4, as well as select new-construction platforms. The program builds on the EW Electronic Support (ES) capability delivered by Blocks 1 and 2. Development Status/Major Milestones are: Long Lead Material (LLM) was procured Q4 FY17, Milestone C Low Rate Initial Production (LRIP) Q1 FY19, IOT&E Q4 FY22, FRP is Q3 FY23. The SEWIP Block 1B3, Block 2 and Block 3 units compose the AN/SLQ-32(V)7 system. This may be accomplished as a conjunctive installation with all SEWIP components installed at the same time or as a non-conjunctive installation by installing the SEWIP Block 3 on a ship with SEWIP Block 1B3 and 2 previously installed. Block 3T (AN/SLQ-59) will provide an Electronic Attack (EA) capability improvement required for the AN/SLQ32(V) system to keep pace with the threat. Block 3T provides initial, limited interim capability of a focused application of the Naval Research Lab (NRL) Transportable EW Module (TEWM) system to meet an urgent operational needs (UON) statement. TC5IN: FMP INSTALLATIONS Shipboard installation of AN/SLQ-32(V) ECP/Field Changes and the Surface EW Improvements Blocks 1, 2 and 3. TC6IN: NON-FMP INSTALLATIONS Installation of AN/SLQ-32(V) ECP/Field Changes and the Surface EW Improvements Blocks 1, 2 and 3 at Shore Site Facilities. [P40A / TC956 - USCG WMSL AN/SLQ-32 B(V)2]: TC956 - UNITED STATES COAST GUARD (USCG) WMSL AN/SLQ-32B(V)2 This supports USCG Maritime Security Cutter, Large (WMSL) 758 and 759 with AN/SLQ-32B(V)2 systems and is in accordance with the requirements of OPNAVINST 4000.79A for Navy Type - Navy Owned (NTNO) material. NTNO material is procured by the Navy and installed by the USCG. [P40A / TC959 - SEWIP BLOCK 2 LITE USCG SHIPS]: TC959 - SEWIP BLOCK 2 LITE FOR UNITED STATES COAST GUARD (USCG) SHIPS: This details the requirements for SEWIP Block 1B2 and SEWIP Lite systems in support of USCG ships, including Offshore Patrol Cutter(OPC), WMSL and Heavy Polar Ice Breaker (HPIB). OPNAVINST 4000.79A for Navy Type - Navy Owned (NTNO) material applies. For forward fit, USN is responsible for equipment procurement & USCG is responsible for the install. For back fit, the USN is responsible for both. Block 2 Lite is a variant of the Block 2 specifically tailored for the needs of small ships, such as Littoral Combat Ship (LCS), OPC, WMSL and HPIB to address fleet emergent needs for a robust, capable, and sustainable EW system that meets the space, weight and power limitations of these smaller ships. [P40A / SEWIP BLOCK 1B2 FOR USCG SHIP FORWARD FIT]: Notes:		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy			Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 4: Electronic Warfare Equipment		P-1 Line Item Number / Title: 2312 / AN/SLQ-32	
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: 0204228N	Other Related Program Elements: N/A	
Line Item MDAP/MAIS Code: N/A			
(1) Cost increase since PB19 in FY19 and FY20 is a result of redesign due to multiple obsolescence issues. [P40A / SEWIP BLOCK 2 LITE USCG SHORE]: Note: This line supports SEWIP Block 2 Lite systems provide as Navy Type - Navy Owned to the USCG in accordance with OPNAVINST 4000.79A for NTNO material. [P40A / SEWIP BLOCK 2 LITE USCG SHORE INSTALL]: Note: Shore Site Installs will be funded through the SEWIP Program. [P40A / TC961 - SOLID STATE PRODUCT SUPPORT INTEGRATOR (PSI)]: TC961 - SOLID STATE PRODUCT SUPPORT INTEGRATOR (PSI) The Solid State Product Support Integrator (PSI) for Radio Frequency (RF) funding line supports the stand-up of this capability for select components of SEWIP Block 3. The Solid State PSI will provide engineering analysis and product support strategies as well as test and repair capabilities for the high band (HB) and low band (LB) transmit (Tx) and receive (Rx) components of SEWIP Block 3. Solid State PSI funding supports the procurements (investment expense) of HB and LB Tx and Rx module test and repair equipment in FY20-24. The Solid State PSI capability is shared with AMDR. Note: (1) TC961 Solid State PSI Procurements provide the following, Test Fixture (FY20), Test Set (FY21), Repair Equipment (FY22), and Calibration Equipment (FY23). [P40A / TC960 - MULTIPURPOSE RECONFIGURABLE TRAINING SYSTEM]: TC960 - MULTIPURPOSE RECONFIGURABLE TRAINING SYSTEM (MRTS) The Multipurpose Reconfigurable Training System (MRTS) provides support for Fleet maintenance training for SEWIP Block 2 and SEWIP Block 3. MRTS simulates the tactical system's components and subcomponents necessary for training without requiring the procurement of a full SEWIP Block 1B3, Block 2, or Block 3 system.			

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy			Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 4: Electronic Warfare Equipment			P-1 Line Item Number / Title: 2312 / AN/SLQ-32		
ID Code (A=Service Ready, B=Not Service Ready): A		Program Elements for Code B Items: 0204228N		Other Related Program Elements: N/A	
Line Item MDAP/MAIS Code: N/A					

Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	AN/SLQ-32	P-5a			- / 10.955	- / 11.336	- / 15.676	- / 30.402	- / -	- / 30.402
P-3a	1 / TC056 - BLOCK 1B1 SSES (SHIPALT/AIT)				- / 43.826	- / 0.806	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	2 / TC056 - BLOCK 1B2 FEDERATED SEI (SHIPALT/AIT)				- / 55.711	- / 2.468	- / 1.577	- / 1.540	- / 0.000	- / 1.540
P-3a	3 / TC056 - BLOCK 1B3 HGHS (SHIPALT/AIT)				- / 86.900	- / 16.866	- / 24.378	- / 26.210	- / 0.000	- / 26.210
P-3a	4 / TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM (SHIPALT/AIT)				- / 670.607	- / 150.005	- / 221.645	- / 248.641	- / 0.000	- / 248.641
P-3a	5 / TC060 - BLOCK 3 ELECTRONIC ATTACK (EA) SYSTEM (SHIPALT/AIT)				- / 28.909	- / 43.827	- / 102.871	- / 113.361	- / 0.000	- / 113.361
P-3a	6 / TC060 - BLOCK 3T SURFACE EW IMPROVEMENTS EA System (SHIPALT/AIT)				- / 122.566	- / 7.929	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-40	Total Gross/Weapon System Cost				- / 1,019.474	- / 233.237	- / 366.147	- / 420.154	- / 0.000	- / 420.154

Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	AN/SLQ-32	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / TC056 - BLOCK 1B1 SSES (SHIPALT/AIT)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 44.632
P-3a	2 / TC056 - BLOCK 1B2 FEDERATED SEI (SHIPALT/AIT)				- / 4.026	- / 2.317	- / 2.368	- / 1.846	- / 4.817	- / 76.670
P-3a	3 / TC056 - BLOCK 1B3 HGHS (SHIPALT/AIT)				- / 30.626	- / 25.997	- / 14.753	- / 8.104	- / 25.718	- / 259.552
P-3a	4 / TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM (SHIPALT/AIT)				- / 263.996	- / 187.424	- / 77.542	- / 37.652	- / 243.081	- / 2,100.593
P-3a	5 / TC060 - BLOCK 3 ELECTRONIC ATTACK (EA) SYSTEM (SHIPALT/AIT)				- / 212.711	- / 167.092	- / 268.875	- / 273.316	- / 1,931.674	- / 3,142.636
P-3a	6 / TC060 - BLOCK 3T SURFACE EW IMPROVEMENTS EA System (SHIPALT/AIT)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 130.495
P-40	Total Gross/Weapon System Cost				- / 546.922	- / 415.784	- / 399.808	- / 347.341	- / 2,359.812	- / 6,108.679

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy																Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4							P-1 Line Item Number / Title: 2312 / AN/SLQ-32							Aggregated Items Title: AN/SLQ-32							
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total			
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	
1) TC956 - USCG WMSL AN/SLQ-32 B(V)2																					
1.1) WMSL 758 AN/SLQ-32 B(V)2 ^(†)	A		-	-	-	2,513K	1	2.513	-	-	-	-	-	-	-	-	-	-	-	-	
1.2) WMSL 759 AN/SLQ-32 B(V)2 ^(†)	A		-	-	-	-	-	-	2,543K	1	2.543	-	-	-	-	-	-	-	-	-	
Subtotal: 1) TC956 - USCG WMSL AN/SLQ-32 B(V)2			-	-	0.000	-	-	2.513	-	-	2.543	-	-	-	-	-	-	-	-	-	
2) TC959 - SEWIP BLOCK 2 LITE USCG SHIPS																					
2.1) SEWIP BLOCK 1B2 FOR USCG SHIP FORWARD FIT ^(†)	A		-	-	-	378,000.00	1	0.378	456,000.00	1	0.456	470,000.00	3	1.410	-	-	-	470,000.00	3	1.410	
2.2) SEWIP BLOCK 1B2 USCG SHORE	A		370,000.00	2	0.740	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2.3) SEWIP BLOCK 2 LITE USCG SHIP FORWARD FIT ^(†)	A		-	-	-	4,693K	1	4.693	5,600K	1	5.600	5,618K	3	16.854	-	-	-	5,618K	3	16.854	
2.4) SEWIP BLOCK 2 LITE USCG SHORE	A		4,693K	2	9.386	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2.5) SEWIP BLOCK 2 LITE USCG SHORE INSTALL	A		414,500.00	2	0.829	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2.6) SEWIP BLOCK 1B2 LITE USCG WMSL BACK FIT ^(†)	A		-	-	-	-	-	-	-	-	-	470,000.00	1	0.470	-	-	-	470,000.00	1	0.470	
2.8) SEWIP BLOCK 2 LITE USCG WMSL BACK FIT ^(†)	A		-	-	-	-	-	-	-	-	-	5,618K	1	5.618	-	-	-	5,618K	1	5.618	
2.10) PRODUCTION SUPPORT	A		-	-	-	-	-	-	-	-	0.864	-	-	0.886	-	-	-	-	-	0.886	
2.11) ENGINEERING CHANGE PROPOSALS (ECPs)	A		-	-	-	-	-	-	-	-	-	-	-	0.953	-	-	-	-	-	0.953	
2.12) INCO SPARES	A		-	-	-	-	-	-	-	-	0.911	-	-	1.023	-	-	-	-	-	1.023	
Subtotal: 2) TC959 - SEWIP BLOCK 2 LITE USCG SHIPS			-	-	10.955	-	-	5.071	-	-	7.831	-	-	27.214	-	-	-	-	-	27.214	
3) TC961 - SOLID STATE PRODUCT SUPPORT INTEGRATOR (PSI)																					
3.1) HIGH BAND TRANSMIT AND RECEIVE EQUIPMENT ^(†)	A		-	-	-	-	-	-	-	-	-	1,067K	1	1.067	-	-	-	1,067K	1	1.067	
3.2) LOW BAND TRANSMIT AND RECEIVE EQUIPMENT ^(†)	A		-	-	-	-	-	-	-	-	-	711,000.00	1	0.711	-	-	-	711,000.00	1	0.711	

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4							P-1 Line Item Number / Title: 2312 / AN/SLQ-32								Aggregated Items Title: AN/SLQ-32					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
Subtotal: 3) TC961 - SOLID STATE PRODUCT SUPPORT INTEGRATOR (PSI)			-	-	0.000	-	-	-	-	-	-	-	-	1.778	-	-	-	-	-	1.778
4) TC960 - MULTIPURPOSE RECONFIGURABLE TRAINING SYSTEM																				
4.1) SEWIP BLOCK 2 MRTS UNITS ^(†)	A		-	-	-	-	-	-	600,000.00	2	1.200	-	-	-	-	-	-	-	-	-
4.2) SEWIP BLOCK 3 MRTS UNITS ^(†)	A		-	-	-	-	-	-	-	-	-	705,000.00	2	1.410	-	-	-	705,000.00	2	1.410
4.3) SEWIP BLOCK 2 MRTS SOFTWARE NRE	A		-	-	-	-	-	3.752	-	-	-	-	-	-	-	-	-	-	-	-
4.4) SEWIP BLOCK 3 MRTS SOFTWARE NRE	A		-	-	-	-	-	-	-	-	4.102	-	-	-	-	-	-	-	-	-
Subtotal: 4) TC960 - MULTIPURPOSE RECONFIGURABLE TRAINING SYSTEM			-	-	0.000	-	-	3.752	-	-	5.302	-	-	1.410	-	-	-	-	-	1.410
Total			-	-	10.955	-	-	11.336	-	-	15.676	-	-	30.402	-	-	-	-	-	30.402

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4			P-1 Line Item Number / Title: 2312 / AN/SLQ-32						Aggregated Items: AN/SLQ-32			
Item Number / Title [DODIC]	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1) TC956 - USCG WMSL AN/SLQ-32 B(V)2												
1.1) WMSL 758 AN/SLQ-32 B(V)2		2018	Crane Organic / Crane, Indiana	C / FFP	None	Nov 2017	Sep 2018	1	2,513K	Y		Mar 2014
1.2) WMSL 759 AN/SLQ-32 B(V)2		2019	Crane Organic / Crane, Indiana	C / FFP	None	Nov 2018	Sep 2019	1	2,543K	Y		Mar 2014
2) TC959 - SEWIP BLOCK 2 LITE USCG SHIPS												
2.1) SEWIP BLOCK 1B2 FOR USCG SHIP FORWARD FIT		2018 ⁽¹⁾	General Dynamics AIC / Fair Lakes, VA	C / FFP	NSWC Crane	Mar 2019	May 2020	1	378,000.00	Y		Mar 2016
2.1) SEWIP BLOCK 1B2 FOR USCG SHIP FORWARD FIT		2019	General Dynamics AIC / Fair Lakes, VA	C / FFP	NSWC Crane	Mar 2019	Jun 2020	1	456,000.00	Y		Mar 2016
2.1) SEWIP BLOCK 1B2 FOR USCG SHIP FORWARD FIT		2020	General Dynamics AIC / Fair Lakes, VA	C / FFP	NSWC Crane	Feb 2020	Apr 2021	3	470,000.00	Y		Mar 2016
2.3) SEWIP BLOCK 2 LITE USCG SHIP FORWARD FIT		2018	Lockheed Martin / Syracuse, NY	C / FFP	Washington Navy Yard	Mar 2018	Mar 2019	1	4,693K	Y		Mar 2015
2.3) SEWIP BLOCK 2 LITE USCG SHIP FORWARD FIT		2019	Lockheed Martin / Syracuse, NY	C / FFP	Washington Navy Yard	Dec 2018	Dec 2019	1	5,600K	Y		Mar 2015
2.3) SEWIP BLOCK 2 LITE USCG SHIP FORWARD FIT		2020	Lockheed Martin / Syracuse, NY	C / FFP	Washington Navy Yard	Mar 2020	Mar 2021	3	5,618K	Y		
2.6) SEWIP BLOCK 1B2 LITE USCG WMSL BACK FIT		2020	General Dynamics AIC / Fair Lakes, VA	C / FFP	NSWC Crane	Feb 2020	Apr 2021	1	470,000.00	Y		Mar 2016
2.8) SEWIP BLOCK 2 LITE USCG WMSL BACK FIT		2020	Lockheed Martin / Syracuse, NY	C / FFP	Washington Navy Yard	Mar 2020	Mar 2021	1	5,618K	Y		
3) TC961 - SOLID STATE PRODUCT SUPPORT INTEGRATOR (PSI)												
3.1) HIGH BAND TRANSMIT AND RECEIVE EQUIPMENT		2020	Crane Organic / Crane, Indiana	C / FFP	NSWC Crane	Jan 2020	Feb 2021	1	1,067K	Y		
3.2) LOW BAND TRANSMIT AND RECEIVE EQUIPMENT		2020	Crane Organic / Crane, Indiana	C / FFP	NSWC Crane	Jan 2020	Feb 2021	1	711,000.00	Y		
4) TC960 - MULTIPURPOSE RECONFIGURABLE TRAINING SYSTEM												
4.1) SEWIP BLOCK 2 MRTS UNITS		2019 ⁽²⁾	ProActive Technologies / Oviedo, FL	C / FFP	NAWCTSD Orlando	Feb 2019	Aug 2019	2	600,000.00	Y		Dec 2017
4.2) SEWIP BLOCK 3 MRTS UNITS		2020	ProActive Technologies / Oviedo, FL	C / FFP	NAWCTSD Orlando	Feb 2020	Aug 2020	2	705,000.00	Y		Dec 2017
Footnotes: ⁽¹⁾ TC959 - SEWIP BLOCK 2 LITE FOR USCG OPC SHIPS: This details the requirements for SEWIP Block 1B2 and SEWIP Lite systems in support of USCG OPC, WMSL and HPIB ships. OPNAVINST 4000.79A for Navy Type - Navy Owned (NTNO) material applies. Block 2 Lite is a variant of the Block 2 specifically tailored for the needs of small ships, such as LCS, OPC, WMSL and HPIB to address fleet emergent needs for a robust, capable, and sustainable EW system that meets the space, weight and power limitations of these smaller ships. Hardware quantity increase from PB19 is due to the addition of requirements for WMSL forward fit and back fit, and HPIB forward fit in FY20-FY23. Unit cost increase in FY19 and beyond is due to the requirement to add CPS/CDS and AN/SLA-10D to support SEWIP Lite systems. ⁽²⁾ TC960 - MULTIPURPOSE RECONFIGURABLE TRAINING SYSTEM (MRTS): The Multipurpose Reconfigurable Training System (MRTS) provides support for Fleet maintenance training for SEWIP Block 2 and SEWIP Block 3. MRTS simulates the tactical system's components and subcomponents necessary for training without requiring the procurement of a full SEWIP Block 1B3, Block 2, or Block 3 system.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4				P-1 Line Item Number / Title: 2312 / AN/SLQ-32				Modification Number / Title: 1 / TC056 - BLOCK 1B1 SSES				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	43.826	0.806	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	44.632
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	43.826	0.806	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	44.632
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	43.826	0.806	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	44.632
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Small Ship Electronic Support Measures System (SSES) provides Specific Emitter Identification (SEI) capability to various ships/ship classes in a stand-alone configuration. Tech Refresh funding is provided to address obsolescence and reliability issues affecting fielded systems.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4					P-1 Line Item Number / Title: 2312 / AN/SLQ-32					Modification Number / Title: 1 / TC056 - BLOCK 1B1 SSES			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: TC056 SURFACE EW IMPROVEMENTS BLOCK 1: BLOCK 1B1 - SSES					Modification Type: SHIPALT/AIT					Related RDT&E PEs:			
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	
Procurement													
<i>Modification Item 1 of 1:</i> TC056 - BLOCK 1B1 SSES													
B Kits													
Recurring													
1.1.1) CNSG EQUIPMENT - NonOrganic ⁽³⁾	15 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	15 / 0.000	
1.1.2) FMP SHIP UNITS (Field Change) - NonOrganic	122 / 18.345	44 / 0.132	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	166 / 18.477	
<i>Subtotal: Recurring</i>	- / 18.345	- / 0.132	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 18.477	
<i>Subtotal: TC056 - BLOCK 1B1 SSES</i>	137 / 18.345	44 / 0.132	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	181 / 18.477	
<i>Subtotal: Procurement, All Modification Items</i>	- / 18.345	- / 0.132	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 18.477	
Support (All Modification Items)													
2.1) Production Support	- / 8.704	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 8.704	
2.2) Tech Refresh ⁽⁴⁾	- / 3.479	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 3.479	
<i>Subtotal: Support</i>	- / 12.183	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 12.183	
Installation													
<i>Modification Item 1 of 1:</i> TC056 - BLOCK 1B1 SSES	- / 13.298	- / 0.674	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 13.972	
<i>Subtotal: Installation</i>	- / 13.298	- / 0.674	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 13.972	
Total													
Total Cost (Procurement + Support + Installation)	43.826	0.806	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	44.632	

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Exhibit P-3a, Individual Modification: PB 2020 Navy											Date: March 2019																				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4										P-1 Line Item Number / Title: 2312 / AN/SLQ-32										Modification Number / Title: 1 / TC056 - BLOCK 1B1 SSES											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: TC056 - BLOCK 1B1 SSES																															
Manufacturer Information																															
Manufacturer Name: General Dynamics AIS														Manufacturer Location: Fair Lakes VA																	
Administrative Leadtime (in Months): 1														Production Leadtime (in Months): 3																	
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates		Jan 2018																													
Delivery Dates		Apr 2018																													
Installation Information																															
Method of Implementation: SHIPALT/AIT:: Installation Name: CNSG EQUIPMENT																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		15 / 2.206		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		15 / 2.206					
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
Total		15 / 2.206		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		15 / 2.206					
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15
Out	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15
Method of Implementation: SHIPALT/AIT:: Installation Name: FMP SHIP UNITS (Field Change)																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		68 / 11.092		54 / 0.371		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		122 / 11.463					

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4	P-1 Line Item Number / Title: 2312 / AN/SLQ-32	Modification Number / Title: 1 / TC056 - BLOCK 1B1 SSES

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:

Modification Item 1 of 1: TC056 - BLOCK 1B1 SSES

Installation Information

Method of Implementation: SHIPALT/AIT:: Installation Name: FMP SHIP UNITS (Field Change)

Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
FY 2018	- / -	44 / 0.303	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	44 / 0.303
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	68 / 11.092	98 / 0.674	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	166 / 11.766

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	68	-	17	37	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	166
Out	68	-	-	17	37	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	166

Footnotes:

⁽³⁾ Fifteen (15) units procured by Chief Naval Security Group (CNSG)

⁽⁴⁾ Additional Tech Refresh procurements were required in FY16-FY18 to implement tech refresh changes. The Tech Refresh hardware consists of circuit cards and an Operating System update. The tech refresh applies to all in-service CG, DDG, and Amphibious ships with SEI systems (114 ships).

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4					P-1 Line Item Number / Title: 2312 / AN/SLQ-32					Modification Number / Title: 2 / TC056 - BLOCK 1B2 FEDERATED SEI		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	55.711	2.468	1.577	1.540	0.000	1.540	4.026	2.317	2.368	1.846	4.817	76.670
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	55.711	2.468	1.577	1.540	0.000	1.540	4.026	2.317	2.368	1.846	4.817	76.670
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	55.711	2.468	1.577	1.540	0.000	1.540	4.026	2.317	2.368	1.846	4.817	76.670
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: The federated SEI, consisting of SEI hardware plus an ICAD modification kit, fully integrates SEI functionality with the ICAD/Q-70 console. Tech Refresh funding is provided to address obsolescence and reliability issues affecting fielded systems. Notes: (1) Unit cost increases in FY19 and FY20 since PB19 is a result of redesign due to multiple obsolescence issues. (2) For FMP Block 1B2 systems, the production lead time is 14 months and these systems are then delivered to the system integrator, NSWC Crane, 6 months prior to the start of the installation availability (A-180 days) where integration, testing, and preparation for shipment is conducted. 135 days are required for integration and testing of the SEWIP Blocks 1B2, 1B3 and 2 into an SLQ-32(V)6 system, preparation for shipment (15 days) and delivery to the shipyard 30 days prior to the start of the availability (A-30).												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4				P-1 Line Item Number / Title: 2312 / AN/SLQ-32						Modification Number / Title: 2 / TC056 - BLOCK 1B2 FEDERATED SEI			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: TC056 SURFACE EW IMPROVEMENTS BLOCK 1: BLOCK 1B2 - FEDERATED SEI				Modification Type: SHIPALT/AIT				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: TC056 - BLOCK 1B2 FEDERATED SEI													
B Kits													
Recurring													
1.1.1) FMP SHIP UNITS - NonOrganic	63 / 23.310	3 / 1.170	2 / 0.912	2 / 0.940	- / -	2 / 0.940	4 / 2.048	1 / 0.527	1 / 0.538	2 / 1.096	- / -	78 / 30.541	
1.1.2) NON-FMP SHORE SITE UNITS - NonOrganic	2 / 0.682	- / -	1 / 0.456	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 1.138	
Subtotal: Recurring	- / 23.992	- / 1.170	- / 1.368	- / 0.940	- / -	- / 0.940	- / 2.048	- / 0.527	- / 0.538	- / 1.096	- / 0.000	- / 31.679	
Subtotal: TC056 - BLOCK 1B2 FEDERATED SEI	65 / 23.992	3 / 1.170	3 / 1.368	2 / 0.940	- / -	2 / 0.940	4 / 2.048	1 / 0.527	1 / 0.538	2 / 1.096	- / -	81 / 31.679	
Subtotal: Procurement, All Modification Items	- / 23.992	- / 1.170	- / 1.368	- / 0.940	- / -	- / 0.940	- / 2.048	- / 0.527	- / 0.538	- / 1.096	- / 0.000	- / 31.679	
Support (All Modification Items)													
2.1) Production Support	- / 7.935	- / 0.470	- / 0.092	- / 0.127	- / -	- / 0.127	- / 0.129	- / 0.132	- / 0.134	- / 0.136	- / 1.473	- / 10.628	
2.2) Tech Refresh	- / 5.739	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 2.122	- / 7.861	
2.3) Engineering Change Proposals (ECPs)	- / -	- / -	- / 0.033	- / 0.035	- / -	- / 0.035	- / 0.069	- / 0.035	- / -	- / -	- / -	- / 0.172	
2.4) INCO Spares	- / -	- / -	- / 0.064	- / 0.264	- / -	- / 0.264	- / 0.242	- / 0.165	- / 0.196	- / 0.200	- / -	- / 1.131	
Subtotal: Support	- / 13.674	- / 0.470	- / 0.189	- / 0.426	- / -	- / 0.426	- / 0.440	- / 0.332	- / 0.330	- / 0.336	- / 3.595	- / 19.792	
Installation													
Modification Item 1 of 1: TC056 - BLOCK 1B2 FEDERATED SEI	- / 18.045	- / 0.828	- / 0.020	- / 0.174	- / 0.000	- / 0.174	- / 1.538	- / 1.458	- / 1.500	- / 0.414	- / 1.222	- / 25.199	
Subtotal: Installation	- / 18.045	- / 0.828	- / 0.020	- / 0.174	- / -	- / 0.174	- / 1.538	- / 1.458	- / 1.500	- / 0.414	- / 1.222	- / 25.199	
Total													
Total Cost (Procurement + Support + Installation)	55.711	2.468	1.577	1.540	0.000	1.540	4.026	2.317	2.368	1.846	4.817	76.670	

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Exhibit P-3a, Individual Modification: PB 2020 Navy											Date: March 2019																				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4										P-1 Line Item Number / Title: 2312 / AN/SLQ-32										Modification Number / Title: 2 / TC056 - BLOCK 1B2 FEDERATED SEI											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: TC056 - BLOCK 1B2 FEDERATED SEI																															
Manufacturer Information																															
Manufacturer Name: General Dynamics AIS															Manufacturer Location: Fair Lakes, VA																
Administrative Leadtime <i>(in Months)</i> : 1															Production Leadtime <i>(in Months)</i> : 14																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates		Mar 2019				Mar 2019				Feb 2020				Feb 2021				Feb 2022				Feb 2023				Feb 2024					
Delivery Dates		May 2020				Jun 2020				Apr 2021				Apr 2022				Apr 2023				Apr 2024				Apr 2025					
Installation Information																															
Method of Implementation: SHIPALT/AIT:: Installation Name: FMP SHIP UNITS																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		60 / 17.825		3 / 0.828		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		63 / 18.653					
FY 2018		- / -		- / -		0 / 0.015		0 / 0.119		0 / 0.000		0 / 0.119		3 / 1.048		- / -		- / -		- / -		- / -		0 / 0.000		3 / 1.182					
FY 2019		- / -		- / -		0 / 0.005		0 / 0.045		0 / 0.000		0 / 0.045		1 / 0.390		1 / 0.356		- / -		- / -		- / -		0 / 0.000		2 / 0.796					
FY 2020		- / -		- / -		- / -		0 / 0.010		0 / 0.000		0 / 0.010		0 / 0.080		2 / 0.712		- / -		- / -		- / -		0 / 0.000		2 / 0.802					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.020		0 / 0.165		4 / 1.453		- / -		- / -		0 / 0.000		4 / 1.638					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.005		0 / 0.042		1 / 0.371		0 / 0.000		1 / 0.418							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.005		0 / 0.043		1 / 0.378		1 / 0.426							
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		2 / 0.844		2 / 0.844					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
Total		60 / 17.825		3 / 0.828		0 / 0.020		0 / 0.174		0 / 0.000		0 / 0.174		4 / 1.538		3 / 1.238		4 / 1.500		1 / 0.414		3 / 1.222		78 / 24.759							
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	60	3	-	-	-	-	-	-	-	-	-	-	-	1	-	2	1	-	-	3	-	1	2	-	1	-	-	1	-	3	78
Out	60	-	3	-	-	-	-	-	-	-	-	-	-	-	1	-	2	1	-	-	3	-	1	2	-	1	-	-	1	3	78

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4	P-1 Line Item Number / Title: 2312 / AN/SLQ-32	Modification Number / Title: 2 / TC056 - BLOCK 1B2 FEDERATED SEI

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:

Modification Item 1 of 1: TC056 - BLOCK 1B2 FEDERATED SEI

Installation Information

Method of Implementation: [none specified]:: Installation Name: NON-FMP SHORE SITE UNITS

Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	1 / 0.220	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	1 / 0.220
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.220	- / -	- / -	0 / 0.000	1 / 0.220
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	1 / 0.220	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.220	- / -	- / -	0 / 0.000	2 / 0.440

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	2
Out	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	2

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Exhibit P-3a, Individual Modification: PB 2020 Navy						Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4				P-1 Line Item Number / Title: 2312 / AN/SLQ-32				Modification Number / Title: 3 / TC056 - BLOCK 1B3 HGHS			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	86.900	16.866	24.378	26.210	0.000	26.210	30.626	25.997	14.753	8.104	25.718	259.552
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	86.900	16.866	24.378	26.210	0.000	26.210	30.626	25.997	14.753	8.104	25.718	259.552
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	86.900	16.866	24.378	26.210	0.000	26.210	30.626	25.997	14.753	8.104	25.718	259.552
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Block 1B3: High Gain High Sensitivity (HGHS)

High Gain High Sensitivity (HGHS) Adjunct Sensor is a critical improvement for threat correlation, situational awareness, and extending the battle space. Engineering Change Proposal (ECP) funding is provided to support changes resulting from software and hardware trouble reports from production, shipboard installations and/or land based testing. Tech Refresh funding is provided to address obsolescence and reliability issues affecting fielded systems. The SEWIP Block 1B3 and Block 2 units are installed conjunctively to compose the AN/SLQ-32(V)6 system. The SEWIP Block 1B3, Block 2 and Block 3 units are installed conjunctively to compose the AN/SLQ-32(V)7 system. The SEWIP Block 1B3 P-3a funding has been broken out to separately show systems installed with SEWIP Block 2 (FMP Block 1B3 for SLQ-32 (V)6) and systems installed with SEWIP Block 2 and Block 3 (FMP Block 1B3 for SLQ-32 (V)7). For FMP Block 1B3 systems for SLQ-32 (V)6 and (V)7, production lead time for Block 1B3 is 15 months and these systems are then delivered to the system integrator, NSWC Crane, 6 months (A-180 days) prior to the start of the installation availability for integration into a SLQ-32 (V)6 or (V)7 system. 135 days is required for integration and testing with SEWIP Blocks 1B2 and 1B3 for SLQ-32 (V)6 and SEWIP Blocks 1B2, 1B3 and 3 for SLQ-32(V)7, 15 days for preparation for shipment and delivery to the shipyard 30 days prior to the start of the availability (A-30).

Notes:

(1) Production Support provides for Government oversight of production, Government and Original Equipment Manufacturer (OEM) support of production related software and hardware problems, and engineering as well as integrated logistics support efforts in support of production and fielding.

(2) Engineering Change Proposal (ECP) funding is to address reliability, obsolescence, and other issues associated with production, and is estimated at 3% of the total hardware cost.

(3) Installation cost estimates are based on actual costs of installations to date.

(4) For FMP Block 1B3 systems, the production lead time is 15 months, and these systems are then delivered to the system integrator, NSWC Crane, 6 months prior to the start of the installation availability (A-180 days) where integration, testing, and preparation for shipment is conducted. 135 days are required for integration and testing of the SEWIP Blocks 1B2, 1B3 and 2 into an SLQ-32(V)6 system, preparation for shipment (15 days) and delivery to the shipyard 30 days prior to the start of the availability (A-30).

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4				P-1 Line Item Number / Title: 2312 / AN/SLQ-32				Modification Number / Title: 3 / TC056 - BLOCK 1B3 HGHS					
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: TC056 SURFACE EW IMPROVEMENTS BLOCK 1 - BLOCK 1B3 HGHS				Modification Type: SHIPALT/AIT				Related RDT&E PEs: 0604757N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: TC056 - BLOCK 1B3 HGHS													
B Kits													
Recurring													
1.1.1) FMP BLOCK 1B3 for SLQ-32 (V)6 - NonOrganic 47 / 44.932 9 / 6.258 15 / 10.366 18 / 12.685 - / - 18 / 12.685 13 / 9.345 6 / 4.399 - / - - / - 1 / 0.763 109 / 88.748													
1.1.2) FMP BLOCK 1B3 for SLQ-32 (V)7 - NonOrganic - / - 1 / 0.695 1 / 0.691 1 / 0.705 - / - 1 / 0.705 4 / 2.876 3 / 2.200 1 / 0.748 1 / 0.763 1 / 0.763 13 / 9.441													
1.1.3) NON-FMP BLOCK 1B3 SHORE SITE - NonOrganic 6 / 7.775 - / - 1 / 0.691 - / - - / - - / - - / - - / - - / - - / - 7 / 8.466													
1.1.4) BLK 1B3 GFE UNIT FOR BLK 3 OEM - NonOrganic 2 / 2.602 - / - - / - - / - - / - - / - - / - - / - - / - 2 / 2.602													
Subtotal: Recurring - / 55.309 - / 6.953 - / 11.748 - / 13.390 - / - - / 13.390 - / 12.221 - / 6.599 - / 0.748 - / 0.763 - / 1.526 - / 109.257													
Subtotal: TC056 - BLOCK 1B3 HGHS 55 / 55.309 10 / 6.953 17 / 11.748 19 / 13.390 - / - 19 / 13.390 17 / 12.221 9 / 6.599 1 / 0.748 1 / 0.763 2 / 1.526 131 / 109.257													
Subtotal: Procurement, All Modification Items - / 55.309 - / 6.953 - / 11.748 - / 13.390 - / - - / 13.390 - / 12.221 - / 6.599 - / 0.748 - / 0.763 - / 1.526 - / 109.257													
Support (All Modification Items)													
2.1) Production Support - / 12.500 - / 1.820 - / 2.446 - / 2.189 - / - - / 2.189 - / 2.223 - / 2.278 - / 1.841 - / 1.878 - / 16.920 - / 44.095													
2.2) Tech Refresh - / 0.438 - / - - / - - / - - / - - / - - / - - / - - / - 10.438													
2.3) Engineering Change Proposals (ECPs) - / 1.052 - / 0.559 - / 0.299 - / 0.320 - / - - / 0.320 - / 0.320 - / 0.320 - / 0.150 - / 0.153 - / 1.155 - / 4.328													
2.4) INCO Spares - / - - / 0.254 - / 1.592 - / 0.263 - / - - / 0.263 - / 0.940 - / 0.776 - / 0.792 - / 0.807 - / 2.052 - / 17.476													
Subtotal: Support - / 13.990 - / 2.633 - / 4.337 - / 2.772 - / - - / 2.772 - / 3.483 - / 3.374 - / 2.783 - / 2.838 - / 20.127 - / 56.337													
Installation													
Modification Item 1 of 1: TC056 - BLOCK 1B3 HGHS - / 17.601 - / 7.280 - / 8.293 - / 10.048 - / 0.000 - / 10.048 - / 14.922 - / 16.024 - / 11.222 - / 4.503 - / 4.065 - / 93.958													
Subtotal: Installation - / 17.601 - / 7.280 - / 8.293 - / 10.048 - / - - / 10.048 - / 14.922 - / 16.024 - / 11.222 - / 4.503 - / 4.065 - / 93.958													
Total													
Total Cost (Procurement + Support + Installation) 86.900 16.866 24.378 26.210 0.000 26.210 30.626 25.997 14.753 8.104 25.718 259.552													

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4										P-1 Line Item Number / Title: 2312 / AN/SLQ-32										Modification Number / Title: 3 / TC056 - BLOCK 1B3 HGHS											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: TC056 - BLOCK 1B3 HGHS																															
Manufacturer Information																															
Manufacturer Name: General Dynamics AIS															Manufacturer Location: Fair Lakes VA																
Administrative Leadtime (in Months): 1															Production Leadtime (in Months): 15																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates		Apr 2018				Jan 2019				Mar 2020				Mar 2021				Mar 2022				Mar 2023				Mar 2024					
Delivery Dates		Jul 2019				Apr 2020				Jun 2021				Jun 2022				Jun 2023				Jun 2024				Jun 2025					
Installation Information																															
Method of Implementation: SHIPALT/AIT:: Installation Name: FMP BLOCK 1B3 for SLQ-32 (V)6																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		21 / 15.585		10 / 6.740		9 / 5.546		7 / 4.145		0 / 0.000		7 / 4.145		- / -		- / -		- / -		- / -		0 / 0.000		47 / 32.016							
FY 2018		- / -		0 / 0.540		0 / 0.968		3 / 2.074		0 / 0.000		3 / 2.074		6 / 3.596		- / -		- / -		- / -		0 / 0.000		9 / 7.178							
FY 2019		- / -		- / -		0 / 1.642		0 / 1.011		0 / 0.000		0 / 1.011		12 / 7.341		3 / 1.819		- / -		- / -		0 / 0.000		15 / 11.813							
FY 2020		- / -		- / -		- / -		0 / 2.492		0 / 0.000		0 / 2.492		0 / 0.904		18 / 10.916		- / -		- / -		0 / 0.000		18 / 14.312							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		0 / 1.821		0 / 0.661		13 / 7.978		- / -		0 / 0.000		13 / 10.460							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.567		0 / 0.492		4 / 2.588		2 / 1.257		6 / 4.904							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 0.817		1 / 0.817							
Total		21 / 15.585		10 / 7.280		9 / 8.156		10 / 9.722		0 / 0.000		10 / 9.722		18 / 13.662		21 / 13.963		13 / 8.470		4 / 2.588		3 / 2.074		109 / 81.500							
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	21	1	-	-	9	-	-	2	7	4	2	1	3	4	2	3	9	3	2	9	7	3	5	4	1	-	4	-	-	3	109
Out	13	8	1	-	-	9	-	-	2	7	4	2	1	3	4	2	3	9	3	2	9	7	3	5	4	1	-	4	-	3	109
Method of Implementation: [none specified]:: Installation Name: FMP BLOCK 1B3 for SLQ-32 (V)7																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4					P-1 Line Item Number / Title: 2312 / AN/SLQ-32					Modification Number / Title: 3 / TC056 - BLOCK 1B3 HGHS																					
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:																					
Modification Item 1 of 1: TC056 - BLOCK 1B3 HGHS																															
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: FMP BLOCK 1B3 for SLQ-32 (V)7																															
Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total																			
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																			
FY 2018	- / -	- / -	0 / 0.137	0 / 0.050	0 / 0.000	0 / 0.050	1 / 0.599	- / -	- / -	- / -	0 / 0.000	1 / 0.786																			
FY 2019	- / -	- / -	- / -	0 / 0.138	0 / 0.000	0 / 0.138	0 / 0.050	1 / 0.607	- / -	- / -	0 / 0.000	1 / 0.795																			
FY 2020	- / -	- / -	- / -	0 / 0.138	0 / 0.000	0 / 0.138	0 / 0.050	1 / 0.606	- / -	- / -	0 / 0.000	1 / 0.794																			
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.561	0 / 0.203	4 / 2.455	- / -	0 / 0.000	4 / 3.219																			
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.425	0 / 0.154	3 / 1.863	0 / 0.000	3 / 2.442																			
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.143	0 / 0.052	1 / 0.629	1 / 0.824																			
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.681	1 / 0.681																			
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.681	1 / 0.681																			
Total	- / -	- / -	0 / 0.137	0 / 0.326	0 / 0.000	0 / 0.326	1 / 1.260	2 / 1.841	4 / 2.752	3 / 1.915	3 / 1.991	13 / 10.222																			
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	1	-	-	-	2	2	-	2	1	-	3	13
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	1	-	-	-	2	2	-	2	1	3	13
Method of Implementation: AIT:: Installation Name: NON-FMP BLOCK 1B3 SHORE SITE																															
Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total																			
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																			
Prior Years	6 / 1.656	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	6 / 1.656																			
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.220	- / -	- / -	0 / 0.000	1 / 0.220																			
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
Total	6 / 1.656	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.220	- / -	- / -	0 / 0.000	7 / 1.876																			

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Exhibit P-3a, Individual Modification: PB 2020 Navy																								Date: March 2019							
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4												P-1 Line Item Number / Title: 2312 / AN/SLQ-32												Modification Number / Title: 3 / TC056 - BLOCK 1B3 HGHS							
ID Code (A=Service Ready, B=Not Service Ready) :																		MDAP/MAIS Code:													
Modification Item 1 of 1: TC056 - BLOCK 1B3 HGHS																															
Installation Information																															
Method of Implementation: AIT:: Installation Name: NON-FMP BLOCK 1B3 SHORE SITE																															
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	7
Out	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	7
Method of Implementation: AIT:: Installation Name: BLK 1B3 GFE UNIT FOR BLK 3 OEM																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		2 / 0.360		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 0.360					
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
Total		2 / 0.360		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 0.360					
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Out	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4				P-1 Line Item Number / Title: 2312 / AN/SLQ-32						Modification Number / Title: 4 / TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	670.607	150.005	221.645	248.641	0.000	248.641	263.996	187.424	77.542	37.652	243.081	2,100.593
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	670.607	150.005	221.645	248.641	0.000	248.641	263.996	187.424	77.542	37.652	243.081	2,100.593
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	670.607	150.005	221.645	248.641	0.000	248.641	263.996	187.424	77.542	37.652	243.081	2,100.593
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM Block 2 will provide AN/SLQ-32(V) an upgraded antenna, receiver, and combat systems interface. The upgrades will pace the threat, improve detection and accuracy and mitigate Electromagnetic Interference (EMI). The Block 2 hardware cost includes the SEWIP Block 2 ES system, Blanker-Video Mixer Group (AN/SLA-10D), Common Processing System, Common Display System, Liquid Conditioning Unit and Data Adaptation Processor. The SEWIP Block 1B3 and Block 2 units are installed conjunctively and compose the AN/SLQ-32(V)6 system. The SEWIP Block 1B3, Block 2 and Block 3 units are installed conjunctively to compose the AN/SLQ-32(V)7 system. The SEWIP Block 2 P-3a funding has been broken out to separately show systems installed with SEWIP Block 1B3 (FMP Block 2 for SLQ-32 (V)6) and systems installed with SEWIP Block 1B3 and Block 3 (FMP Block 2 for SLQ-32 (V)7). For FMP Block 2 systems for SLQ-32 (V)6 and (V)7, the production lead time is 17 months and these systems are then delivered to the system integrator, NSWC Crane, 6 months (A-180 days) prior to the start of the installation availability for integration into a SLQ-32 (V)6 or (V)7 system. 135 days is required for integration and testing with SEWIP Blocks 1B2 and 1B3 for SLQ-32 (V)6 and SEWIP Blocks 1B2, 1B3 and 3 for SLQ-32(V7), 15 days for preparation for shipment and delivery to the shipyard 30 days prior to the start of the availability (A-30). Notes: (1) Production Support provides for Government production oversight and original equipment manufacturer (OEM) support of production. This includes software, hardware problems, and integrated logistics support for production and fielding. (2) Tech Refresh funding in FY20-FY24 will provide for the procurement and retrofit of an upgraded Liquid Cooling Unit (LCU), implement enhanced cybersecurity safeguards and upgrade to the Next Generation Versa Module Europa (VME) system replacement. Tech Refresh of the LCU will address reliability and support cost drivers of the current configuration. Enhanced cybersecurity safeguards are required for the AN/SLQ-32(V)6 system to continue to be part of the integrated combat system. The next Generation VME system replacement will update SEWIP Block 2 to VPX (also known as VME International Trade Association (VITA) standard 46) to correct VME bus bandwidth limitations, which will address obsolescence and reliability issues affecting fielded systems. (3) Engineering Change Proposal (ECP) funding increases in FY20 to address essential, mission critical safety, reliability, production and performance issues associated with production and is estimated based on current list of approved Class I ECPs. SEWIP Block 2 ECP funding supports the Non-Recurring Engineering for anticipated hardware and software combat system integration issues and Fleet reported trouble reports including correction of shock and vibration deficiencies, shelter improvements and modifications, single mode fiber conversions, Liquid Cooling Unit (LCU) production changes and software integration. These are currently 53 Class I ECPs approved for implementation, and the \$9.893M in FY20 is planned to fund the NRE for implementation of 17 of the highest priority ECPs.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4	P-1 Line Item Number / Title: 2312 / AN/SLQ-32	Modification Number / Title: 4 / TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
(4) SEWIP Block 2 H/W unit cost increase in FY19-FY23 since PB19 is due to increased Common Processing Solution (CPS) and Common Display Solution (CDS) price increases due to multiple contract modifications for obsolescence resolution and transitioning from the TI-12 configuration in FY18 to the TI-16 configurations in FY19. (5) For FMP Block 2 systems, the production lead time is 17 months and these systems are then delivered to the system integrator, NSWC Crane, 6 months prior to the start of the installation availability (A-180 days) where integration, testing, and preparation for shipment is conducted. 135 days are required for integration and testing of the SEWIP Blocks 1B2, 1B3 and 2 into an SLQ-32(V)6 system, preparation for shipment (15 days) and delivery to the shipyard 30 days prior to the start of the availability (A-30). (6) FY18 Tech Refresh has increased since PB19 to address life of type buys for CPS/CDS TI-12 configuration and liquid cooling unit life of type buys to support the six pump configuration.		

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4					P-1 Line Item Number / Title: 2312 / AN/SLQ-32					Modification Number / Title: 4 / TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: TC059 SURFACE EW IMPROVEMENTS BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM					Modification Type: SHIPALT/AIT					Related RDT&E PEs: 0604757N			
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM													
B Kits													
Recurring													
1.1.1) FMP BLOCK 2 for SLQ-32 (V)6 - NonOrganic	47 / 472.096	9 / 81.239	15 / 136.695	18 / 164.376	- / -	18 / 164.376	13 / 121.082	6 / 57.000	- / -	- / -	1 / 9.900	109 / 1,042.388	
1.1.2) FMP BLOCK 2 for SLQ-32 (V)7 - NonOrganic	- / -	1 / 9.027	1 / 9.113	1 / 9.132	- / -	1 / 9.132	4 / 37.256	3 / 28.500	1 / 9.690	1 / 9.884	1 / 9.900	13 / 122.502	
1.1.3) NON-FMP BLK2 SHORE SITE UNITS - NonOrganic	6 / 43.485	- / -	1 / 9.113	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	7 / 52.598	
1.1.4) BLK2 GFE FOR BLK3 OEM - NonOrganic	1 / 11.556	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 11.556	
1.1.5) INCO Spares - Organic	- / -	- / 1.524	- / 5.681	- / 3.690	- / -	- / 3.690	- / 3.807	- / 3.979	- / 0.569	- / 0.580	- / -	- / 19.830	
Subtotal: Recurring	- / 527.137	- / 91.790	- / 160.602	- / 177.198	- / -	- / 177.198	- / 162.145	- / 89.479	- / 10.259	- / 10.464	- / 19.800	- / 1,248.874	
Subtotal: TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM	54 / 527.137	10 / 91.790	17 / 160.602	19 / 177.198	- / -	19 / 177.198	17 / 162.145	9 / 89.479	1 / 10.259	1 / 10.464	2 / 19.800	130 / 1,248.874	
Subtotal: Procurement, All Modification Items	- / 527.137	- / 91.790	- / 160.602	- / 177.198	- / -	- / 177.198	- / 162.145	- / 89.479	- / 10.259	- / 10.464	- / 19.800	- / 1,248.874	
Support (All Modification Items)													
2.1) Production Support	- / 42.830	- / 5.060	- / 9.827	- / 6.576	- / -	- / 6.576	- / 5.147	- / 4.613	- / 2.245	- / 2.290	- / 36.926	- / 115.514	
2.2) Tech Refresh	- / -	- / 7.063	- / 2.500	- / 2.600	- / -	- / 2.600	- / 6.975	- / 2.500	- / 2.550	- / -	- / 151.700	- / 175.888	
2.3) Engineering Change Proposals (ECPs)	- / 12.965	- / 3.789	- / 3.481	- / 8.115	- / -	- / 8.115	- / 9.312	- / 4.805	- / 2.006	- / 0.629	- / 13.314	- / 58.416	
Subtotal: Support	- / 55.795	- / 15.912	- / 15.808	- / 17.291	- / -	- / 17.291	- / 21.434	- / 11.918	- / 6.801	- / 2.919	- / 201.940	- / 349.818	
Installation													
Modification Item 1 of 1: TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM	- / 87.675	- / 42.303	- / 45.235	- / 54.152	- / 0.000	- / 54.152	- / 80.417	- / 86.027	- / 60.482	- / 24.269	- / 21.341	- / 501.901	
Subtotal: Installation	- / 87.675	- / 42.303	- / 45.235	- / 54.152	- / -	- / 54.152	- / 80.417	- / 86.027	- / 60.482	- / 24.269	- / 21.341	- / 501.901	
Total													
Total Cost (Procurement + Support + Installation)	670.607	150.005	221.645	248.641	0.000	248.641	263.996	187.424	77.542	37.652	243.081	2,100.593	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4										P-1 Line Item Number / Title: 2312 / AN/SLQ-32										Modification Number / Title: 4 / TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM																															
Manufacturer Information																															
Manufacturer Name: Lockheed Martin															Manufacturer Location: Syracuse, NY																
Administrative Leadtime (in Months): 1															Production Leadtime (in Months): 17																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates		Mar 2018				Dec 2018				Mar 2020				Mar 2021				Mar 2022				Mar 2023				Mar 2024					
Delivery Dates		Aug 2019				May 2020				Aug 2021				Aug 2022				Aug 2023				Aug 2023				Aug 2025					
Installation Information																															
Method of Implementation: SHIPALT/AIT:: Installation Name: FMP BLOCK 2 for SLQ-32 (V)6																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		21 / 81.351		10 / 39.389		9 / 30.436		7 / 22.338		0 / 0.000		7 / 22.338		- / -		- / -		- / -		- / -		0 / 0.000		47 / 173.514							
FY 2018		- / -		0 / 2.914		0 / 5.216		3 / 11.178		0 / 0.000		3 / 11.178		6 / 19.375		- / -		- / -		- / -		0 / 0.000		9 / 38.683							
FY 2019		- / -		- / -		0 / 8.846		0 / 5.448		0 / 0.000		0 / 5.448		12 / 39.563		3 / 9.804		- / -		- / -		0 / 0.000		15 / 63.661							
FY 2020		- / -		- / -		- / -		0 / 13.428		0 / 0.000		0 / 13.428		0 / 4.873		18 / 58.823		- / -		- / -		0 / 0.000		18 / 77.124							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		0 / 9.815		0 / 3.562		13 / 42.993		- / -		0 / 0.000		13 / 56.370							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 3.056		0 / 2.655		4 / 13.948		2 / 6.774		6 / 26.433							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 4.406		1 / 4.406							
Total		21 / 81.351		10 / 42.303		9 / 44.498		10 / 52.392		0 / 0.000		10 / 52.392		18 / 73.626		21 / 75.245		13 / 45.648		4 / 13.948		3 / 11.180		109 / 440.191							
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	21	1	-	-	9	-	-	2	7	4	2	1	3	4	2	3	9	3	2	9	7	3	5	4	1	-	4	-	-	3	109
Out	13	8	1	-	-	9	-	-	2	7	4	2	1	3	4	2	3	9	3	2	9	7	3	5	4	1	-	4	-	3	109

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4	P-1 Line Item Number / Title: 2312 / AN/SLQ-32	Modification Number / Title: 4 / TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:

Modification Item 1 of 1: TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM

Installation Information

Method of Implementation: [none specified]:: Installation Name: FMP BLOCK 2 for SLQ-32 (V)7

Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	0 / 0.737	0 / 0.268	0 / 0.000	0 / 0.268	1 / 3.229	- / -	- / -	- / -	0 / 0.000	1 / 4.234
FY 2019	- / -	- / -	- / -	0 / 0.746	0 / 0.000	0 / 0.746	0 / 0.271	1 / 3.268	- / -	- / -	0 / 0.000	1 / 4.285
FY 2020	- / -	- / -	- / -	0 / 0.746	0 / 0.000	0 / 0.746	0 / 0.271	1 / 3.268	- / -	- / -	0 / 0.000	1 / 4.285
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	0 / 3.020	0 / 1.096	4 / 13.229	- / -	0 / 0.000	4 / 17.345
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 2.292	0 / 0.832	3 / 10.041	0 / 0.000	3 / 13.165
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.773	0 / 0.280	1 / 3.387	1 / 4.440
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 3.387	1 / 3.387
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 3.387	1 / 3.387
Total	- / -	- / -	0 / 0.737	0 / 1.760	0 / 0.000	0 / 1.760	1 / 6.791	2 / 9.924	4 / 14.834	3 / 10.321	3 / 10.161	13 / 54.528

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	1	-	-	-	2	2	-	2	1	-	3	13
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	1	-	-	-	2	2	-	2	1	3	13

Method of Implementation: [none specified]:: Installation Name: NON-FMP BLK2 SHORE SITE UNITS

Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	6 / 5.466	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	6 / 5.466
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.858	- / -	- / -	0 / 0.000	1 / 0.858
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4	P-1 Line Item Number / Title: 2312 / AN/SLQ-32	Modification Number / Title: 4 / TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:

Modification Item 1 of 1: TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM

Installation Information

Method of Implementation: [none specified]:: Installation Name: NON-FMP BLK2 SHORE SITE UNITS

Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	6 / 5.466	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.858	- / -	- / -	0 / 0.000	7 / 6.324

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	7
Out	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	7

Method of Implementation: [none specified]:: Installation Name: BLK2 GFE FOR BLK3 OEM

Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	1 / 0.858	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	1 / 0.858
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	1 / 0.858	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	1 / 0.858

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019																																																																																																																						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4	P-1 Line Item Number / Title: 2312 / AN/SLQ-32	Modification Number / Title: 4 / TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM																																																																																																																						
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:																																																																																																																						
Modification Item 1 of 1: TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM																																																																																																																								
Installation Information																																																																																																																								
Method of Implementation: [none specified]:: Installation Name: BLK2 GFE FOR BLK3 OEM																																																																																																																								
Installation Schedule																																																																																																																								
	PYS	<table><tr><th colspan="4">FY 2018</th><th colspan="4">FY 2019</th><th colspan="4">FY 2020</th><th colspan="4">FY 2021</th><th colspan="4">FY 2022</th><th colspan="4">FY 2023</th><th colspan="4">FY 2024</th><th rowspan="2">TC</th><th rowspan="2">Tot</th></tr><tr><th>Q1</th><th>Q2</th><th>Q3</th><th>Q4</th><th>Q1</th><th>Q2</th><th>Q3</th><th>Q4</th><th>Q1</th><th>Q2</th><th>Q3</th><th>Q4</th><th>Q1</th><th>Q2</th><th>Q3</th><th>Q4</th><th>Q1</th><th>Q2</th><th>Q3</th><th>Q4</th><th>Q1</th><th>Q2</th><th>Q3</th><th>Q4</th><th>Q1</th><th>Q2</th><th>Q3</th><th>Q4</th></tr><tr><td>In</td><td>1</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>1</td></tr><tr><td>Out</td><td>1</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>1</td></tr></table>	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	In	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	Out	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot																																																																																											
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4																																																																																													
In	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1																																																																																											
Out	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1																																																																																											

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4				P-1 Line Item Number / Title: 2312 / AN/SLQ-32				Modification Number / Title: 5 / TC060 - BLOCK 3 ELECTRONIC ATTACK (EA) SYSTEM				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	28.909	43.827	102.871	113.361	0.000	113.361	212.711	167.092	268.875	273.316	1,931.674	3,142.636
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	28.909	43.827	102.871	113.361	0.000	113.361	212.711	167.092	268.875	273.316	1,931.674	3,142.636
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	28.909	43.827	102.871	113.361	0.000	113.361	212.711	167.092	268.875	273.316	1,931.674	3,142.636
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Block 3 will provide an Electronic Attack (EA) capability improvement required for the AN/SLQ-32(V) system to keep pace with the threat. SEWIP Block 3 will provide a common EA capability to surface combatants (CVN, DDG, LHD) outfitted with the active variant of the AN/SLQ-32, mainly the (V)3 and (V)4, as well as select new-construction platforms. The program builds on the EW Electronic Support (ES) capability delivered by Blocks 1 and 2. Development Status/Major Milestones are: Long Lead Material (LLM) was procured Q4 FY17, Milestone C Low Rate Initial Production (LRIP) Q1 FY19, IOT&E Q4 FY22, FRP is Q3 FY23. The SEWIP Block 1B3, Block 2 and Block 3 units compose the AN/SLQ-32(V)7 system. This may be accomplished as a conjunctive installation with all SEWIP components installed at the same time or as a non-conjunctive installation by installing the SEWIP Block 3 on a ship with SEWIP Block 1B3 and 2 previously installed.												
Notes: (1) Production Support provides for Government oversight of production, Government and original equipment manufacturer (OEM) support of production related software and hardware problems, and engineering as well as integrated logistics support efforts in support of production and fielding. (2) INCO spares requirements are based on the updated Program Support Data sheets, SEWIP Block 3 hardware reliability projections, and the level at which SEWIP INCO spares requirements have been funded via the OPN 9020 budget. (3) SEWIP Block 3 Engineering Change Proposal (ECP) funding amounts are estimated based on the current maturity of the design and the anticipated changes during production to address known reliability, obsolescence, and other issues. SEWIP Block 3 ECP funding supports the Non-Recurring Engineering for anticipated hardware configuration changes necessary for installation on CVN and LHD class ships and anticipated software changes necessary to meet combat system integration requirements. (4) The production lead time increased from 18 months to 24 months due to longer than previously estimated hardware lead time for long lead solid state devices. The anticipated delivery rate is one SEWIP Block 3 system every two months. (5) SEWIP Block 3 installation costs include the procurement of four (4) quad plates per shipset to mount the SEWIP Block 3 antennas. The installation costs also include the procurement of High Efficiency, Super Capacity (HES-C) chiller unit upgrades required for certain DDG, LHD, and CVN ships (11 of the 49 SEWIP Block 3 installations). The quad plates and HES-C chiller unit upgrades are required two (2) years ahead of shipboard installation to support integration at NSWC Crane.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4	P-1 Line Item Number / Title: 2312 / AN/SLQ-32	Modification Number / Title: 5 / TC060 - BLOCK 3 ELECTRONIC ATTACK (EA) SYSTEM
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
(6) The current SEWIP Block 3 development contract was awarded in FY15 and includes fixed price production options for FY17 and FY18 which were bid in a competitive environment prior to the start of system development. The program procured the FY17 and FY18 units at these contract prices. A new competitive contract will be awarded for FY19-FY23 production requirements. The estimated FY19-FY23 Block 3 unit prices are based on Engineering Development Model (EDM) actual cost data including an updated Bill of Material (BOM) and EDM purchase orders which reflects material cost growth and system complexities, including hardware ruggedization, realized during development. Additionally, the FY20-24 unit prices include ancillary equipment required for installation that was not included in PB19. (7) The FMP Block 3 systems production lead time is 24 months, and these systems are then delivered to the system integrator, NSWC Crane, 6 months prior to the start of the installation availability (A-180 days) where integration, testing, and preparation for shipment is conducted. 135 days are required for integration and testing of the SEWIP Blocks 1B2, 1B3, 2 and 3 into an SLQ-32(V)7 system, preparation for shipment (15 days) and delivery to the shipyard 30 days prior to the start of the availability (A-30). (8) The SEWIP Block 3 procurement profile has been reduced for FY18-FY24 since PB19. Three factors contributed to this change; (1) IOT&E moved from Q1FY21 to Q4FY22 due to a change in the test ship cause by late delivery of LRIP unit 1; (2) The production lead time has increased from 18 months to 24 months due to longer than previously estimated hardware lead time for long lead solid state devices in the SEWIP Block 3 system; and, (3) The limited number of ship availabilities with an industrial period of six months or longer. The minimum industrial period required to install the SEWIP Block 3 system is six months.		

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4				P-1 Line Item Number / Title: 2312 / AN/SLQ-32				Modification Number / Title: 5 / TC060 - BLOCK 3 ELECTRONIC ATTACK (EA) SYSTEM					
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: TC060 SURFACE EW IMPROVEMENTS BLOCK 3 ELECTRONIC ATTACK (EA) SYSTEM				Modification Type: SHIPALT/AIT				Related RDT&E PEs: 0604757N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: TC060 - BLOCK 3 ELECTRONIC ATTACK (EA) SYSTEM													
B Kits													
Recurring													
1.1.1) FMP BLOCK 3 (SMALL RCS) for SLQ-32(V)7 - NonOrganic	1 / 25.379	1 / 20.295	1 / 31.726	3 / 95.178	- / -	3 / 95.178	5 / 152.785	3 / 89.721	5 / 148.135	5 / 146.555	24 / 699.360	48 / 1,409.134	
1.1.2) NON-FMP BLK3 SHORE SITE UNITS - NonOrganic	- / -	- / -	1 / 31.726	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 31.726	
1.1.3) Installation and Check Out (INCO) Spares - Organic	- / -	- / 10.234	- / 13.698	- / 3.458	- / -	- / 3.458	- / 9.285	- / 8.868	- / 7.920	- / 2.585	- / 104.800	- / 160.848	
Subtotal: Recurring	- / 25.379	- / 30.529	- / 77.150	- / 98.636	- / -	- / 98.636	- / 162.070	- / 98.589	- / 156.055	- / 149.140	- / 804.160	- / 1,601.708	
Subtotal: TC060 - BLOCK 3 ELECTRONIC ATTACK (EA) SYSTEM	1 / 25.379	1 / 30.529	2 / 77.150	3 / 98.636	- / -	3 / 98.636	5 / 162.070	3 / 98.589	5 / 156.055	5 / 149.140	24 / 804.160	49 / 1,601.708	
Subtotal: Procurement, All Modification Items	- / 25.379	- / 30.529	- / 77.150	- / 98.636	- / -	- / 98.636	- / 162.070	- / 98.589	- / 156.055	- / 149.140	- / 804.160	- / 1,601.708	
Support (All Modification Items)													
2.1) Production Support	- / 3.530	- / 6.330	- / 13.346	- / 4.880	- / -	- / 4.880	- / 7.343	- / 9.496	- / 7.177	- / 6.865	- / 42.333	- / 101.300	
2.2) Engineering Change Proposals (ECP)	- / -	- / 2.420	- / 3.444	- / 2.644	- / -	- / 2.644	- / 9.167	- / 7.178	- / 8.296	- / 10.259	- / 123.300	- / 166.708	
2.3) Tech Refresh	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 192.100	- / 192.100	
Subtotal: Support	- / 3.530	- / 8.750	- / 16.790	- / 7.524	- / -	- / 7.524	- / 16.510	- / 16.674	- / 15.473	- / 17.124	- / 357.733	- / 460.108	
Installation													
Modification Item 1 of 1: TC060 - BLOCK 3 ELECTRONIC ATTACK (EA) SYSTEM	- / 0.000	- / 4.548	- / 8.931	- / 7.201	- / 0.000	- / 7.201	- / 34.131	- / 51.829	- / 97.347	- / 107.052	- / 769.781	- / 1,080.820	
Subtotal: Installation	- / 0.000	- / 4.548	- / 8.931	- / 7.201	- / -	- / 7.201	- / 34.131	- / 51.829	- / 97.347	- / 107.052	- / 769.781	- / 1,080.820	
Total													
Total Cost (Procurement + Support + Installation)	28.909	43.827	102.871	113.361	0.000	113.361	212.711	167.092	268.875	273.316	1,931.674	3,142.636	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4										P-1 Line Item Number / Title: 2312 / AN/SLQ-32										Modification Number / Title: 5 / TC060 - BLOCK 3 ELECTRONIC ATTACK (EA) SYSTEM											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: TC060 - BLOCK 3 ELECTRONIC ATTACK (EA) SYSTEM																															
Manufacturer Information																															
Manufacturer Name: NORTHROP GRUMMAN															Manufacturer Location: BALTIMORE, MD																
Administrative Leadtime (in Months): 0															Production Leadtime (in Months): 24																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates		Dec 2018				Mar 2020				Mar 2020				Mar 2021				Mar 2022				Mar 2023				Mar 2024					
Delivery Dates		Dec 2020				Mar 2022				Jul 2022				Mar 2023				Mar 2024				Mar 2025				Mar 2026					
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: FMP BLOCK 3 (SMALL RCS) for SLQ-32(V)7																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		- / -		0 / 2.274		0 / 8.931		0 / 2.473		0 / 0.000		0 / 2.473		1 / 14.203		- / -		- / -		- / -		0 / 0.000		1 / 27.881							
FY 2018		- / -		0 / 2.274		- / -		0 / 2.364		0 / 0.000		0 / 2.364		0 / 2.313		1 / 13.264		- / -		- / -		0 / 0.000		1 / 20.215							
FY 2019		- / -		- / -		- / -		0 / 2.364		0 / 0.000		0 / 2.364		0 / 6.437		0 / 3.346		1 / 22.397		- / -		0 / 0.000		1 / 34.544							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		0 / 11.178		0 / 8.065		3 / 49.316		- / -		0 / 0.000		3 / 68.559							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 20.222		0 / 14.046		5 / 86.656		0 / 0.000		5 / 120.924							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 11.588		0 / 8.249		3 / 70.915		3 / 90.752							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 12.147		5 / 83.420		5 / 95.567							
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		5 / 101.102		5 / 101.102							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		24 / 514.344		24 / 514.344							
Total		- / -		0 / 4.548		0 / 8.931		0 / 7.201		0 / 0.000		0 / 7.201		1 / 34.131		1 / 44.897		4 / 97.347		5 / 107.052		37 / 769.781		48 / 1,073.888							
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	1	-	3	-	-	2	1	2	37	48
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	1	-	3	-	-	2	1	39	48

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4	P-1 Line Item Number / Title: 2312 / AN/SLQ-32	Modification Number / Title: 5 / TC060 - BLOCK 3 ELECTRONIC ATTACK (EA) SYSTEM

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:

Modification Item 1 of 1: TC060 - BLOCK 3 ELECTRONIC ATTACK (EA) SYSTEM

Installation Information

Method of Implementation: AIT:: Installation Name: NON-FMP BLK3 SHORE SITE UNITS

Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 6.932	- / -	- / -	0 / 0.000	1 / 6.932
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 6.932	- / -	- / -	0 / 0.000	1 / 6.932

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4					P-1 Line Item Number / Title: 2312 / AN/SLQ-32					Modification Number / Title: 6 / TC060 - BLOCK 3T SURFACE EW IMPROVEMENTS EA System		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	122.566	7.929	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	130.495
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	122.566	7.929	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	130.495
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	122.566	7.929	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	130.495
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Block 3T (also referred to as nomenclature AN/SLQ-59) will provide an Electronic Attack (EA) capability improvement required for the AN/SLQ32(V) system to keep pace with the threat. Block 3T provides initial, limited interim capability of a focused application of the Naval Research Lab (NRL) Transportable EW Module (TEWM) system to meet an urgent operational needs statement.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4					P-1 Line Item Number / Title: 2312 / AN/SLQ-32					Modification Number / Title: 6 / TC060 - BLOCK 3T SURFACE EW IMPROVEMENTS EA System			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: TC060 - BLOCK 3T SURFACE EW IMPROVEMENTS EA System					Modification Type: SHIPALT/AIT					Related RDT&E PEs: 0604757N			
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: TC060 - BLOCK 3T SURFACE EW IMPROVEMENTS EA System													
B Kits													
Recurring													
1.1.1) FMP Ship Units - NonOrganic	15 / 75.692	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	15 / 75.692	
Subtotal: Recurring	- / 75.692	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 75.692	
Subtotal: TC060 - BLOCK 3T SURFACE EW IMPROVEMENTS EA System	15 / 75.692	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	15 / 75.692	
Subtotal: Procurement, All Modification Items	- / 75.692	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 75.692	
Support (All Modification Items)													
2.1) Production Support	- / 3.470	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 3.470	
Subtotal: Support	- / 3.470	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 3.470	
Installation													
Modification Item 1 of 1: TC060 - BLOCK 3T SURFACE EW IMPROVEMENTS EA System	- / 43.404	- / 7.929	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 51.333	
Subtotal: Installation	- / 43.404	- / 7.929	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 51.333	
Total													
Total Cost (Procurement + Support + Installation)	122.566	7.929	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	130.495	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4										P-1 Line Item Number / Title: 2312 / AN/SLQ-32										Modification Number / Title: 6 / TC060 - BLOCK 3T SURFACE EW IMPROVEMENTS EA System											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: TC060 - BLOCK 3T SURFACE EW IMPROVEMENTS EA System																															
Manufacturer Information																															
Manufacturer Name: Exelis															Manufacturer Location: Boalsburg, PA																
Administrative Leadtime (in Months): 0															Production Leadtime (in Months): 6																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates																															
Delivery Dates																															
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: FMP Ship Units																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		12 / 43.404		3 / 7.929		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		15 / 51.333					
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
Total		12 / 43.404		3 / 7.929		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		15 / 51.333					
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	12	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15
Out	10	2	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 5: Reconnaissance Equipment						P-1 Line Item Number / Title: 2360 / Shipboard IW Exploit						
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A					Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	1,190.838	216.615	218.103	194.758	0.000	194.758	235.478	286.193	344.917	297.453	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	1,190.838	216.615	218.103	194.758	0.000	194.758	235.478	286.193	344.917	297.453	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	1,190.838	216.615	218.103	194.758	0.000	194.758	235.478	286.193	344.917	297.453	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	7.077	4.978	4.095	-	4.095	5.639	4.865	3.045	1.761	Continuing	Continuing
Flyaway Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-
Description:												
[P5 / 1U013 SSEE Increment E ECP]: Engineering Change Proposal (ECP)/Obsolescence procures Commercial Off-The-Shelf/Non-Developmental Item (COTS/NDI) equipment to replace obsolete and unsupportable equipment for the Ships Signal Exploitation Equipment (SSEE) Increment E program and incorporates Pre-Planned Product Improvements (P3I) for the acquisition and localization of Signals of Interest (SOI) and Electronic Warfare (EW). These changes allow for a common logistic support baseline and provide the hardware and software to incorporate P3I/new COTS base technologies. Currently this funds field change kits/ECPs for Red Falcon antennas to provide Information Operation (IO)/EW acquisition capabilities and localization of modern threat communications and SOI.												
[P5 / 1U016 Spectral]: The Spectral Program is an incremental acquisition, Government Off-The-Shelf/Commercial Off-The-Shelf (GOTS/COTS) program that provides cryptologic signals exploitation capabilities designed to meet the requirements for shipboard cryptologic operations within the Ship's Signal Exploitation Space (SSES) aboard a variety of ship classes and shore facilities. The Spectral system will provide a mobile, passive capability to detect, classify, track, and determine the intent of enemy units through exploitation of their command and control emissions. The Spectral System will leverage existing architectures and support the integrated fires construct with Shipboard Combat Systems providing non-kinetic engagement to enhance combat effectiveness. The system will be scalable, reconfigurable to mission, modular, remotable and dynamically reprogrammable in response to new threats and capabilities. The Spectral System will deliver improved information/cyber warfare planning, exploitation, and attack capabilities across Naval platforms.												
[P5 / 1U020 SSEE Modifications (SSEE MODS) ECP - Ship]: Ship's Signal Exploitation Equipment Modifications (SSEE MODS) Engineering Change Proposal (ECP)/Obsolescence procures Commercial Off-The-Shelf/Non-Developmental Item (NDI) equipment to replace obsolete and end-of-life (EOL) equipment for the Ship's Signal Exploitation Equipment (SSEE) MODS program. ECP incorporates Pre-Planned Product Improvements (P3I) for the acquisition and localization of the latest Signals of Interest (SOI) and Information Operations (IO). ECP maintains and improves upon SSEE MODS capability and relevance within a rapidly evolving threat environment.												
[P5 / 1U029 Information Warfare (IW) Training Equipment]: IW training equipment provides operator, unit or multi-unit level training on Ships Signal Exploitation Equipment (SSEE) Increment F (V)7/8. This equipment enhances initial skills, provides refresher training and increases proficiency of the operator on the system through the generation and replay of operational scenarios by software simulation versus hardware simulation. IW training equipment is updated based on new variants of SSEE systems. Additionally, this line supports the procurement of the Stallion (formerly known as Cryptologic On-Line Trainer) hardware for Shipboard IW team training. Stallion is a web-based/Service Oriented Architecture (SOA) scenario training system that emulates Navy Tactical Signal Intelligence (SIGINT)/Information Operations (IO) system functionality. Stallion is delivered turnkey to the Center for Information Dominance Learning Sites (CIDLS).												

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 5: Reconnaissance Equipment		P-1 Line Item Number / Title: 2360 / Shipboard IW Exploit
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
[P5 / 1U060 ICADS]: Integrated Communications and Data System (ICADS) ((AN/URC-148(V)) is a Chief of Naval Operations (CNO) directed mission critical system providing advanced simulation capabilities and limited back-up communications for Naval platforms. ICADS provides a scalable capability dependent on host platform requirements. Specific program details held at a higher classification.		
[P5 / 1U014 SSEE Increment F (All Variants) ECP]: Engineering Change Proposal (ECP)/Obsolescence procures Commercial Off-The-Shelf/Non-Developmental Item (COTS/NDI) equipment to replace obsolete and end-of-life (EOL) equipment for the Ship's Signal Exploitation Equipment (SSEE) Increment F program (All Variants) as well as incorporates Pre-Planned Product Improvement (P3I) for the acquisition and localization of the latest Signals of Interest (SOI) and Information Operations (IO) capabilities into the host systems. ECP's maintain and improve upon existing capability and relevance within a rapidly evolving threat environment. - ECP equipment will also be used to supplement SSEE Family of Systems (FoS) to meet their respective scalable and modular capacities and meet platform mission requirements including Anti-Access Area Denial (A2AD), unique signal processing capability or exploitation functionality. - In-line Blade Kits address obsolescence and resolve cybersecurity posturing while workstation upgrades place necessary technology updates to maximized operator performance. - The Next Generation Chassis modifications provide enhanced data processing and greater exposure to existing system services while creating a secondary physical hosting environment to meet constricting size, weight, power, and cooling requirements. - Intellian Antenna (formerly Inmarsat) ECP replaces obsolete and end-of-life (EOL) antenna. This antenna fulfills a High Gain Aperture requirement across the fleet as well as expandability to GX coverage and availability to interchangeable Radio Frequency (RF) modules to support current Concept of Operations (CONOPs). This antenna will also increase DoD's cybersecurity posture while ensuring all SSEE systems and their components operate with latest supported hardware. - Mission Module and ECP capabilities integrated into the SSEE FoS will enable maritime power projection by providing surface vessels the ability to disrupt, deny, degrade and defeat adversary (state and non-state) use of the radio frequency spectrum, improving the Fleet's ability to communicate and operate therein. These systems will be deployed supporting Assured Command and Control, Battlespace Awareness, and Integrated Fires. - The Navy Tactical Data Network (NTDN) is a cybersecurity initiative enabling National/Tactical Integration with U.S. Navy Surface Cryptologic Systems by deploying NSAnet afloat with special SIGINT processing capabilities, enterprise services, and a mission data repository allowing automated synchronization with (National Security Agency (NSA) databases. This ECP will back-fit force-level SSEE Increment F(V)1/2 systems as well as integrating the shore component with CLASSIC REACH. NTDN Network & Information Technology (IT) infrastructure (afloat & shore) that will be connected to the Automated Digital Network System (ADNS) Increment 3 Routers, Switch, Tac Lane, Wide Area Network (WAN) Optimizer, & Server, Cross Domain Solutions (CDS) appliance between NTDN and SCI-Networks, Certification and Accreditation of SSEE FoS on peer-intranet NSA enclave afloat. In addition, an NTDN shore component will be deployed to support data flow to/from appropriate NSA data bases. - ECP equipment will be used to enable SSEE Increment F(V)7/8 (previously referred to as Tactical Cryptologic System(TCS)) to meet its scalable and modular capacity. Currently this funds Blade Replacement Kits to address IBM/Lenovo server replacement (IBM servers have been sold to Lenovo, a foreign owned company). Currently this funds Blade Replacement Kits to address IBM/Lenovo server replacement (IBM servers have been sold to Lenovo, a foreign owned company).		
[P3A / 1U017 SSEE Increment F (All Variants)]: The SSEE Increment F (All Variants) program is an incremental acquisition, Commercial Off-The-Shelf/Government Off-The-Shelf (COTS/GOTS) program designed as the building block to improve the Information Warfare (IW) exploitation / Information Operations (IO) / non-kinetic and subsequent tactical cryptologic capability across Navy surface combatant platforms. SSEE Increment F and its variants provides the afloat IW / cryptologist with IO / non-kinetic capabilities and subsequent threat identification and analysis of Communications Intelligence as well as queuing of radio direction finding assets. Equipment includes receivers, Radio Frequency management systems, recorders, audio distribution systems, computers, antennas and ancillary hardware. The system is upgraded incrementally as improvements are developed. The system design permits the rapid insertion of new and emerging Pre-Planned Product Improvement (P3I) to address the evolving threat and delivery through Engineering Change Proposals (ECP). The system utilizes generic processor technology to counteract obsolescence issues with digital signal processing /field programmable gate array technologies and provide software receivers for ease of modification to deal with known and projected threat Signals of Interest (SOI). Automated signal acquisition and integrated radio direction finding are incorporated into the SSEE Increment F(V)1/2 system.		
SSEE Increment F also includes a small form factor variant, SSEE Increment F(V)7/8 (previously referred to as Tactical Cryptologic Systems (TCS)), which meets IW / IO / non-kinetic and subsequent tactical cryptologic capability onboard Arleigh Burke Class Destroyers (DDG) Flight I or other designated platforms as a replacement for select SSEE Increment E variants and legacy signals intelligence systems and is both scalable and modular to allow tailorable configurations to meet platform or mission specific requirements.		
[P3A - 2 / 1U019 SSEE Modifications]: SSEE Modifications is a classified Navy tactical signals intelligence frequency extension capability that will be integrated into SSEE systems. This capability is broken into two major components including Paragon which provides detection, collection, processing, IO and display of communication intelligence data from hostile, high threat and adversary platforms in select frequency		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 5: Reconnaissance Equipment		P-1 Line Item Number / Title: 2360 / Shipboard IW Exploit
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
ranges that are not prosecuted or countered today, and the Graywing subsystem which is an advanced common data link system that will be integrated into SSEE systems. It is a critical component of "Ballistic Missile Defense, Executive Committee, Anti-Submarine Warfare, Chief of Naval Operations, Executive Board IO Countermeasure Red Flash" initiative (details held at a higher classification level).		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019	
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 5: Reconnaissance Equipment						P-1 Line Item Number / Title: 2360 / Shipboard IW Exploit			
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: N/A			
Line Item MDAP/MAIS Code: N/A									

Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / Shipboard IW Exploit	P-5a			- / 602.789	- / 52.223	- / 53.310	- / 39.840	- / 0.000	- / 39.840
P-3a	1 / 1U017 SSEE Increment F (All Variants) (TBD)				- / 535.423	- / 121.219	- / 103.842	- / 80.972	- / 0.000	- / 80.972
P-3a	2 / 1U019 SSEE Modifications (Upgrade)				- / 52.626	- / 43.173	- / 60.951	- / 73.946	- / 0.000	- / 73.946
P-40	Total Gross/Weapon System Cost				- / 1,190.838	- / 216.615	- / 218.103	- / 194.758	- / 0.000	- / 194.758

Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / Shipboard IW Exploit	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / 1U017 SSEE Increment F (All Variants) (TBD)				- / 55.968	- / 95.823	- / 79.272	- / 23.509	Continuing	Continuing
P-3a	2 / 1U019 SSEE Modifications (Upgrade)				- / 82.260	- / 87.194	- / 85.528	- / 22.961	Continuing	Continuing
P-40	Total Gross/Weapon System Cost				- / 235.478	- / 286.193	- / 344.917	- / 297.453	Continuing	Continuing

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:

The Shipboard IW budget supports SSEE Increment E Red Falcon antenna replacements; SSEE Increment F, its variants, and Engineering Change Proposals to maintain pace with modernization and signal threats; SSEE MODS; Integrated Communications and Data System (ICADS); and Navy Tactical Data Networks (NTDN). The SSEE Family of Systems (FoS) includes variants which introduce scalability and configuration modularity through a permanently installed host Below Deck Core system and Topside Infrastructure (Topside Antennas) supplemented with mission modules to meet platform mission requirements including Anti-Access Area Denial (A2AD), unique signal processing capability or exploitation functionality. Mission module and ECP capabilities integrated into the SSEE Systems will enable maritime power projection by providing surface vessels the ability disrupt, deny, degrade and defeat adversary (state and non-state) use of radio frequency spectrum, improving the Fleet's ability to communicate and operate therein. These systems will be deployed supporting Assured Command and Control, Battlespace Awareness, and Integrated Fires.

SSEE Increment F (V)7/8 (or previously referred to as Tactical Cryptologic System (TCS)) is a variant of the base SSEE Increment F (V)1/2 to better identify the individual costs for each system variant.

Procurements are tied to ship availabilities balanced against respective production lead times. Procurement UPC's for SSEE Increment F (all variants) and SSEE Modification are based on contract quantity discounts; SSEE procurements are awarded with SSEE OPN, SSEE SCN, Foreign Military Sales (FMS), and Coast Guard procurement to achieve the best value for the government.

SSEE Increment F (V) 1/2 - FY20 marks the final ordering year of the classified production contract for SSEE Increment F (V)1/2 procurements; no follow on contract is planned due to planned Spectral production beginning in FY23. To ensure both the lowest risk to delivery schedules and unit cost, FY20 procures the last three (3) SSEE Increment F (V)1/2 OPN systems required for fielding in FY21 and FY22. Due to current ship avails, four (4) FY19 systems will not be installed afloat until FY22. A minimum five (5) system procurements are required in FY19 to maintain production line operability and to receive unit quantity discounts (details held at a higher classification level).

PROCUREMENT DATA:

Major FY20 funding will procure:

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 5: Reconnaissance Equipment		P-1 Line Item Number / Title: 2360 / Shipboard IW Exploit
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
(3) SSEE Increment F(V)1/2 (4) SSEE Increment F(V)7/8- Two (2) Below Deck, Core Systems and Infrastructures and two (2) Shore systems (8) SSEE Modifications Systems (1) IW Training Equipment (4) NTDN/Classic Reach Systems. Various Engineering Change Proposals and mission modules supporting host system functionality		

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5						P-1 Line Item Number / Title: 2360 / Shipboard IW Exploit						Item Number / Title [DODIC]: 1 / Shipboard IW Exploit						
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Resource Summary				Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total				
Procurement Quantity <i>(Units in Each)</i>				-		-		-		-		-		-				
Gross/Weapon System Cost <i>(\$ in Millions)</i>				602.789		52.223		53.310		39.840		0.000		39.840				
Less PY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Net Procurement (P-1) <i>(\$ in Millions)</i>				602.789		52.223		53.310		39.840		0.000		39.840				
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Total Obligation Authority <i>(\$ in Millions)</i>				602.789		52.223		53.310		39.840		0.000		39.840				
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																		
Initial Spares <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>				-		-		-		-		-		-				
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Hardware - Hardware - 1U017 - SSEE Increment F(V)1/2 Shore Procurement Cost																		
Recurring Cost																		
1.1.1) SSEE Increment F (V)1/2 Shore Procurement (Prior Years) ⁽¹⁾	-	-	44.784	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	44.784	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Hardware - Hardware - 1U017 - SSEE Increment F(V)1/2 Shore Procurement Cost	-	-	44.784	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Hardware - 1U013 SSEE Increment E ECP Cost																		
Recurring Cost																		
2.1.1) SSEE Inc E ECPs (Prior Years) ⁽²⁾	-	-	309.995	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
2.1.2) Red Falcon Antennas ^(†)	80.000	10	0.800	81.000	10	0.810	82.000	10	0.820	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	310.795	-	-	0.810	-	-	0.820	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Hardware - 1U013 SSEE Increment E ECP Cost	-	-	310.795	-	-	0.810	-	-	0.820	-	-	0.000	-	-	0.000	-	-	0.000
Hardware - 1U019 SSEE Modifications (SSEE MODS) Shore Cost																		
Recurring Cost																		

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5						P-1 Line Item Number / Title: 2360 / Shipboard IW Exploit						Item Number / Title [DODIC]: 1 / Shipboard IW Exploit						
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
4.1.1) SSEE Modifications (SSEE MODS) - Shore ^(†) ⁽³⁾	8,719.600	5	43.598	5,525.000	2	11.050	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	43.598	-	-	11.050	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Hardware - 1U019 SSEE Modifications (SSEE MODS) Shore Cost	-	-	43.598	-	-	11.050	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Hardware - 1U020 SSEE Modifications (SSEE MODS) ECP - Ship Cost																		
Recurring Cost																		
5.1.2) SSEE Modifications ECP Dish Feed Training Site Infrastructure - Shore ^(†)	-	-	0.000	449.000	2	0.898	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	0.000	-	-	0.898	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Hardware - 1U020 SSEE Modifications (SSEE MODS) ECP - Ship Cost	-	-	0.000	-	-	0.898	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Hardware - 1U029 Information Warfare (IW) Training Equipment Cost																		
Recurring Cost																		
6.1.1) Information Warfare (IW) Training Equipment ^(†) ⁽⁴⁾	975.471	17	16.583	2,989.000	1	2.989	3,040.000	1	3.040	3,091.000	1	3.091	-	-	0.000	3,091.000	1	3.091
Subtotal: Recurring Cost	-	-	16.583	-	-	2.989	-	-	3.040	-	-	3.091	-	-	0.000	-	-	3.091
Subtotal: Hardware - 1U029 Information Warfare (IW) Training Equipment Cost	-	-	16.583	-	-	2.989	-	-	3.040	-	-	3.091	-	-	0.000	-	-	3.091
Hardware - 1U060 ICADS Cost																		
Recurring Cost																		
7.1.1) ICADS Increment I ^(†)	-	-	0.000	-	-	0.000	4,310.000	1	4.310	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	0.000	-	-	0.000	-	-	4.310	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Hardware - 1U060 ICADS Cost	-	-	0.000	-	-	0.000	-	-	4.310	-	-	0.000	-	-	0.000	-	-	0.000
Hardware - 1U014 SSEE Increment F (All Variants) ECP Cost																		
Recurring Cost																		
8.1.1) SSEE Increment F (All Variants) ECP Prior Years ⁽⁵⁾	-	-	44.779	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000

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ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
8.1.3) SSEE Increment F (V)1/2 In- line Blade Kits ^(†)	666.000	12	7.992	677.333	6	4.064	689.000	5	3.445	700.550	3	2.102	-	-	0.000	700.550	3	2.102
8.1.4) SSEE Increment F (V)1/2 & (V)7/8 ECP - Next Generation Chassis ^(††)	-	-	0.000	-	-	0.000	478.000	10	4.780	486.100	10	4.861	-	-	0.000	486.100	10	4.861
8.1.5) SSEE Increment F (V)1/2 ECP - Processing Upgrades Workstations ^(†)	-	-	0.000	65.000	24	1.560	68.000	35	2.380	-	-	0.000	-	-	0.000	-	-	0.000
8.1.6) SSEE Increment F (V)1/2 ECP - Intellian Antenna ^{(††) (6)}	-	-	0.000	-	-	0.000	181.000	7	1.267	184.000	5	0.920	-	-	0.000	184.000	5	0.920
8.1.7) SSEE Increment F (V)1/2 ECP - Fury Data Right ^(†)	-	-	0.000	1,047.000	1	1.047	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
8.1.8) SSEE Increment F (V)1/2 ECP - 40Mhz Delta Lot 9 Backfits ^(†)	1,384.500	4	5.538	190.000	24	4.560	192.000	22	4.224	195.300	5	0.977	-	-	0.000	195.300	5	0.977
8.1.9) SSEE Increment F (V)1/2 & (V)7/8 ECP - Net App Filer ^(†)	90.000	17	1.530	92.000	20	1.840	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
8.1.10) SSEE Increment F(V)7/8 ECP IO Equipment Modules ^(†)	696.571	14	9.752	711.900	6	4.271	724.000	6	4.344	736.300	5	3.682	-	-	0.000	736.300	5	3.682
8.1.11) SSEE Increment F(V)7/8 SSC-W ECP Modules ^(†)	542.000	5	2.710	551.167	6	3.307	560.700	6	3.364	570.100	5	2.851	-	-	0.000	570.100	5	2.851
8.1.12) SSEE Increment F(V)7/8 SSC-S ECP Modules ^(†)	296.000	5	1.480	301.000	6	1.806	306.167	6	1.837	311.300	5	1.557	-	-	0.000	311.300	5	1.557
8.1.13) SSEE Increment F(V)7/8	221.222	9	1.991	226.833	6	1.361	230.667	6	1.384	234.500	5	1.173	-	-	0.000	234.500	5	1.173

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ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Red Falcon ECP Modules ^(†)																		
8.1.14) SSEE Increment F(V)7/8 Medusa ECP Modules ^(†)	283.429	7	1.984	289.667	6	1.738	294.500	6	1.767	299.500	5	1.498	-	-	0.000	299.500	5	1.498
8.1.15) NTDN/Classic Reach Systems ^{(†) (7)}	-	-	0.000	-	-	0.000	481.000	4	1.924	500.000	4	2.000	-	-	0.000	500.000	4	2.000
8.1.17) SSEE Increment F (V)7/8 ECP Blade Kits ^{(†) (8)}	668.000	32	21.376	555.000	10	5.550	564.400	12	6.773	574.000	3	1.722	-	-	0.000	574.000	3	1.722
Subtotal: Recurring Cost	-	-	99.132	-	-	31.104	-	-	37.489	-	-	23.343	-	-	0.000	-	-	23.343
Subtotal: Hardware - 1U014 SSEE Increment F (All Variants) ECP Cost	-	-	99.132	-	-	31.104	-	-	37.489	-	-	23.343	-	-	0.000	-	-	23.343
Support - 1U555 Production Support Cost																		
9.1) Production Support (Prior Years) ⁽⁹⁾	-	-	6.346	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
9.2) SSEE Inc E and SSEE Inc E ECP Production Support	-	-	1.603	-	-	0.115	-	-	0.129	-	-	0.000	-	-	0.000	-	-	0.000
9.5) ICADS Production Support	-	-	0.000	-	-	0.153	-	-	0.259	-	-	0.000	-	-	0.000	-	-	0.000
9.6) SSEE Inc F (All Var) & SSEE Inc F (All Var) ECPs - Production Support	-	-	4.866	-	-	1.731	-	-	2.266	-	-	1.488	-	-	0.000	-	-	1.488
9.7) SSEE MOD Shore Production Support	-	-	0.000	-	-	0.663	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Support - 1U555 Production Support Cost	-	-	12.815	-	-	2.662	-	-	2.654	-	-	1.488	-	-	0.000	-	-	1.488
Support - 1U776 / 1U777 Installation Cost																		
10.1) Install/DSA (Prior Years) ⁽¹⁰⁾	-	-	70.974	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
10.2) Red Falcon DSA	-	-	0.110	-	-	0.200	-	-	0.220	-	-	0.100	-	-	0.000	-	-	0.100
10.3) Red Falcon Install	-	-	0.000	-	-	0.330	-	-	0.340	-	-	0.350	-	-	0.000	-	-	0.350
10.8) SSEE Modifications LBTF Paragon/Graywing Install - Shore	-	-	0.000	-	-	0.590	-	-	1.200	-	-	1.220	-	-	0.000	-	-	1.220
10.11) SSEE Increment F(V)1/2 & (V)7/8 ECP -	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.900	-	-	0.000	-	-	0.900

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ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Next Generation Chassis - Install																		
10.12) SSEE Increment F(V)1/2 & (V)7/8 ECP - Next Generation Chassis - DSA	-	-	0.000	-	-	0.000	-	-	0.150	-	-	0.201	-	-	0.000	-	-	0.201
10.13) SSEE Increment F(V)1/2 Processing Upgrade Workstations - Install	-	-	0.000	-	-	0.000	-	-	0.120	-	-	0.178	-	-	0.000	-	-	0.178
10.14) SSEE Increment F(V)1/2 Intellian Antennas - Install ⁽¹¹⁾	-	-	0.000	-	-	0.000	-	-	0.000	-	-	5.695	-	-	0.000	-	-	5.695
10.15) SSEE Increment F(V)1/2 Intellian Antennas - DSA ⁽¹²⁾	-	-	0.000	-	-	0.000	-	-	1.365	-	-	1.547	-	-	0.000	-	-	1.547
10.16) SSEE Increment F(V)1/2 NTDN/Classic Reach Systems - Install	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.300	-	-	0.000	-	-	0.300
10.17) SSEE Increment F(V)1/2 NTDN/Classic Reach Systems - DSA	-	-	0.000	-	-	0.000	-	-	0.080	-	-	0.121	-	-	0.000	-	-	0.121
10.18) SSEE Increment F (V)7/8 ECP Blade Kits Install	-	-	1.420	-	-	0.866	-	-	0.734	-	-	0.896	-	-	0.000	-	-	0.896
10.19) SSEE Increment F (V)7/8 ECP Blade Kits DSA	-	-	2.578	-	-	0.724	-	-	0.788	-	-	0.410	-	-	0.000	-	-	0.410
Subtotal: Support - 1U776 / 1U777 Installation Cost	-	-	75.082	-	-	2.710	-	-	4.997	-	-	11.918	-	-	0.000	-	-	11.918
Gross/Weapon System Cost	-	-	602.789	-	-	52.223	-	-	53.310	-	-	39.840	-	-	0.000	-	-	39.840
Remarks: [Hardware] Ship's Signal Exploitation Equipment Modifications (SSEE MODS) is a classified Navy tactical signals intelligence frequency extension capability that integrates and interoperates with SSEE systems. This capability is broken into two major components, Paragon which provides simultaneous detection, collection, processing, Information Operations (IO) and display of communication intelligence data from hostile, high threat and adversary platforms in select frequency ranges that are not prosecuted or countered with SSEE Increment F (ALL Variants), and the Graywing subsystem which is an advanced common data link system that integrates with SSEE Increment F systems. It is a critical component of "Ballistic Missile Defense, Executive Committee, Anti-Submarine Warfare, Chief of Naval Operations, Executive Board Information Operation (IO) Countermeasure Red Flash" (details held at a higher classification level).																		

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Exhibit P-5, Cost Analysis: PB 2020 Navy		Date: March 2019
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ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
[Hardware] Ship's Signal Exploitation Equipment Modifications (SSEE MODS) Engineering Change Proposal (ECP)/Obsolescence procures Commercial Off-The-Shelf/Non-Developmental Item (NDI) equipment to replace obsolete and end-of-life (EOL) equipment for the Ship's Signal Exploitation Equipment (SSEE) MODS program. ECP incorporates Pre-Planned Product Improvements (P3I) for the acquisition and localization of the latest Signals of Interest (SOI) and Information Operations (IO). ECP maintains and improves upon SSEE MODS capability and relevance within a rapidly evolving threat environment. (t) indicates the presence of a P-5a Footnotes: (1) SSEE Inc F (V)1/2 Prior Years represent Qty 6. (2) SSEE Increment E ECP prior year Procurements (includes DRT, Medusa and XP Eradication); Qty 206. (3) SSEE Modifications (SSEE MODS) - Shore - Includes Land Based Test Facility (LBTF) (4) Cost increase for training equipment starting in FY18 is attributed the inclusion of the STALLION mission module which was not included with initial estimates. (5) SSEE Increment F (All Variants) ECP prior year Procurements (includes CUB Replacement, LRIP to FRP Back fit Kits, Red Falcon Upgrade Kits, LBTF Refresh Kits, Blade Delta Kits, Windows 10 NRE, JIRA NRE, V 7/8 Recorders and RFCU kits); Qty 54. (6) SSEE Increment F (V)1/2 ECP - Intellion Antenna previously known as Inmarsat Antennas (7) As part of the National Security Agency's (NSA) "Secure the Network" & "Secure the Enterprise" initiatives, NSA & C10F (10th Fleet) requires all systems, including U.S. Navy Surface Cryptologic Systems to migrate to NSAnet. Navy Tactical Data Network (NTDN) is the cybersecurity response to enable National/Tactical Integration with US Navy Surface Cryptologic Systems by deploying NSAnet afloat with special SIGINT processing capabilities, enterprise services, and a mission data repository allowing automated synchronization with NSA databases. (8) Procurement of Blade Replacement Kits to address IBM/Lenovo server replacement (IBM servers has been sold to Lenovo, a foreign owned company). These kits are able to support system Technical Refresh, Windows 10 operating system compliance and replace obsolete parts. (9) Prior year Production Support (Includes SSEE Increment F (ALL variants) ECP's, SSEE Increment F (V)1/2 Shore, SSEE Increment E ECP, and SSEE Modifications Costs). (10) Prior year Install/DSA Costs (includes SSEE Modifications Shore, SSEE Increment F(V)1/2 Shore and SSEE Increment E ECP Install/DSA Costs including DRT/Medusa/XP Eradication). (11) The installation costs of the Intellian Antennas include costs to design and procure platform specific pedestals required for the installation of the antennas. The Intellian Antennas need to sit high enough on the platform so there is no interference from other shipboard antennas. (12) Cost increase between FY19 and FY20 is due to the 25% DSA for FY19 procurements being applied in FY20.		

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Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$ K)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
2.1.2) Red Falcon Antennas		2018	SSC PAC / San Diego	WR	San Diego, CA	Apr 2018	Nov 2018	10	81.000	Y		
2.1.2) Red Falcon Antennas		2019	SSC PAC / San Diego	WR	San Diego, CA	Jan 2019	Aug 2019	10	82.000	Y		
4.1.1) SSEE Modifications (SSEE MODS) - Shore		2018	Argon ST / Arlington, VA	C / FFP	San Diego, CA	Jul 2018	Oct 2019	2	5,525.000	Y		
5.1.2) SSEE Modifications ECP Dish Feed Training Site Infrastructure - Shore		2018	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Jan 2019	Jan 2020	2	449.000	Y		
6.1.1) Information Warfare (IW) Training Equipment		2018	SSC PAC / San Diego, CA	WR	San Diego, CA	Nov 2017	Aug 2018	1	2,989.000	Y		
6.1.1) Information Warfare (IW) Training Equipment		2019	SSC PAC / San Diego, CA	WR	San Diego, CA	Nov 2018	Aug 2019	1	3,040.000	Y		
6.1.1) Information Warfare (IW) Training Equipment		2020	SSC PAC / San Diego, CA	WR	San Diego, CA	Nov 2019	Aug 2020	1	3,091.000	Y		
7.1.1) ICADS Increment I		2019	TBD / TBD	C / TBD	TBD	Jan 2019	Jan 2020	1	4,310.000	Y		
8.1.3) SSEE Increment F (V)1/2 In- line Blade Kits		2018	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Apr 2018	Apr 2019	6	677.333	Y		
8.1.3) SSEE Increment F (V)1/2 In- line Blade Kits		2019	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Jan 2019	Jan 2020	5	689.000	Y		
8.1.3) SSEE Increment F (V)1/2 In- line Blade Kits		2020	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Jan 2020	Jan 2021	3	700.550	Y		
8.1.4) SSEE Increment F (V)1/2 & (V)7/8 ECP - Next Generation Chassis		2019	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Jan 2019	Jan 2020	10	478.000	N	Oct 2018	
8.1.4) SSEE Increment F (V)1/2 & (V)7/8 ECP - Next Generation Chassis		2020	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Jan 2020	Jan 2021	10	486.100	N	Oct 2018	
8.1.5) SSEE Increment F (V)1/2 ECP - Processing Upgrades Workstations		2018	SSC LANT/TBD / Charleston, SC	C / FFP	San Diego, CA	Jul 2018	Jul 2019	24	65.000	Y		
8.1.5) SSEE Increment F (V)1/2 ECP - Processing Upgrades Workstations		2019	SSC LANT/TBD / Charleston, SC	C / FFP	San Diego, CA	Jan 2019	Jan 2020	35	68.000	Y		
8.1.6) SSEE Increment F (V)1/2 ECP - Intellian Antenna		2019	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Jan 2019	Jan 2020	7	181.000	N	Oct 2018	
8.1.6) SSEE Increment F (V)1/2 ECP - Intellian Antenna		2020	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Jan 2020	Jan 2021	5	184.000	N	Oct 2018	
8.1.7) SSEE Increment F (V)1/2 ECP - Fury Data Right		2018	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Jan 2018	Jan 2018	1	1,047.000	Y		
8.1.8) SSEE Increment F (V)1/2 ECP - 40Mhz Delta Lot 9 Backfits		2018	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Jul 2018	Jul 2019	24	190.000	Y		

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Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
8.1.8) SSEE Increment F (V)1/2 ECP - 40Mhz Delta Lot 9 Backfits		2019	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Jan 2019	Jan 2020	22	192.000	Y		
8.1.8) SSEE Increment F (V)1/2 ECP - 40Mhz Delta Lot 9 Backfits		2020	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Jan 2020	Jan 2021	5	195.300	Y		
8.1.9) SSEE Increment F (V)1/2 & (V)7/8 ECP - Net App Filer		2018	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Jul 2018	Jul 2019	20	92.000	Y		
8.1.10) SSEE Increment F(V)7/8 ECP IO Equipment Modules		2018	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Apr 2018	Apr 2019	6	711.900	Y		
8.1.10) SSEE Increment F(V)7/8 ECP IO Equipment Modules		2019	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Jan 2019	Jan 2020	6	724.000	Y		
8.1.10) SSEE Increment F(V)7/8 ECP IO Equipment Modules		2020	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Jan 2020	Jan 2021	5	736.300	Y		
8.1.11) SSEE Increment F(V)7/8 SSC-W ECP Modules		2018	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Apr 2018	Apr 2019	6	551.167	Y		
8.1.11) SSEE Increment F(V)7/8 SSC-W ECP Modules		2019	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Jan 2019	Jan 2020	6	560.700	Y		
8.1.11) SSEE Increment F(V)7/8 SSC-W ECP Modules		2020	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Jan 2020	Jan 2021	5	570.100	Y		
8.1.12) SSEE Increment F(V)7/8 SSC-S ECP Modules		2018	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Apr 2018	Apr 2019	6	301.000	Y		
8.1.12) SSEE Increment F(V)7/8 SSC-S ECP Modules		2019	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Jan 2019	Jan 2020	6	306.167	Y		
8.1.12) SSEE Increment F(V)7/8 SSC-S ECP Modules		2020	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Jan 2020	Jan 2021	5	311.300	Y		
8.1.13) SSEE Increment F(V)7/8 Red Falcon ECP Modules		2018	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Apr 2018	Apr 2019	6	226.833	Y		
8.1.13) SSEE Increment F(V)7/8 Red Falcon ECP Modules		2019	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Jan 2019	Jan 2020	6	230.667	Y		
8.1.13) SSEE Increment F(V)7/8 Red Falcon ECP Modules		2020	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Jan 2020	Jan 2021	5	234.500	Y		
8.1.14) SSEE Increment F(V)7/8 Medusa ECP Modules		2018	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Apr 2018	Apr 2019	6	289.667	Y		
8.1.14) SSEE Increment F(V)7/8 Medusa ECP Modules		2019	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Feb 2019	Feb 2020	6	294.500	Y		
8.1.14) SSEE Increment F(V)7/8 Medusa ECP Modules		2020	ARGON / Fairfax, VA	C / FFP	San Diego, CA	Feb 2020	Feb 2021	5	299.500	Y		
8.1.15) NTDN/Classic Reach Systems		2019	VARIOUS / TBD	C / TBD	San Diego, CA	Jan 2019	Jan 2020	4	481.000	N	Oct 2018	
8.1.15) NTDN/Classic Reach Systems		2020	VARIOUS / TBD	C / TBD	San Diego, CA	Jan 2020	Jan 2021	4	500.000	N	Oct 2019	

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Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
8.1.17) SSEE Increment F (V)7/8 ECP Blade Kits		2018	ARGON - SSEE INC F ECP / Fairfax, VA	C / TBD	** NO PCO **	Oct 2017	Oct 2018	10	555.000	N		
8.1.17) SSEE Increment F (V)7/8 ECP Blade Kits		2019	ARGON - SSEE INC F ECP / Fairfax, VA	C / TBD	** NO PCO **	Oct 2018	Oct 2019	12	564.400	N		
8.1.17) SSEE Increment F (V)7/8 ECP Blade Kits		2020	ARGON - SSEE INC F ECP / Fairfax, VA	C / TBD	NSMA, San Diego	Oct 2019	Oct 2020	3	574.000	Y		

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5					P-1 Line Item Number / Title: 2360 / Shipboard IW Exploit					Modification Number / Title: 1 / 1U017 SSEE Increment F (All Variants)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	535.423	121.219	103.842	80.972	0.000	80.972	55.968	95.823	79.272	23.509	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	535.423	121.219	103.842	80.972	0.000	80.972	55.968	95.823	79.272	23.509	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	535.423	121.219	103.842	80.972	0.000	80.972	55.968	95.823	79.272	23.509	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: The Ship Signal Exploitation Equipment (SSEE) Increment F (All Variants) Program will provide Carrier Strike Groups with Information Operation (IO) / non-kinetic capabilities and the subsequent ability to exploit Signals Of Interest (SOI) by providing a state-of-the-art system which detects, acquires, and collects data on any potential threat. Unit Price Cost (UPC) for SSEE Family of Systems changes from year to year based on contracted quantity discounts received from the vendor. They are updated each year to account for current procurement plans. SSEE OPN procurements maybe awarded with SSEE New Construction (SCN), Foreign Military Sales (FMS), and U.S. Coast Guard system procurements of same types to achieve the best value for the government. [SSEE Increment F(V)1/2 Systems (Ship)] The Ship Signal Exploitation Equipment (SSEE) Inc F (All Variants) Program will provide Carrier Strike Groups with Information Operation (IO) / non-kinetic capabilities and the subsequent ability to exploit Signals Of Interest (SOI) by providing a state-of-the-art system which detects, acquires, and collects data on any potential threat. [SSEE Increment F(V)7/8 Below Deck and Core] SSEE Increment F(V)7/8 (previously referred to as Tactical Cryptologic System (TCS) is a scalable, modular variant of SSEE Increment F enabling configuration to meet platform mission requirements. SSEE Increment F(V)7/8 leverages SSEE Increment F common software, training, and logistics. SSEE Increment F(V)7/8 consists of infrastructure (Topside Antennas) and a Below Deck Core system which includes Mission Tailorable modular components to increase capabilities. [SSEE Increment F(V)7/8 Infrastructure] SSEE Increment F(V)7/8 is a scalable, modular variant of SSEE Increment F enabling configuration to meet platform mission requirements. SSEE Increment F(V)7/8 leverages SSEE Increment F common software, training, and logistics. SSEE Increment F(V)7/8 consists of infrastructure (Topside Antennas) and a Below Deck Core system which includes Mission Tailorable modular components to increase capabilities. The modularity and scalability of SSEE Increment F(V)7/8 is delivered using Engineering Change Proposal (ECP).												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5				P-1 Line Item Number / Title: 2360 / Shipboard IW Exploit						Modification Number / Title: 1 / 1U017 SSEE Increment F (All Variants)			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: [No Model Specified]				Modification Type: TBD				Related RDT&E PEs: 0304785N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: 1U017 SSEE Increment F (All Variants)													
B Kits													
Recurring													
1.1.1) SSEE Increment F(V)1/2 Systems (Ship) - NonOrganic ⁽¹³⁾	45 / 354.208	8 / 63.104	5 / 42.015	3 / 26.382	- / -	3 / 26.382	- / -	- / -	- / -	- / -	- / -	61 / 485.709	
1.1.2) SSEE Increment F(V)7/8 Below Deck and Core - Organic	7 / 21.378	5 / 18.606	8 / 31.876	2 / 8.098	- / -	2 / 8.098	6 / 24.706	11 / 46.064	9 / 38.329	- / -	- / -	48 / 189.057	
1.1.3) SSEE Increment F(V)7/8 Infrastructure - NonOrganic	7 / 6.270	5 / 2.797	8 / 4.551	2 / 1.957	- / -	2 / 1.957	6 / 5.971	11 / 11.133	9 / 9.264	- / -	- / -	48 / 41.943	
1.1.4) SSEE Increment F(V)7/8 Shore - Below Deck and Core - Organic ⁽¹⁴⁾	7 / 14.636	1 / 3.721	- / -	2 / 8.098	- / -	2 / 8.098	- / -	- / -	- / -	- / -	- / -	10 / 26.455	
1.1.5) SSEE Increment F(V)7/8 Shore Infrastructure - NonOrganic	7 / 15.608	1 / 0.559	- / -	2 / 1.957	- / -	2 / 1.957	- / -	- / -	- / -	- / -	- / -	10 / 18.124	
Subtotal: Recurring	- / 412.100	- / 88.787	- / 78.442	- / 46.492	- / -	- / 46.492	- / 30.677	- / 57.197	- / 47.593	- / -	- / 0.000	- / 761.288	
Subtotal: 1U017 SSEE Increment F (All Variants)	73 / 412.100	20 / 88.787	21 / 78.442	11 / 46.492	- / -	11 / 46.492	12 / 30.677	22 / 57.197	18 / 47.593	- / -	- / -	177 / 761.288	
Subtotal: Procurement, All Modification Items	- / 412.100	- / 88.787	- / 78.442	- / 46.492	- / -	- / 46.492	- / 30.677	- / 57.197	- / 47.593	- / -	- / 0.000	- / 761.288	
Support (All Modification Items)													
2.1) Production Support (Ship) Increment F (V) 1/2 and (V) 7/8	- / 25.145	- / 5.233	- / 3.000	- / 2.347	- / 0.000	- / 2.347	- / 2.283	- / 3.934	- / 2.606	- / 1.887	Continuing	Continuing	
2.2) DSA (Ship)	- / 21.264	- / 4.148	- / 4.082	- / 4.603	- / 0.000	- / 4.603	- / 5.038	- / 6.144	- / 4.730	- / 1.368	Continuing	Continuing	
Subtotal: Support	- / 46.409	- / 9.381	- / 7.082	- / 6.950	- / -	- / 6.950	- / 7.321	- / 10.078	- / 7.336	- / 3.255	Continuing	Continuing	
Installation													
Modification Item 1 of 1: 1U017 SSEE Increment F (All Variants)	- / 76.914	- / 23.051	- / 18.318	- / 27.530	- / 0.000	- / 27.530	- / 17.970	- / 28.548	- / 24.343	- / 20.254	- / 0.000	- / 236.928	
Subtotal: Installation	- / 76.914	- / 23.051	- / 18.318	- / 27.530	- / -	- / 27.530	- / 17.970	- / 28.548	- / 24.343	- / 20.254	- / 0.000	- / 236.928	
Total													
Total Cost (Procurement + Support + Installation)	535.423	121.219	103.842	80.972	0.000	80.972	55.968	95.823	79.272	23.509	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy							Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5				P-1 Line Item Number / Title: 2360 / Shipboard IW Exploit				Modification Number / Title: 1 / 1U017 SSEE Increment F (All Variants)				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Modification Item 1 of 1: 1U017 SSEE Increment F (All Variants)												
Manufacturer Information												
Manufacturer Name: ARGON - SSEE INC F (V)1/2 ⁽¹⁵⁾							Manufacturer Location: Fairfax, VA					
Administrative Leadtime (in Months): 6							Production Leadtime (in Months): 16					
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates	Apr 2018	Apr 2019	Apr 2020									
Delivery Dates	Aug 2019	Aug 2020	Aug 2021									
Manufacturer Name: ARGON - SSEE INF F (V)7/8 ⁽¹⁶⁾							Manufacturer Location: Fairfax, VA					
Administrative Leadtime (in Months): 3							Production Leadtime (in Months): 12					
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates	Apr 2018	Jan 2019	Jan 2020									
Delivery Dates	Aug 2019	Jan 2020	Jan 2021									
Manufacturer Name: ARGON- SSEE INF F (V)7/8 ⁽¹⁷⁾							Manufacturer Location: Fairfax, VA					
Administrative Leadtime (in Months): 3							Production Leadtime (in Months): 12					
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates	Apr 2018	Jan 2019	Jan 2020									
Delivery Dates	Aug 2019	Jan 2020	Jan 2021									
Installation Information												
Method of Implementation: Ship:: Installation Name: SSEE Increment F(V)1/2 Systems (Ship)												
Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	36 / 75.114	8 / 16.549	1 / 2.104	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	45 / 93.767
FY 2018	- / -	- / -	3 / 6.312	5 / 10.698	0 / 0.000	5 / 10.698	- / -	- / -	- / -	- / -	0 / 0.000	8 / 17.010
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	1 / 2.176	4 / 8.852	- / -	- / -	0 / 0.000	5 / 11.028
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 6.639	- / -	- / -	0 / 0.000	3 / 6.639
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -

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Exhibit P-3a, Individual Modification: PB 2020 Navy																			Date: March 2019												
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5										P-1 Line Item Number / Title: 2360 / Shipboard IW Exploit										Modification Number / Title: 1 / 1U017 SSEE Increment F (All Variants)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: 1U017 SSEE Increment F (All Variants)																															
Installation Information																															
Method of Implementation: Ship:: Installation Name: SSEE Increment F(V)1/2 Systems (Ship)																															
Installation Cost						Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total			
						Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)	
Total						36 / 75.114		8 / 16.549		4 / 8.416		5 / 10.698		0 / 0.000		5 / 10.698		1 / 2.176		7 / 15.491		- / -		- / -		0 / 0.000		61 / 128.444			
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	36	-	2	3	3	-	-	1	3	3	2	-	-	1	-	-	-	4	3	-	-	-	-	-	-	-	-	-	-	-	
Out	36	-	-	2	3	3	-	-	1	3	3	2	-	-	1	-	-	-	4	3	-	-	-	-	-	-	-	-	-	-	
Method of Implementation: IMO:: Installation Name: SSEE INC F (V) 7/8 Ship Infrastructure																															
Installation Cost						Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total			
						Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)	
Prior Years						0 / 0.900		3 / 6.102		4 / 8.274		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		7 / 15.276			
FY 2018						- / -		- / -		- / -		5 / 10.520		0 / 0.000		5 / 10.520		- / -		- / -		- / -		- / -		0 / 0.000		5 / 10.520			
FY 2019						- / -		- / -		- / -		3 / 6.312		0 / 0.000		3 / 6.312		5 / 10.700		- / -		- / -		- / -		0 / 0.000		8 / 17.012			
FY 2020						- / -		- / -		- / -		- / -		- / -		- / -		2 / 4.280		- / -		- / -		- / -		0 / 0.000		2 / 4.280			
FY 2021						- / -		- / -		- / -		- / -		- / -		- / -		- / -		6 / 13.057		- / -		- / -		0 / 0.000		6 / 13.057			
FY 2022						- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		11 / 24.343		- / -		0 / 0.000		11 / 24.343			
FY 2023						- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		9 / 20.254		0 / 0.000		9 / 20.254			
FY 2024						- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -			
To Complete						- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -			
Total						0 / 0.900		3 / 6.102		4 / 8.274		8 / 16.832		0 / 0.000		8 / 16.832		7 / 14.980		6 / 13.057		11 / 24.343		9 / 20.254		0 / 0.000		48 / 104.742			
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	1	2	2	2	-	-	4	2	2	-	5	2	-	-	-	-	2	4	-	3	4	4	-	3	4	2	-	
Out	-	-	-	-	1	2	2	2	-	-	4	2	2	-	5	2	-	-	-	-	2	4	-	3	4	4	-	3	4	2	

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5	P-1 Line Item Number / Title: 2360 / Shipboard IW Exploit	Modification Number / Title: 1 / 1U017 SSEE Increment F (All Variants)

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:

Modification Item 1 of 1: 1U017 SSEE Increment F (All Variants)

Installation Information

Method of Implementation: IMO:: Installation Name: SSEE INC F (V) 7/8 Shore Infrastructure

Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	3 / 0.900	1 / 0.400	3 / 1.221	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	7 / 2.521
FY 2018	- / -	- / -	1 / 0.407	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	1 / 0.407
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.814	- / -	- / -	- / -	0 / 0.000	2 / 0.814
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	3 / 0.900	1 / 0.400	4 / 1.628	- / -	- / -	- / -	2 / 0.814	- / -	- / -	- / -	0 / 0.000	10 / 3.742

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	3	-	-	1	-	2	-	1	1	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10
Out	3	-	-	-	1	-	2	-	1	1	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10

Method of Implementation (Organic): SSEE Increment F(V)7/8 Below Deck and Core - Not Installed	Installation Quantity: 48

Method of Implementation (Organic): SSEE Increment F(V)7/8 Shore - Below Deck and Core - Not Installed	Installation Quantity: 10

Footnotes:

(13) SSEE Increment F (V)1/2 Shore on P5 - Prior Year Quantity 6. SSEE Increment F (V) 1/2 FY20 marks the final ordering year of the classified production contract for SSEE Increment F (V)1/2 procurements; no follow on contract is planned due to planned Spectral production beginning in FY23. To ensure both the lowest risk to delivery schedules and unit cost, FY20 procurements include the last three (3) SSEE Increment F (V)1/2 OPN and SCN systems required for fielding in FY21 and FY22. Due to current ship avails, four (4) FY19 systems will not be installed afloat until FY22. A minimum five (5) system procurements are required in FY19 to maintain production line operability and to receive unit quantity discounts (details held at a higher classification level).

(14) SSEE INC F (V)7/8 FY20 shore systems supports IO software Development Operations (DevOps) environment for capability integration and for Information Assurance (IA) cybersecurity scanning to support the Commander, Tenth Fleet (C10F) directed Navy Tactical Data Network (NTDN) initiative.

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5	P-1 Line Item Number / Title: 2360 / Shipboard IW Exploit	Modification Number / Title: 1 / 1U017 SSEE Increment F (All Variants)
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
(15) SSEE Increment F (V)1/2 - FY20 administrative production lead times are based on FY18 actual time to classified contract award which includes Program of Record OPN and both USCG and SCN requirements. Combining requirements gives greatest unit cost savings to the government, but coordination across agencies requires extending contract administrative lead time. FY20 is the final ordering year for SSEE Increment F (V)1/2 procurements and no follow on contract is planned. (16) SSEE Increment F (V)7/8 FY18 contract awarded with a 16 month production time. FY19 and FY20 anticipated to be a 12 month lead time. A new SSEE Increment F (V)7/8 contract will be awarded in FY21. (17) SSEE Increment F (V)7/8 FY18 contract awarded with a 16 month production time. FY19 and FY20 anticipated to be a 12 month lead time. A new SSEE Increment F (V)7/8 contract will be awarded in FY21.		

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Exhibit P-3a, Individual Modification: PB 2020 Navy						Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5				P-1 Line Item Number / Title: 2360 / Shipboard IW Exploit				Modification Number / Title: 2 / 1U019 SSEE Modifications			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	52.626	43.173	60.951	73.946	0.000	73.946	82.260	87.194	85.528	22.961	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	52.626	43.173	60.951	73.946	0.000	73.946	82.260	87.194	85.528	22.961	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	52.626	43.173	60.951	73.946	0.000	73.946	82.260	87.194	85.528	22.961	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Ship Signal Exploitation Equipment (SSEE) Modifications is a classified Navy tactical signals intelligence frequency extension capability that integrates and interoperates with SSEE systems. This capability is broken into two major components, Paragon which provides simultaneous detection, collection, processing, Information Operations (IO) and display of communication intelligence data from hostile, high threat and adversary platforms in select frequency ranges that are not prosecuted or countered with SSEE Increment F and its variants, and the Graywing subsystem which is an advanced common data link system that integrates with SSEE Increment F systems. It is a critical component of "Ballistic Missile Defense, Executive Committee, Anti-Submarine Warfare, Chief of Naval Operations, Executive Board Information Operation (IO) Countermeasure Red Flash" (details held at a higher classification level).

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5				P-1 Line Item Number / Title: 2360 / Shipboard IW Exploit				Modification Number / Title: 2 / 1U019 SSEE Modifications					
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: Various				Modification Type: Upgrade				Related RDT&E PEs: 0304785N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: 1U019 SSEE Modifications													
B Kits													
Recurring													
1.1.1) SSEE Modifications (SSEE MODS) - NonOrganic (18)	8 / 38.467	7 / 38.675	9 / 50.570	8 / 47.168	- / -	8 / 47.168	10 / 59.962	11 / 67.080	10 / 62.018	- / -	Continuing	Continuing	
Subtotal: Recurring	- / 38.467	- / 38.675	- / 50.570	- / 47.168	- / -	- / 47.168	- / 59.962	- / 67.080	- / 62.018	- / -	Continuing	Continuing	
Subtotal: 1U019 SSEE Modifications	8 / 38.467	7 / 38.675	9 / 50.570	8 / 47.168	- / -	8 / 47.168	10 / 59.962	11 / 67.080	10 / 62.018	- / -	Continuing	Continuing	
Subtotal: Procurement, All Modification Items	- / 38.467	- / 38.675	- / 50.570	- / 47.168	- / -	- / 47.168	- / 59.962	- / 67.080	- / 62.018	- / -	Continuing	Continuing	
Support (All Modification Items)													
2.1) Production Support	- / 7.167	- / 2.321	- / 3.034	- / 2.689	- / -	- / 2.689	- / 3.394	- / 4.069	- / 3.400	- / 2.010	Continuing	Continuing	
2.2) DSA	- / 2.302	- / 0.605	- / 2.550	- / 2.951	- / -	- / 2.951	- / 2.364	- / 2.589	- / 3.010	- / 1.817	Continuing	Continuing	
Subtotal: Support	- / 9.469	- / 2.926	- / 5.584	- / 5.640	- / -	- / 5.640	- / 5.758	- / 6.658	- / 6.410	- / 3.827	Continuing	Continuing	
Installation													
Modification Item 1 of 1: 1U019 SSEE Modifications	- / 4.690	- / 1.572	- / 4.797	- / 21.138	- / 0.000	- / 21.138	- / 16.540	- / 13.456	- / 17.100	- / 19.134	Continuing	Continuing	
Subtotal: Installation	- / 4.690	- / 1.572	- / 4.797	- / 21.138	- / -	- / 21.138	- / 16.540	- / 13.456	- / 17.100	- / 19.134	Continuing	Continuing	
Total													
Total Cost (Procurement + Support + Installation)	52.626	43.173	60.951	73.946	0.000	73.946	82.260	87.194	85.528	22.961	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5										P-1 Line Item Number / Title: 2360 / Shipboard IW Exploit										Modification Number / Title: 2 / 1U019 SSEE Modifications											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: 1U019 SSEE Modifications																															
Manufacturer Information																															
Manufacturer Name: ARGON - SSEE Mods - SHIP ⁽¹⁹⁾															Manufacturer Location: Fairfax, VA																
Administrative Leadtime <i>(in Months)</i> : 3															Production Leadtime <i>(in Months)</i> : 15																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates		Jul 2018				Jan 2019				Jan 2020																					
Delivery Dates		Oct 2019				Apr 2020				Apr 2021																					
Installation Information																															
Method of Implementation: Ship:: Installation Name: SSEE Modifications (SSEE MODS)																															
Installation Cost		Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total								
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)								
Prior Years		4 / 4.690		1 / 1.572		3 / 4.797		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		8 / 11.059							
FY 2018		- / -		- / -		- / -		7 / 11.382		0 / 0.000		7 / 11.382		- / -		- / -		- / -		- / -		0 / 0.000		7 / 11.382							
FY 2019		- / -		- / -		- / -		6 / 9.756		0 / 0.000		6 / 9.756		3 / 4.962		- / -		- / -		- / -		0 / 0.000		9 / 14.718							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		7 / 11.578		1 / 1.682		- / -		- / -		0 / 0.000		8 / 13.260							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		7 / 11.774		3 / 5.130		- / -		0 / 0.000		10 / 16.904							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		7 / 11.970		4 / 6.956		0 / 0.000		11 / 18.926							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		7 / 12.178		Continuing		Continuing							
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		4 / 4.690		1 / 1.572		3 / 4.797		13 / 21.138		0 / 0.000		13 / 21.138		10 / 16.540		8 / 13.456		10 / 17.100		11 / 19.134		Continuing		Continuing							
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	4	1	-	-	-	3	-	-	-	2	3	5	3	3	-	3	4	1	-	3	4	3	-	3	4	3	1	3	4	3	63
Out	4	-	1	-	-	-	3	-	-	-	2	3	5	3	3	-	3	4	1	-	3	4	3	-	3	4	3	1	3	7	63
Footnotes: ⁽¹⁸⁾ SSEE Modifications FY18 procurements includes a FY18 Congressional increase for three (3) additional systems for a total of (9) systems (7 ship/2 Shore). SSEE Modifications Shore on P5 - Prior Year quantity five (5). ⁽¹⁹⁾ FY18 Q4 contract award does not impact planned FY19 and FY20 contract awards.																															

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 5: Reconnaissance Equipment	P-1 Line Item Number / Title: 2361 / Automatic Identification System (AIS)

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	5.422	4.592	4.028	5.368	0.000	5.368	4.250	3.603	2.592	2.644	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	5.422	4.592	4.028	5.368	0.000	5.368	4.250	3.603	2.592	2.644	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	5.422	4.592	4.028	5.368	0.000	5.368	4.250	3.603	2.592	2.644	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	0.010	0.005	0.033	-	0.033	0.020	0.020	0.010	0.009	Continuing	Continuing
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

1U030: Automatic Identification System (AIS) is required for safety of navigation for all surface ships and submarines. AIS is a maritime Very High Frequency (VHF) communication system, which allows ships to exchange navigation, ship identification, and cargo information machine-to-machine via VHF transponders. AIS provides vessels with the ability to rapidly identify and track commercial shipping, which significantly increases the Navy's ability to distinguish between normal and suspicious merchant ships headed towards United States and allied ports around the globe. AIS provides critical track data to the Common Operational Picture (COP) on surface ships, AN/BYG-1 Combat System on submarines, Global Command and Control System-Maritime (GCCS-M) on Force level ships, and Global Command and Control System-Joint (GCCS-J) at Fleet Maritime Operations Centers (MOC) for publishing AIS data to the Maritime Domain Awareness (MDA) Data Sharing Community of Interest. The AIS submarine configuration provides an interface to the AN/BYG-1 Combat System and encrypted AIS capability that is currently not available on other AIS variants. This capability dramatically improves the Combatant Commanders' situational awareness and MDA data sharing capabilities in support of regional engagement, and tracking efforts against potential maritime terrorism threats.

Funds will procure and install AIS systems for Navy ships, submarines and shore sites consisting of a combination of modified Commercial Off-The-Shelf (COTS) and government/commercial software, such as omni-directional VHF, Global Positioning System antennas, AIS transponders, displays and associated cables, servers, power supplies, laptop computers, junction boxes, switches and radio frequency couplers. Without this configuration of AIS, Navy submarines will not be able to see encrypted AIS track data and will increase the risk of collisions.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 5: Reconnaissance Equipment						P-1 Line Item Number / Title: 2361 / Automatic Identification System (AIS)				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	1U030 Automatic Identification System (AIS)	P-5a			- / 5.422	- / 4.592	- / 4.028	- / 5.368	- / -	- / 5.368
P-40	Total Gross/Weapon System Cost				- / 5.422	- / 4.592	- / 4.028	- / 5.368	- / 0.000	- / 5.368
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown. Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										
Justification: FY20 funds will support the procurement of four (4) AIS submarine systems and forty (40) Cyber Hardening Kits and associated design services allocation; integration testing to support AIS installations on SSBN class submarines and installation funding for five (5) submarines. Additionally, the funding supports the installation of sixty-five (65) cyber security kits. The Navy increased the AIS program budget to begin design/integration efforts to field the AIS capability on Nuclear Command, Control, and Communications (NC3) mission capable Ohio class Ship, Submersible, Ballistic, Nuclear (SSBN) submarines. The need for AIS system is especially important for SSBN submarines, which have limited maneuverability during strategic patrol. The AIS Submarine configuration provides situational awareness (to include encrypted AIS message traffic from United States Coast Guard vessels) during time constrained ascents to communications depth, thereby significantly reducing the risk of a close-aboard contact situation, impacting the already limited resource of these SSBN submarines. Additional funding is to implement United States Fleet Forces Command (USFFC) comprehensive review recommendations for adding an AIS Workstation in Combat Information Center (CIC) on surface ships and an additional AIS workstation in the Flag Plot on Force level ships. An AIS Workstation in CIC will allow AIS data to be correlated with information from other sources such as radar, resulting in improved situation awareness and mission planning capability. Non-recurring cost associated with network and shipboard certification requirements. Updating the AIS architecture to integrate an additional AIS workstation into the CIC and Flag Plot will include Non-Recurring Engineering (NRE) costs associated with the ship modernization process such as Engineering Change and Ship Change documentation, Interactive Electronic Technical Manual (IETM) updates, etc. There are twenty-six (26) ship class drawings that need to be updated to detail where and how the new cyber hardening modification kits will be installed, to include how it will be mounted and interface definitions for network, power, etc. The new cyber hardening modification to the AIS architecture requires end to end integration testing and Application Integration System Integration Test (AI SIT) network validation testing and an updated Authority to Operate (ATO).										

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5								P-1 Line Item Number / Title: 2361 / Automatic Identification System (AIS)							Aggregated Items Title: 1U030 Automatic Identification System (AIS)					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
1) 1U030 Automatic Identification Systems (AIS)																				
1.1) AIS - Procurement ^{(1)(†)}	A		65.250	16	1.044	90.000	1	0.090	90.000	6	0.540	92.000	4	0.368	-	-	-	92.000	4	0.368
1.2) Engineering Change Proposal ⁽²⁾	A		-	-	0.162	-	-	0.289	-	-	0.551	-	-	-	-	-	-	-	-	-
1.3) Cyber Security Hardware - Procurement ^{(3)(†)}	A		-	-	-	-	-	-	21.000	65	1.365	22.000	40	0.880	-	-	-	22.000	40	0.880
1.4) Transponders ^{(4)(†)}	A		-	-	-	8.500	200	1.700	-	-	-	-	-	-	-	-	-	-	-	-
1.5) Combat Workstation - Procurement ^{(5)(†)}	A		-	-	-	2.600	400	1.040	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) 1U030 Automatic Identification Systems (AIS)			-	-	1.206	-	-	3.119	-	-	2.456	-	-	1.248	-	-	-	-	-	1.248
2) Installations																				
2.1) AIS - Installation ⁽⁶⁾	A		-	-	2.750	-	-	0.203	-	-	0.203	-	-	1.015	-	-	-	-	-	1.015
2.2) Cyber Security Hardware - Installation ⁽⁷⁾	A		-	-	-	-	-	-	-	-	-	-	-	2.717	-	-	-	-	-	2.717
Subtotal: 2) Installations			-	-	2.750	-	-	0.203	-	-	0.203	-	-	3.732	-	-	-	-	-	3.732
3) Support																				
3.1) Production Support	A		-	-	0.710	-	-	0.166	-	-	0.146	-	-	0.132	-	-	-	-	-	0.132
3.2) AIS - DSA ⁽⁸⁾	A		-	-	0.756	-	-	0.024	-	-	0.144	-	-	0.096	-	-	-	-	-	0.096
3.3) Cyber Security Hardware - DSA ⁽⁹⁾	A		-	-	-	-	-	-	-	-	0.195	-	-	0.160	-	-	-	-	-	0.160
3.4) IRD / SHIPALT / Class SIDS ⁽¹⁰⁾	A		-	-	-	-	-	1.080	-	-	-	-	-	-	-	-	-	-	-	-
3.5) Cyber & CR SHIPALT (Non-recurring) ⁽¹¹⁾	A		-	-	-	-	-	-	-	-	0.884	-	-	-	-	-	-	-	-	-
Subtotal: 3) Support			-	-	1.466	-	-	1.270	-	-	1.369	-	-	0.388	-	-	-	-	-	0.388
Total			-	-	5.422	-	-	4.592	-	-	4.028	-	-	5.368	-	-	-	-	-	5.368
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
(†) indicates the presence of a P-5a																				
Footnotes:																				

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5	P-1 Line Item Number / Title: 2361 / Automatic Identification System (AIS)	Aggregated Items Title: 1U030 Automatic Identification System (AIS)
(1) FY20 funding supports the procurement of four submarine class systems for Ship, Submersible, Ballistic, Nuclear (SSBN) submarines. (2) In response to the Comprehensive Review, Automatic Identification System (AIS) will be updating the architecture to integrate an additional AIS Workstation into the Combat Information Center (CIC) on surface level ships, and an additional laptop will be added to the Flag Plot on Force level ships. These updates will include Non-Recurring Engineering (NRE) costs associated with the Ship Modernization process such as Engineering Change and Ship Change documentation, Interactive Electronic Technical Manual (IETM) updates, etc. The new laptops will be an added interface to the AIS architecture that requires End to End Integration testing and Application Integration System Integration Test (AI SIT) network validation testing and an updated Authority to Operate (ATO). (3) These costs will cover the cost of purchasing forty Cyber Security hardware kits. These modifications are required to address potential vulnerabilities identified by the Naval Cyber Warfare Development Group (NCWDG) and to protect systems and users of AIS data downstream from the data collection point. These users include Global Command and Control System - Maritime (GCCS-M), Global Command and Control System - Joint (GCCS-J), Distributed Common Ground System - Navy (DCGS-N), Electronic Chart Display and Information System - Navy (ECDIS-N), BYG-1 and others. (4) With the additional FY18 funds from the Comprehensive Review, all AIS transponders that are at the end of life will be replaced. The exact model(s) of transponder to be procured is based on the outcome of the Georgia Tech Research Institute Cyber Hardening Solution. (5) The combat workstation is a ruggedized Panasonic Toughbook (CF-54) that provides AIS message data for mission planning. With the additional FY18 funding from the Comprehensive Review, the technical refresh will be accelerated, replacing laptops on the bridge that are obsolete and past end of life. To comply with the recommendations of the Comprehensive Review, one AIS laptop will be added to the CIC on all surface level ships and an additional laptop will be added to the Flag Plot on all Force level ships. (6) Installation and design costs vary depending on the submarine class and hull being installed on and the location of the installation. (7) FY20 funds will support the installation of 65 Cyber Security hardening kits across multiple ship and submarine classes. (8) The FY20 DSA costs will support the drawing and design requirements to install Automatic Identification System (AIS) on four Ohio Class Ship, Submersible, Ballistic, Nuclear (SSBN) submarines in FY21. (9) The FY20 DSA costs will support the drawing and design requirements for the various ship and submarine classes for the forty Cyber Security hardening solutions that will be installed in FY21. (10) Requirements to implement the fielding of permanent infrastructure to support additional laptops in the Combat Information Center (CIC) and Flag Plot based on the Comprehensive Review recommendations. (11) The AIS Cyber hardening effort begins in FY19. Since this modernization effort is required on all platforms, it requires ship class drawings for twenty-six different classes of ships. The class drawings will also be updated to include detail where and how the new laptop will be installed in Combat Information Center (CIC), to include how it will be mounted and interface definitions for network, power, etc. The Cyber and CIC Ship Alteration (SHIPALT) effort in FY19 is non-recurring.		

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5			P-1 Line Item Number / Title: 2361 / Automatic Identification System (AIS)						Aggregated Items: 1U030 Automatic Identification System (AIS)			
Item Number / Title [DODIC]	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1) 1U030 Automatic Identification Systems (AIS)												
1.1) AIS - Procurement ⁽¹⁾		2018	SRC / Atlanta, GA	C / FFP	SSC Atlantic	Nov 2017	Sep 2018	1	90.000	Y		
1.1) AIS - Procurement ⁽¹⁾		2019	SRC / Atlanta, GA	C / FFP	SSC Atlantic	Nov 2018	Sep 2019	6	90.000	Y		
1.1) AIS - Procurement ⁽¹⁾		2020	Centurum / Charleston, SC	C / FFP	SSC Atlantic	Nov 2019	Sep 2020	4	92.000	Y		
1.3) Cyber Security Hardware - Procurement ⁽³⁾		2019	TBD / TBD@New MFG - Loc	C / TBD	TBD	Mar 2019	Sep 2019	65	21.000	N	Sep 2018	
1.3) Cyber Security Hardware - Procurement ⁽³⁾		2020	TBD / TBD@New MFG - Loc	C / TBD	TBD	Dec 2019	Jun 2020	40	22.000	N	Sep 2018	
1.4) Transponders ⁽⁴⁾		2018 ⁽¹²⁾	TBD / TBD@New MFG - Loc	C / TBD	TBD	Mar 2019	Sep 2019	200	8.500	N	Jul 2018	
1.5) Combat Workstation - Procurement ⁽⁵⁾		2018 ⁽¹³⁾	GSA Contract Vehicle / TBD	C / TBD	TBD	Mar 2019	May 2019	400	2.600	Y		

Footnotes:

⁽¹²⁾ The actual lead time was 7 months, as this effort was due to a Congressional plus-up.

⁽¹³⁾ The actual lead time was 6 months, as this effort was due to a Congressional plus-up.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment						P-1 Line Item Number / Title: 2606 / Cooperative Engagement Capability						
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: 0607658N, 0603658N					Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	828.519	23.891	39.076	35.128	0.000	35.128	34.457	34.745	33.909	34.654	31.641	1,096.020
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	828.519	23.891	39.076	35.128	0.000	35.128	34.457	34.745	33.909	34.654	31.641	1,096.020
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	828.519	23.891	39.076	35.128	0.000	35.128	34.457	34.745	33.909	34.654	31.641	1,096.020
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	1.492	0.831	0.548	-	0.548	0.920	0.789	0.576	0.588	Continuing	Continuing
Flyaway Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Cooperative Engagement Capability (CEC) significantly improves Battle Force Anti-Air Warfare (AAW) capability by coordinating all Battle Force AAW sensors into a single, real-time, composite track picture capable of fire control quality. CEC distributes sensor data from each ship and aircraft, or cooperating unit (CU), to all other CUs in the battle force through a real-time, line of sight, high data rate sensor and engagement data distribution network. CEC is highly resistant to jamming and provides accurate gridlocking between CUs. Each CU independently employs high capacity, parallel processing and advanced algorithms to combine all distributed sensor data into a fire control quality track picture which is the same for all CUs. CEC data is presented as a superset of the best AAW sensor capabilities from each CU, all of which are integrated into a single input to each CU's combat weapons system. CEC significantly improves our Battle Force defense in depth, including both local area and ship defense capabilities against current and future AAW threats. Moreover, CEC provides critical connectivity and integration of over-land air defense systems capable of countering emerging air threats, including land attack cruise missiles, in a complex littoral environment.

CEC consists of the Data Distribution System (DDS), the Cooperative Engagement Processor (CEP), and Combat System modifications. The DDS encodes and distributes ownship sensor and engagement data and is a high capacity, jam resistant, directive system providing a precision gridlocking and high throughput of data. The CEP is a high capacity distributed processor that is able to process force levels of data in near real time. This data is passed to the ship's combat system as high quality data for which the ship can cue its onboard sensors or use the data to engage targets without actually tracking them. The CEC suite contains a C-Band antenna, the antenna's power and cooling equipment, a Signal Data Processor (SDP), and system support equipment. The current CEC Shipboard antennas variants include the Shipboard Active Aperture (SBAA) and the Planar Array Antenna Assembly (PAAA). The SDP hosts the CEP software and is common across all CEC variants. The USG-2B articles in this budget procure support hardware consists of a ruggedized 19-inch rack that contains a Cesium time standard, input/output converter, power distribution and user interface control devices. The 19-inch rack holds the SDP. SBAA and PAAA support are provided by an Antenna Environmental Control Unit (AECU) or Environmental Control System Controller (ECSC), which provide power and cooling oil to the CEC shipboard antenna. Funding provided also procure the required Weapon Replaceable Assembly (WRA) hardware required for airborne variants of CEC.

A family of antennas approach will be used to satisfy CEC requirements with lower life cycle costs (procurement, installation, and maintenance) and reduced weight (on mast and below deck). These antennas enable future capability as well as providing a solution extensible to additional platforms. A competitive contract for Common Array Block (CAB) antenna development and production was awarded late FY13. CEC is planned for shipboard installations at various Naval and commercial shipyards aboard CG/CG Mod, DDG/DDG Mod, CV/CVN, LPD, LHD, DDG 1000, and LHA ship classes during scheduled ship availability periods and at land based test sites (LBTS).

[P40A / UC002 - AN/UYQ-70 DISPLAY]: This is a sunk cost to fund the procurement of the AN/UYQ-70 display system for use and integration with the CEC system.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment		P-1 Line Item Number / Title: 2606 / Cooperative Engagement Capability
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: 0607658N, 0603658N	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
[P40A / UC004 - ECP/KIT PROCUREMENT]: These funds are for the procurement and installation of Engineering Change Proposals (ECPs)(AN/USG-2 to AN/USG-2B upgrades/AN/USG-2A to AN/USG-2B upgrades) Field Change Kits to address CEC parts obsolescence associated with interfacing systems on multiple platforms. [P40A / UC005 - NON-RECURRING DEPOT COST]: This is a sunk cost to establish a depot for the CEC system. [P40A / UC006 - VISUAL INTERACTIVE SIMULATED TRAINING APPLICATION (VISTA) TRAINING]: This is a sunk cost to fund VISTA training related to the CEC system. [P40A / UC008 - SUPPLY SUPPORT]: This is a sunk cost for Supply Support for the CEC system. [P40A / UC011 - SIGNAL DATA PROCESSORS (SDP) BACKFITS (LBTS)]: Funds are for the procurement of Signal Data Processors (SDP) backfits at Land Based Test Sites (LBTSS). There are no installation costs associated with these procurements because the installations will be performed by employees at the LBTSS. [P40A / UC013 - AN/USG-2B HARDWARE CONVERSION KITS (AN/USG-2)]: Funds are for the procurement of AN/USG-2B hardware conversion kits for the CEC AN/USG-2 system configuration. [P40A / UC014 - AN/USG-2B HARDWARE CONVERSION KITS (AN/USG-2A)]: Funds are for the procurement of AN/USG-2B hardware conversion kits for the AN/USG-2A CEC system configuration. [P40A / UC015 - AN/USG-2B HARDWARE CONVERSION KITS (LBTS)]: Funds are for the procurement of AN/USG-2B hardware conversion kits for CEC Land Based Test Sites. [P40A / UC830 - PRODUCTION ENGR. SUPPORT]: These funds are required for the production engineering support of all CEC systems. This Cost Element includes indirect costs associated with the procurement and installation of individual field changes and upgrades. These costs would include field change and upgrade support, consolidated engineering support, Program Office support, and other costs. These costs will fluctuate with increases and decreases of overall budget, number and type of field changes and upgrades, and required support. [P40A / UCCA1 - CONGRESSIONAL ADD]: These are Congressional add funds. [P40A / UC016 SYSTEM COMPONENT UPGRADES]: These funds are for the procurement and installation of replacement CEC system components (Surface and Airborne) due to existing component degradation and corrosion as a result of these existing components being in use beyond their intended service life. Funds will support procurement of Environmental Control System Controllers (ECSC) Units and replacement ECSC components, Antenna Environmental Control Units (AECU) and replacement AECU components, Airborne Weapons Replaceable Assemblies (WRAs), replacement components of the Shipboard Active Array (SBAA) Antenna, and replacement components of the Planar Array Antenna Assembly (PAAA) Antenna [P3A / UC001 - COOPERATIVE ENGAGEMENT TRANSMISSION PROCESSING SET (USG-2/2A/2B)]: These funds are for the procurement of CEC to backfit CG, DDG, CV/CVN, and LHD ship classes, as well as Land Based Test Sites (LBTSS). [P3A - 2 / UC003 - PAAA BACKFIT KITS]: These funds are for the procurement of Planar Antenna Array Assembly (PAAA) backfit kits. [P3A - 3 / UC009 - SIGNAL DATA PROCESSOR (SDP) BACKFITS (AN/USG-2)]: Funds are for the procurement of Signal Data Processors (SDP) backfits. [P3A - 4 / UC010 - SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2A)]: Funds are for the procurement of Signal Data Processors (SDP) backfits for AN/USG-2A equipment. [P3A - 5 / UC012 - COMMON ARRAY BLOCK (CAB) ANTENNA - SHIPBOARD]: Funds are for the procurement of Common Array Block (CAB) antennas for shipboard AN/USG-2B systems.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy				Date: March 2019	
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment			P-1 Line Item Number / Title: 2606 / Cooperative Engagement Capability		
ID Code (A=Service Ready, B=Not Service Ready): A		Program Elements for Code B Items: 0607658N, 0603658N		Other Related Program Elements: N/A	
Line Item MDAP/MAIS Code: N/A					

Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	COOPERATIVE ENGAGEMENT CAPABILITY	P-5a			- / 282.682	- / 11.234	- / 17.674	- / 14.120	- / -	- / 14.120
P-3a	1 / UC001 - COOPERATIVE ENGAGEMENT TRANSMISSION PROCESSING SET (USG-2/2A/2B) (SGAAW)				- / 442.659	- / 7.472	- / 10.966	- / 2.047	- / 0.000	- / 2.047
P-3a	2 / UC003 - PAAA BACKFIT KITS (SGAAW)				- / 60.439	- / 1.508	- / 2.355	- / 1.211	- / 0.000	- / 1.211
P-3a	3 / UC009 - SIGNAL DATA PROCESSOR (SDP) BACKFITS (AN/USG-2) (SGAAW)				- / 28.022	- / 3.285	- / 7.660	- / 2.666	- / 0.000	- / 2.666
P-3a	4 / UC010 - SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2A) (SGAAW)				- / 14.717	- / 0.392	- / 0.421	- / 0.804	- / 0.000	- / 0.804
P-3a	5 / UC012 - COMMON ARRAY BLOCK (CAB) ANTENNA - SHIPBOARD (SGAAW)				- / 0.000	- / 0.000	- / 0.000	- / 14.280	- / 0.000	- / 14.280
P-40	Total Gross/Weapon System Cost				- / 828.519	- / 23.891	- / 39.076	- / 35.128	- / 0.000	- / 35.128

Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	COOPERATIVE ENGAGEMENT CAPABILITY	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / UC001 - COOPERATIVE ENGAGEMENT TRANSMISSION PROCESSING SET (USG-2/2A/2B) (SGAAW)				- / 3.800	- / 0.000	- / 0.000	- / 0.000	Continuing	Continuing
P-3a	2 / UC003 - PAAA BACKFIT KITS (SGAAW)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	Continuing	Continuing
P-3a	3 / UC009 - SIGNAL DATA PROCESSOR (SDP) BACKFITS (AN/USG-2) (SGAAW)				- / 2.317	- / 1.533	- / 0.000	- / 0.000	Continuing	Continuing
P-3a	4 / UC010 - SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2A) (SGAAW)				- / 0.384	- / 0.000	- / 0.000	- / 0.000	Continuing	Continuing
P-3a	5 / UC012 - COMMON ARRAY BLOCK (CAB) ANTENNA - SHIPBOARD (SGAAW)				- / 15.396	- / 24.820	- / 25.443	- / 26.987	Continuing	Continuing
P-40	Total Gross/Weapon System Cost				- / 34.457	- / 34.745	- / 33.909	- / 34.654	- / 31.641	- / 1,096.020

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
Funds are to procure hardware and provide associated support for the CEC system. Requirements are driven by planned procurements of CEC for LHD 2-6, Planar Antenna Array Assembly (PAAA) antennas, and Signal Data Processor (SDP) backfit kits. Funding increase in FY 20 is required for procurement of Environmental Control System Controllers (ECSC) Units and replacement ECSC components, Antenna Environmental Control Units (AECU) and replacement AECU components, Airborne Weapons Replaceable Assemblies (WRAs), replacement components of the Shipboard Active Array (SBAA) Antenna, and replacement components of the Planar Array Antenna Assembly (PAAA) Antenna due to existing component degradation and corrosion as a result of these existing components being in use beyond their intended service life.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7							P-1 Line Item Number / Title: 2606 / Cooperative Engagement Capability								Aggregated Items Title: COOPERATIVE ENGAGEMENT CAPABILITY					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
1) UC002 - AN/UYQ-70 DISPLAY																				
1.1) AN/UYQ-70 DISPLAY	A		-	-	21.493	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) UC002 - AN/UYQ-70 DISPLAY			-	-	21.493	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2) UC004 - ECP/KIT PROCUREMENT																				
2.1) ECP/KIT PROCUREMENT ⁽¹⁾	A		-	-	103.535	-	-	3.279	-	-	6.547	-	-	3.108	-	-	-	-	-	3.108
Subtotal: 2) UC004 - ECP/KIT PROCUREMENT			-	-	103.535	-	-	3.279	-	-	6.547	-	-	3.108	-	-	-	-	-	3.108
3) UC005 - NON-RECURRING DEPOT COST																				
3.1) NON-RECURRING DEPOT SUPPORT	A		-	-	4.500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 3) UC005 - NON-RECURRING DEPOT COST			-	-	4.500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4) UC006 - VISUAL INTERACTIVE SIMULATED TRAINING APPLICATION (VISTA) TRAINING																				
4.1) VISUAL INTERACTIVE SIMULATED TRAINING APPLICATION (VISTA) TRAINING	A		-	-	0.700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 4) UC006 - VISUAL INTERACTIVE SIMULATED TRAINING APPLICATION (VISTA) TRAINING			-	-	0.700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5) UC008 - SUPPLY SUPPORT																				
5.1) SUPPLY SUPPORT	A		-	-	6.094	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 5) UC008 - SUPPLY SUPPORT			-	-	6.094	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6) UC011 - SIGNAL DATA PROCESSORS (SDP) BACKFITS (LBTS)																				
6.1) SIGNAL DATA PROCESSORS (SDP) BACKFITS (LBTS) ⁽¹⁾	A		382,000.00	15	5.730	231,697.00	5	1.158	236,331.00	1	0.236	241,058.00	4	0.964	-	-	-	241,058.00	4	0.964
Subtotal: 6) UC011 - SIGNAL DATA PROCESSORS (SDP) BACKFITS (LBTS)			-	-	5.730	-	-	1.158	-	-	0.236	-	-	0.964	-	-	-	-	-	0.964
7) UC013 - AN/USG-2B HARDWARE CONVERSION KITS (AN/USG-2)																				
7.1) AN/USG-2B HARDWARE	A		351,526.32	19	6.679	391,600.00	3	1.175	399,545.00	9	3.596	407,536.00	3	1.223	-	-	-	407,536.00	3	1.223

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy																Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7								P-1 Line Item Number / Title: 2606 / Cooperative Engagement Capability								Aggregated Items Title: COOPERATIVE ENGAGEMENT CAPABILITY				
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
CONVERSION KITS (AN/USG-2) ^(†)																				
Subtotal: 7) UC013 - AN/USG-2B HARDWARE CONVERSION KITS (AN/USG-2)			-	-	6.679	-	-	1.175	-	-	3.596	-	-	1.223	-	-	-	-	-	1.223
8) UC014 - AN/USG-2B HARDWARE CONVERSION KITS (AN/USG-2A)																				
8.1) AN/USG-2B HARDWARE CONVERSION KIT (AN/USG-2A) ^(†)	A		269,833.33	12	3.238	299,000.00	1	0.299	304,837.00	1	0.305	314,200.00	2	0.628	-	-	-	314,200.00	2	0.628
Subtotal: 8) UC014 - AN/USG-2B HARDWARE CONVERSION KITS (AN/USG-2A)			-	-	3.238	-	-	0.299	-	-	0.305	-	-	0.628	-	-	-	-	-	0.628
9) UC015 - AN/USG-2B HARDWARE CONVERSION KITS (LBTS)⁽²⁾																				
9.1) AN/USG-2B HARDWARE CONVERSION KITS (LBTS) ^(†)	A		372,714.29	7	2.609	394,300.00	5	1.972	402,124.00	1	0.402	410,000.00	4	1.640	-	-	-	410,000.00	4	1.640
Subtotal: 9) UC015 - AN/USG-2B HARDWARE CONVERSION KITS (LBTS)			-	-	2.609	-	-	1.972	-	-	0.402	-	-	1.640	-	-	-	-	-	1.640
10) UC830 - PRODUCTION ENGR. SUPPORT⁽³⁾																				
10.1) PRODUCTION ENGR. SUPPORT ⁽⁴⁾	A		-	-	90.565	-	-	3.351	-	-	6.588	-	-	2.957	-	-	-	-	-	2.957
Subtotal: 10) UC830 - PRODUCTION ENGR. SUPPORT			-	-	90.565	-	-	3.351	-	-	6.588	-	-	2.957	-	-	-	-	-	2.957
11) UCCA1 - CONGRESSIONAL ADD																				
11.1) CONGRESSIONAL ADD	A		-	-	23.249	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 11) UCCA1 - CONGRESSIONAL ADD			-	-	23.249	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12) UC6IN - NON-FMP INSTALLATION																				
12.1) NON-FMP INSTALLATION	A		-	-	14.290	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 12) UC6IN - NON-FMP INSTALLATION			-	-	14.290	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13) UC016 SYSTEM COMPONENT UPGRADES⁽⁵⁾																				
13.1) SYSTEM COMPONENT UPGRADES	A		-	-	-	-	-	-	-	-	-	-	-	3.600	-	-	-	-	-	3.600

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy												Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7						P-1 Line Item Number / Title: 2606 / Cooperative Engagement Capability						Aggregated Items Title: COOPERATIVE ENGAGEMENT CAPABILITY						

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
Subtotal: 13) UC016 SYSTEM COMPONENT UPGRADES			-	-	0.000	-	-	-	-	-	-	-	-	3.600	-	-	-	-	-	3.600
Total			-	-	282.682	-	-	11.234	-	-	17.674	-	-	14.120	-	-	-	-	-	14.120

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

(†) indicates the presence of a P-5a

Footnotes:

(1) Increased funding in FY 19 to account for CAB ECP planning costs and to procure additional ECP kits.

(2) FY 2020 requirements are for the procurement of additional AN/USG-2B hardware conversion kits for CEC Land Based Test Sites in order for hardware to current reflect Fleet configurations.

(3) These funds are required for the production engineering support of all CEC systems. This Cost Element includes indirect costs associated with the procurement and installation of individual field changes and upgrades. These costs would include field change and upgrade support, consolidated engineering support, Program Office support, and other costs. These costs will fluctuate with increases and decreases of overall budget, number and type of field changes and upgrades, and required support.

(4) Increased funding in FY 19 to account for additional CAB production engineering planning costs.

(5) FY 2020 funds are for the procurement of replacement CEC system components (Surface and Airborne) due to existing component degradation and corrosion as a result of these existing components being in use beyond their intended service life.

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7			P-1 Line Item Number / Title: 2606 / Cooperative Engagement Capability						Aggregated Items: COOPERATIVE ENGAGEMENT CAPABILITY			
Item Number / Title [DODIC]	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
6) UC011 - SIGNAL DATA PROCESSORS (SDP) BACKFITS (LBTS)												
6.1) SIGNAL DATA PROCESSORS (SDP) BACKFITS (LBTS)		2011	Sechan Electronics, Inc. / Lititz, PA	C / IDIQ	Washington, DC	Dec 2011	Jun 2013	5	450,000.00	Y		Dec 2010
6.1) SIGNAL DATA PROCESSORS (SDP) BACKFITS (LBTS)		2012	Sechan Electronics, Inc. / Lititz, PA	SS / IDIQ	Washington, DC	Dec 2012	Jun 2014	3	669,000.00	Y		
6.1) SIGNAL DATA PROCESSORS (SDP) BACKFITS (LBTS)		2014	Sechan Electronics, Inc. / Lititz, PA	SS / IDIQ	Washington, DC	May 2014	Nov 2015	3	194,094.00	Y		
6.1) SIGNAL DATA PROCESSORS (SDP) BACKFITS (LBTS)		2015	Sechan Electronics, Inc. / Lititz, PA	SS / IDIQ	Washington, DC	May 2015	Nov 2016	2	218,500.00	Y		
6.1) SIGNAL DATA PROCESSORS (SDP) BACKFITS (LBTS)		2017 ⁽⁶⁾	DRS Laurel Technologies / Largo, FL	C / FFP	Washington, DC	May 2017	Nov 2018	2	227,154.00	Y		Aug 2016
6.1) SIGNAL DATA PROCESSORS (SDP) BACKFITS (LBTS)		2018 ⁽⁷⁾	DRS Laurel Technologies / Largo, FL	SS / FFP	Washington, DC	May 2018	Nov 2019	5	231,697.00	Y		
6.1) SIGNAL DATA PROCESSORS (SDP) BACKFITS (LBTS)		2019 ⁽⁸⁾	DRS Laurel Technologies / Largo, FL	SS / FFP	Washington, DC	May 2019	May 2020	1	236,331.00	Y		
6.1) SIGNAL DATA PROCESSORS (SDP) BACKFITS (LBTS)		2020 ⁽⁹⁾	DRS Laurel Technologies / Largo, FL	SS / FFP	Washington, DC	May 2020	May 2021	4	241,058.00	Y		
7) UC013 - AN/USG-2B HARDWARE CONVERSION KITS (AN/USG-2)												
7.1) AN/USG-2B HARDWARE CONVERSION KITS (AN/USG-2)		2014 ⁽¹⁰⁾	Raytheon / St. Petersburg, FL	SS / FFP	Washington, DC	Apr 2014	Jun 2015	8	361,750.00	Y		
7.1) AN/USG-2B HARDWARE CONVERSION KITS (AN/USG-2)		2015 ⁽¹¹⁾	DRS Laurel Technologies / Largo, FL	C / FFP	Washington, DC	Aug 2015	Oct 2016	8	369,000.00	Y		
7.1) AN/USG-2B HARDWARE CONVERSION KITS (AN/USG-2)		2016 ⁽¹²⁾	DRS Laurel Technologies / Largo, FL	SS / FFP	Washington, DC	Jul 2016	Sep 2017	2	224,500.00	Y		
7.1) AN/USG-2B HARDWARE CONVERSION KITS (AN/USG-2)		2017 ⁽¹³⁾	DRS Laurel Technologies / Largo, FL	SS / FFP	Washington, DC	Mar 2017	May 2018	1	383,833.33	Y		
7.1) AN/USG-2B HARDWARE CONVERSION KITS (AN/USG-2)		2018 ⁽¹⁴⁾	DRS Laurel Technologies / Largo, FL	SS / FFP	Washington, DC	Mar 2018	May 2019	3	391,600.00	Y		
7.1) AN/USG-2B HARDWARE CONVERSION KITS (AN/USG-2)		2019	DRS Laurel Technologies / Largo, FL	SS / FFP	Washington, DC	Mar 2019	Mar 2020	9	399,545.00	Y		
7.1) AN/USG-2B HARDWARE CONVERSION KITS (AN/USG-2)		2020	DRS Laurel Technologies / Largo, FL	SS / FFP	Washington, DC	Mar 2020	Mar 2021	3	407,536.00	Y		

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7			P-1 Line Item Number / Title: 2606 / Cooperative Engagement Capability					Aggregated Items: COOPERATIVE ENGAGEMENT CAPABILITY				
Item Number / Title [DODIC]	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
8) UC014 - AN/USG-2B HARDWARE CONVERSION KITS (AN/USG-2A)												
8.1) AN/USG-2B HARDWARE CONVERSION KIT (AN/USG-2A)		2014 ⁽¹⁵⁾	Raytheon / St. Petersburg, FL	SS / FFP	Washington, DC	Apr 2014	Jun 2015	7	276,060.00	Y		
8.1) AN/USG-2B HARDWARE CONVERSION KIT (AN/USG-2A)		2015 ⁽¹⁶⁾	DRS Laurel Technologies / Largo, FL	C / FFP	Washington, DC	Aug 2015	Oct 2016	3	281,666.67	Y		
8.1) AN/USG-2B HARDWARE CONVERSION KIT (AN/USG-2A)		2016 ⁽¹⁷⁾	DRS Laurel Technologies / Largo, FL	SS / FFP	Washington, DC	Jul 2016	Sep 2017	1	168,000.00	Y		
8.1) AN/USG-2B HARDWARE CONVERSION KIT (AN/USG-2A)		2017 ⁽¹⁸⁾	DRS Laurel Technologies / Largo, FL	SS / FFP	Washington, DC	Mar 2017	May 2018	1	293,000.00	Y		
8.1) AN/USG-2B HARDWARE CONVERSION KIT (AN/USG-2A)		2018 ⁽¹⁹⁾	DRS Laurel Technologies / Largo, FL	SS / FFP	Washington, DC	Mar 2018	May 2019	1	299,000.00	Y		
8.1) AN/USG-2B HARDWARE CONVERSION KIT (AN/USG-2A)		2019 ⁽²⁰⁾	DRS Laurel Technologies / Largo, FL	SS / FFP	Washington, DC	Mar 2019	Mar 2020	1	304,837.00	Y		
8.1) AN/USG-2B HARDWARE CONVERSION KIT (AN/USG-2A)		2020 ⁽²¹⁾	DRS Laurel Technologies / Largo, FL	SS / FFP	Washington, DC	Mar 2020	Mar 2021	2	314,200.00	Y		
9) UC015 - AN/USG-2B HARDWARE CONVERSION KITS (LBTS)												
9.1) AN/USG-2B HARDWARE CONVERSION KITS (LBTS)		2014 ⁽²²⁾	Raytheon / St. Petersburg, FL	SS / FFP	Washington, DC	Apr 2014	Jun 2015	3	364,410.00	Y		
9.1) AN/USG-2B HARDWARE CONVERSION KITS (LBTS)		2015 ⁽²³⁾	DRS Laurel Technologies / Largo, FL	C / FFP	Washington, DCWashington, DC	Aug 2015	Oct 2016	2	371,500.00	Y		
9.1) AN/USG-2B HARDWARE CONVERSION KITS (LBTS)		2017	DRS Laurel Technologies / Largo, FL	SS / FFP	Washington, DC	Mar 2017	May 2018	2	386,509.00	Y		
9.1) AN/USG-2B HARDWARE CONVERSION KITS (LBTS)		2018	DRS Laurel Technologies / Largo, FL	SS / FFP	Washington, DC	Mar 2018	May 2019	5	394,300.00	Y		
9.1) AN/USG-2B HARDWARE CONVERSION KITS (LBTS)		2019	DRS Laurel Technologies / Largo, FL	SS / FFP	Washington, DC	Mar 2019	Mar 2020	1	402,124.00	Y		
9.1) AN/USG-2B HARDWARE CONVERSION KITS (LBTS)		2020	DRS Laurel Technologies / Largo, FL	SS / FFP	Washington, DC	Mar 2020	Mar 2021	4	410,000.00	Y		
Footnotes: ⁽⁶⁾ This will be a competitively awarded contract 3Q FY17 with options in FY18. ⁽⁷⁾ 2018 - Option Year 1 of DRS SDP-S Contract ⁽⁸⁾ 2019 - Option Year 2 of DRS SDP-S Contract ⁽⁹⁾ 2020 - Option Year 3 of DRS SDP-S Contract ⁽¹⁰⁾ The last option year under the current CEC Production contract was FY14. Two additional option years have been added to the contract for FY15 and FY16. ⁽¹¹⁾ Procurement of this equipment transitioned to a new Production contract starting in FY15.												

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	P-1 Line Item Number / Title: 2606 / Cooperative Engagement Capability	Aggregated Items: COOPERATIVE ENGAGEMENT CAPABILITY
(12) 2016 - Option Year 1 of DRS Production Contract (13) 2017- Option Year 2 of DRS Production Contract (14) 2018- Option Year 3 of DRS Production Contract (15) The last option year under the current CEC Production contract was FY14. Two additional option years have been added to the contract for FY15 and FY16. (16) Procurement of this equipment transitioned to a new Production contract starting in FY15. (17) 2016 - Option Year 1 of DRS Production Contract (18) 2017 - Option Year 2 of DRS Production Contract (19) 2018 - Option Year 3 of DRS Production Contract (20) 2019 - Option Year 4 of DRS Production Contract (21) 2020 - Option Year 5 of DRS Production Contract (22) The last option year under the current CEC Production contract was FY14. Two additional option years have been added to the contract for FY15 and FY16. (23) Procurement of this equipment transitioned to a new Production contract starting in FY15.		

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Exhibit P-3a, Individual Modification: PB 2020 Navy						Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7				P-1 Line Item Number / Title: 2606 / Cooperative Engagement Capability				Modification Number / Title: 1 / UC001 - COOPERATIVE ENGAGEMENT TRANSMISSION PROCESSING SET (USG-2/2A/2B)			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	442.659	7.472	10.966	2.047	0.000	2.047	3.800	0.000	0.000	0.000	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	442.659	7.472	10.966	2.047	0.000	2.047	3.800	0.000	0.000	0.000	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	442.659	7.472	10.966	2.047	0.000	2.047	3.800	0.000	0.000	0.000	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Strike Group Anti-Air Warfare (AAW) Improvement. These funds are for the procurement and installation of CEC to backfit CG, DDG, CV/CVN, and LHD ship classes, as well as various Land Based Test Sites (LBTs).

[COOPERATIVE ENGAGEMENT TRANSMISSION PROCESSING SET (USG-2/2A/2B)] Due to the schedule delays and cost increases in the Common Array Block (CAB) Antenna program, the Program Office will determine the most affordable CEC Antenna to procure, in alignment with budget, to meet LHD class ship requirements in FY 18 and FY 19.

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7				P-1 Line Item Number / Title: 2606 / Cooperative Engagement Capability						Modification Number / Title: 1 / UC001 - COOPERATIVE ENGAGEMENT TRANSMISSION PROCESSING SET (USG-2/2A/2B)			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: UC001 COOPERATIVE ENGAGEMENT TRANSMISSION PROCESSING SET (CETPS) (AN/USG-2/2A/2B)				Modification Type: SGAAW				Related RDT&E PEs: 0603755N, 0603658N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: UC001 - COOPERATIVE ENGAGEMENT TRANSMISSION PROCESSING SET (USG-2/2A/2B)													
B Kits													
Recurring													
1.1.1) COOPERATIVE ENGAGEMENT TRANSMISSION PROCESSING SET (USG-2/2A/2B) - NonOrganic ⁽²⁴⁾	49 / 367.975	1 / 5.276	2 / 10.784	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing	
Subtotal: Recurring	- / 367.975	- / 5.276	- / 10.784	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing	
Subtotal: UC001 - COOPERATIVE ENGAGEMENT TRANSMISSION PROCESSING SET (USG-2/2A/2B)	49 / 367.975	1 / 5.276	2 / 10.784	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing	
Subtotal: Procurement, All Modification Items	- / 367.975	- / 5.276	- / 10.784	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing	
Installation													
Modification Item 1 of 1: UC001 - COOPERATIVE ENGAGEMENT TRANSMISSION PROCESSING SET (USG-2/2A/2B)	- / 74.684	- / 2.196	- / 0.182	- / 2.047	- / 0.000	- / 2.047	- / 3.800	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 82.909	
Subtotal: Installation	- / 74.684	- / 2.196	- / 0.182	- / 2.047	- / -	- / 2.047	- / 3.800	- / -	- / -	- / -	- / 0.000	- / 82.909	
Total													
Total Cost (Procurement + Support + Installation)	442.659	7.472	10.966	2.047	0.000	2.047	3.800	0.000	0.000	0.000	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7										P-1 Line Item Number / Title: 2606 / Cooperative Engagement Capability										Modification Number / Title: 1 / UC001 - COOPERATIVE ENGAGEMENT TRANSMISSION PROCESSING SET (USG-2/2A/2B)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: UC001 - COOPERATIVE ENGAGEMENT TRANSMISSION PROCESSING SET (USG-2/2A/2B)																															
Manufacturer Information																															
Manufacturer Name: DRS Laurel Technologies															Manufacturer Location: Largo, FL																
Administrative Leadtime (<i>in Months</i>): 1															Production Leadtime (<i>in Months</i>): 18																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates		Mar 2018				Mar 2019																									
Delivery Dates		Sep 2019				Sep 2020																									
Installation Information																															
Method of Implementation: ALTERATION INSTALLATION TEAM (AIT):: Installation Name: COOPERATIVE ENGAGEMENT TRANSMISSION PROCESSI																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (<i>Each</i>) / Total Cost (\$ <i>M</i>)		Qty (<i>Each</i>) / Total Cost (\$ <i>M</i>)		Qty (<i>Each</i>) / Total Cost (\$ <i>M</i>)		Qty (<i>Each</i>) / Total Cost (\$ <i>M</i>)		Qty (<i>Each</i>) / Total Cost (\$ <i>M</i>)		Qty (<i>Each</i>) / Total Cost (\$ <i>M</i>)		Qty (<i>Each</i>) / Total Cost (\$ <i>M</i>)		Qty (<i>Each</i>) / Total Cost (\$ <i>M</i>)		Qty (<i>Each</i>) / Total Cost (\$ <i>M</i>)		Qty (<i>Each</i>) / Total Cost (\$ <i>M</i>)		Qty (<i>Each</i>) / Total Cost (\$ <i>M</i>)									
Prior Years		48 / 74.684		1 / 2.196		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		49 / 76.880							
FY 2018		- / -		- / -		0 / 0.182		1 / 2.047		0 / 0.000		1 / 2.047		- / -		- / -		- / -		- / -		0 / 0.000		1 / 2.229							
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		2 / 3.800		- / -		- / -		- / -		0 / 0.000		2 / 3.800							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		48 / 74.684		1 / 2.196		0 / 0.182		1 / 2.047		0 / 0.000		1 / 2.047		2 / 3.800		- / -		- / -		- / -		0 / 0.000		52 / 82.909							
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	48	-	1	-	-	-	-	-	-	-	1	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Out	48	-	1	-	-	-	-	-	-	-	1	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Footnotes:																															
(24) Funds in FY 17 are required for installation planning activities in preparation for installation in FY 18. Funds in FY 19 are required for installation planning activities in preparation for installation in FY 20. Increased installation funding account for firm fixed price contract cost structure.																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7				P-1 Line Item Number / Title: 2606 / Cooperative Engagement Capability				Modification Number / Title: 2 / UC003 - PAAA BACKFIT KITS				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	60.439	1.508	2.355	1.211	0.000	1.211	0.000	0.000	0.000	0.000	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	60.439	1.508	2.355	1.211	0.000	1.211	0.000	0.000	0.000	0.000	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	60.439	1.508	2.355	1.211	0.000	1.211	0.000	0.000	0.000	0.000	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Strike Group Anti-Air Warfare (AAW) Improvement. The Planar Antenna Array Assembly (PAAA) Backfit Kit procurements will be replaced with Common Array Block (CAB) - Shipboard Antenna procurements commencing in FY19. PAAA Backfit Kits are installed on CG, DDG, CVN, LPD, and LHD ship classes [PAAA BACKFIT KITS] The Planar Antenna Array Assembly (PAAA) antenna being installed in FY 20 will replace an older Shipboard Active Aperture (SBAA) antenna currently in the Fleet. These SBAA's are very expensive to maintain and some of the parts are becoming obsolete. PAAA Backfit Kits are installed on CG, DDG, CVN, LPD, and LHD ship classes.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7				P-1 Line Item Number / Title: 2606 / Cooperative Engagement Capability					Modification Number / Title: 2 / UC003 - PAAA BACKFIT KITS			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Models of Systems Affected: UC003 PAAA BACKFIT KITS				Modification Type: SGAAW				Related RDT&E PEs: 0603755N, 0603658N				
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Procurement												
Modification Item 1 of 1: UC003 - PAAA BACKFIT KITS												
B Kits												
Non-Recurring												
1.1.1) PAAA BACKFIT KITS - NonOrganic	13 / 43.312	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Subtotal: Non-Recurring	- / 43.312	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Subtotal: UC003 - PAAA BACKFIT KITS	13 / 43.312	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Subtotal: Procurement, All Modification Items	- / 43.312	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Installation												
Modification Item 1 of 1: UC003 - PAAA BACKFIT KITS	- / 17.127	- / 1.508	- / 2.355	- / 1.211	- / 0.000	- / 1.211	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 22.201
Subtotal: Installation	- / 17.127	- / 1.508	- / 2.355	- / 1.211	- / -	- / 1.211	- / -	- / -	- / -	- / -	- / 0.000	- / 22.201
Total												
Total Cost (Procurement + Support + Installation)	60.439	1.508	2.355	1.211	0.000	1.211	0.000	0.000	0.000	0.000	Continuing	Continuing

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7										P-1 Line Item Number / Title: 2606 / Cooperative Engagement Capability										Modification Number / Title: 2 / UC003 - PAAA BACKFIT KITS											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: UC003 - PAAA BACKFIT KITS																															
Manufacturer Information																															
Manufacturer Name: RAYTHEON ⁽²⁵⁾															Manufacturer Location: ST. PETERSBURG, FL																
Administrative Leadtime <i>(in Months)</i> : 1															Production Leadtime <i>(in Months)</i> : 18																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates																															
Delivery Dates																															
Installation Information																															
Method of Implementation: ALTERATION INSTALLATION TEAM (AIT):: Installation Name: PAAA BACKFIT KITS																															
Installation Cost		Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total																		
		<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>																
Prior Years		10 / 17.127	1 / 1.508	1 / 2.355	1 / 1.211	0 / 0.000	1 / 1.211	- / -	- / -	- / -	- / -	0 / 0.000	13 / 22.201																		
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																	
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																	
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																	
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																	
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																	
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																	
FY 2024		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																	
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																	
Total		10 / 17.127	1 / 1.508	1 / 2.355	1 / 1.211	0 / 0.000	1 / 1.211	- / -	- / -	- / -	- / -	- / -	0 / 0.000	13 / 22.201																	
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	10	1	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13
Out	10	1	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13
Footnotes: ⁽²⁵⁾ PAAA Backfit Kits are partial systems. The last option year under the current CEC Production contract is FY 2016.																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7					P-1 Line Item Number / Title: 2606 / Cooperative Engagement Capability					Modification Number / Title: 3 / UC009 - SIGNAL DATA PROCESSOR (SDP) BACKFITS (AN/ USG-2)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	28.022	3.285	7.660	2.666	0.000	2.666	2.317	1.533	0.000	0.000	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	28.022	3.285	7.660	2.666	0.000	2.666	2.317	1.533	0.000	0.000	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	28.022	3.285	7.660	2.666	0.000	2.666	2.317	1.533	0.000	0.000	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Strike Group Anti-Air Warfare (AAW) Improvement. Funds are for the procurement of Signal Data Processors (SDP) backfits in alignment with Fleet Modernization Procurement and Installation Plan for CEC Backfit to CG, DDG, CVN, and LHD ship classes [SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2)] Prior Year and FY12 includes funding to procure AN/USG-2B hardware conversion kits. A new cost code (UC013) was created and the funding for the hardware conversion kits has been realigned to this cost code for FY13-18.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7					P-1 Line Item Number / Title: 2606 / Cooperative Engagement Capability					Modification Number / Title: 3 / UC009 - SIGNAL DATA PROCESSOR (SDP) BACKFITS (AN/USG-2)			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: UC009 SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2)					Modification Type: SGAAW				Related RDT&E PEs: 0603755N, 0603658N				
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: UC009 - SIGNAL DATA PROCESSOR (SDP) BACKFITS (AN/USG-2)													
B Kits													
Recurring													
1.1.1) SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2) - NonOrganic ⁽²⁶⁾	30 / 12.493	3 / 0.695	9 / 2.127	3 / 0.723	- / -	3 / 0.723	- / -	- / -	- / -	- / -	Continuing	Continuing	
Subtotal: Recurring	- / 12.493	- / 0.695	- / 2.127	- / 0.723	- / -	- / 0.723	- / -	- / -	- / -	- / -	Continuing	Continuing	
Subtotal: UC009 - SIGNAL DATA PROCESSOR (SDP) BACKFITS (AN/USG-2)	30 / 12.493	3 / 0.695	9 / 2.127	3 / 0.723	- / -	3 / 0.723	- / -	- / -	- / -	- / -	Continuing	Continuing	
Subtotal: Procurement, All Modification Items	- / 12.493	- / 0.695	- / 2.127	- / 0.723	- / -	- / 0.723	- / -	- / -	- / -	- / -	Continuing	Continuing	
Installation													
Modification Item 1 of 1: UC009 - SIGNAL DATA PROCESSOR (SDP) BACKFITS (AN/USG-2)	- / 15.529	- / 2.590	- / 5.533	- / 1.943	- / 0.000	- / 1.943	- / 2.317	- / 1.533	- / 0.000	- / 0.000	- / 0.000	- / 29.445	
Subtotal: Installation	- / 15.529	- / 2.590	- / 5.533	- / 1.943	- / -	- / 1.943	- / 2.317	- / 1.533	- / -	- / -	- / 0.000	- / 29.445	
Total													
Total Cost (Procurement + Support + Installation)	28.022	3.285	7.660	2.666	0.000	2.666	2.317	1.533	0.000	0.000	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy							Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7				P-1 Line Item Number / Title: 2606 / Cooperative Engagement Capability				Modification Number / Title: 3 / UC009 - SIGNAL DATA PROCESSOR (SDP) BACKFITS (AN/USG-2)				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Modification Item 1 of 1: UC009 - SIGNAL DATA PROCESSOR (SDP) BACKFITS (AN/USG-2)												
Manufacturer Information												
Manufacturer Name: Sechan Electronics, Inc. ⁽²⁷⁾							Manufacturer Location: Lititz, PA					
Administrative Leadtime <i>(in Months)</i> : 3							Production Leadtime <i>(in Months)</i> : 18					
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates												
Delivery Dates												
Manufacturer Name: DRS Laurel Technologies ⁽²⁸⁾							Manufacturer Location: Largo, FL					
Administrative Leadtime <i>(in Months)</i> : 3							Production Leadtime <i>(in Months)</i> : 18					
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates	May 2018	May 2019	May 2020									
Delivery Dates	Nov 2019	Nov 2020	Nov 2021									
Installation Information												
Method of Implementation: ALTERATION INSTALLATION TEAM (AIT):: Installation Name: SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/US												
Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>	Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>	Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>	Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>	Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>	Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>	Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>	Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>	Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>	Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>	Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>	Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>
Prior Years	22 / 15.529	4 / 2.590	4 / 2.044	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	30 / 20.163
FY 2018	- / -	- / -	0 / 0.410	3 / 1.533	0 / 0.000	3 / 1.533	- / -	- / -	- / -	- / -	0 / 0.000	3 / 1.943
FY 2019	- / -	- / -	5 / 3.079	0 / 0.410	0 / 0.000	0 / 0.410	4 / 2.044	- / -	- / -	- / -	0 / 0.000	9 / 5.533
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.273	3 / 1.533	- / -	- / -	0 / 0.000	3 / 1.806
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	22 / 15.529	4 / 2.590	9 / 5.533	3 / 1.943	0 / 0.000	3 / 1.943	4 / 2.317	3 / 1.533	- / -	- / -	0 / 0.000	45 / 29.445

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	P-1 Line Item Number / Title: 2606 / Cooperative Engagement Capability	Modification Number / Title: 3 / UC009 - SIGNAL DATA PROCESSOR (SDP) BACKFITS (AN/USG-2)

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:

Modification Item 1 of 1: UC009 - SIGNAL DATA PROCESSOR (SDP) BACKFITS (AN/USG-2)

Installation Information

Method of Implementation: ALTERATION INSTALLATION TEAM (AIT):: Installation Name: SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/US

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	22	-	4	-	-	2	-	1	6	-	1	2	-	1	-	3	-	-	1	2	-	-	-	-	-	-	-	-	-	-	45
Out	22	-	4	-	-	2	-	1	6	-	1	2	-	1	-	3	-	-	1	2	-	-	-	-	-	-	-	-	-	-	45

Footnotes:

⁽²⁶⁾ A new cost code (UC013) was created and the funding for the hardware conversion kits has been realigned to this cost code for FY13-18. Funds are for the procurement of Signal Data Processors (SDP) backfits in alignment with Fleet Modernization Procurement and Installation Plan for CEC Backfit to CG, DDG, CVN, and LHD ship classes. FY 19 - Added procurement and installation quantity of 5 units for Mode 5 IFF Acceleration. Increased installation costs in FY 19 as a result of higher shipyard costs due to Firm Fixed Priced Contract cost structure. A funding reduction was applied to installations in FY 19 as a result of a Congressional reduction (\$0.421M) in FY 19 against SDP-S.

⁽²⁷⁾ The last option year under the prior SDP-S Production contract with Sechan Electronics is FY16.

⁽²⁸⁾ A competitive follow-on contract was awarded in 4Q FY2017 to DRS Laurel Technologies.

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Exhibit P-3a, Individual Modification: PB 2020 Navy						Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7				P-1 Line Item Number / Title: 2606 / Cooperative Engagement Capability				Modification Number / Title: 4 / UC010 - SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2A)			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	14.717	0.392	0.421	0.804	0.000	0.804	0.384	0.000	0.000	0.000	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	14.717	0.392	0.421	0.804	0.000	0.804	0.384	0.000	0.000	0.000	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	14.717	0.392	0.421	0.804	0.000	0.804	0.384	0.000	0.000	0.000	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Strike Group Anti-Air Warfare (AAW) Improvement. Funds are for the procurement of Signal Data Processors (SDP) backfits for AN/USG-2A equipment in alignment with Fleet Modernization Procurement and Installation Plan for CEC Backfit to CG, DDG, CVN, and LHD ship classes

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7				P-1 Line Item Number / Title: 2606 / Cooperative Engagement Capability						Modification Number / Title: 4 / UC010 - SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2A)			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: UC010 SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2A)				Modification Type: SGAAW				Related RDT&E PEs: 0603755N, 0603658N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: UC010 - SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2A)													
B Kits													
Recurring													
1.1.1) SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2A) - NonOrganic ⁽²⁹⁾	22 / 7.723	1 / 0.232	1 / 0.236	2 / 0.482	- / -	2 / 0.482	- / -	- / -	- / -	- / -	Continuing	Continuing	
Subtotal: Recurring	- / 7.723	- / 0.232	- / 0.236	- / 0.482	- / -	- / 0.482	- / -	- / -	- / -	- / -	Continuing	Continuing	
Subtotal: UC010 - SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2A)	22 / 7.723	1 / 0.232	1 / 0.236	2 / 0.482	- / -	2 / 0.482	- / -	- / -	- / -	- / -	Continuing	Continuing	
Subtotal: Procurement, All Modification Items	- / 7.723	- / 0.232	- / 0.236	- / 0.482	- / -	- / 0.482	- / -	- / -	- / -	- / -	Continuing	Continuing	
Installation													
Modification Item 1 of 1: UC010 - SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2A)	- / 6.994	- / 0.160	- / 0.185	- / 0.322	- / 0.000	- / 0.322	- / 0.384	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 8.045	
Subtotal: Installation	- / 6.994	- / 0.160	- / 0.185	- / 0.322	- / -	- / 0.322	- / 0.384	- / -	- / -	- / -	- / 0.000	- / 8.045	
Total													
Total Cost (Procurement + Support + Installation)	14.717	0.392	0.421	0.804	0.000	0.804	0.384	0.000	0.000	0.000	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy							Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7				P-1 Line Item Number / Title: 2606 / Cooperative Engagement Capability				Modification Number / Title: 4 / UC010 - SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2A)				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Modification Item 1 of 1: UC010 - SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2A)												
Manufacturer Information												
Manufacturer Name: Sechan Electronics, Inc. ⁽³⁰⁾							Manufacturer Location: Lititz, PA					
Administrative Leadtime <i>(in Months)</i> : 3							Production Leadtime <i>(in Months)</i> : 18					
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates												
Delivery Dates												
Manufacturer Name: DRS Laurel Technologies ⁽³¹⁾							Manufacturer Location: Largo, FL					
Administrative Leadtime <i>(in Months)</i> : 3							Production Leadtime <i>(in Months)</i> : 18					
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates	Mar 2018	Mar 2019	Mar 2020									
Delivery Dates	Sep 2019	Sep 2020	Sep 2021									
Installation Information												
Method of Implementation: ALTERATION INSTALLATION TEAM (AIT):: Installation Name: SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/US												
Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>
Prior Years	21 / 6.994	0 / 0.160	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	22 / 7.154
FY 2018	- / -	- / -	1 / 0.161	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	1 / 0.161
FY 2019	- / -	- / -	0 / 0.024	1 / 0.161	0 / 0.000	1 / 0.161	- / -	- / -	- / -	- / -	0 / 0.000	1 / 0.185
FY 2020	- / -	- / -	- / -	0 / 0.161	0 / 0.000	0 / 0.161	2 / 0.384	- / -	- / -	- / -	0 / 0.000	2 / 0.545
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	21 / 6.994	0 / 0.160	2 / 0.185	1 / 0.322	0 / 0.000	1 / 0.322	2 / 0.384	- / -	- / -	- / -	0 / 0.000	26 / 8.045

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	P-1 Line Item Number / Title: 2606 / Cooperative Engagement Capability	Modification Number / Title: 4 / UC010 - SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2A)

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:

Modification Item 1 of 1: UC010 - SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2A)

Installation Information

Method of Implementation: ALTERATION INSTALLATION TEAM (AIT):: Installation Name: SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/US

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	21	-	-	-	-	1	-	-	1	-	-	-	1	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	26
Out	21	-	-	-	-	1	-	-	1	-	-	-	1	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	26

Footnotes:

⁽²⁹⁾ Funds are for the procurement of Signal Data Processors (SDP) backfits for AN/USG-2A equipment in alignment with Fleet Modernization Procurement and Installation Plan for CEC Backfit to CG, DDG, CVN, and LHD ship classes. First Delivery from Competitively awarded August 2017 contract in will be May 2019.

⁽³⁰⁾ The last option year under the current SDP-S Production contract is FY16.

⁽³¹⁾ A competitive follow-on contract was awarded in 4Q FY2017.

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7				P-1 Line Item Number / Title: 2606 / Cooperative Engagement Capability						Modification Number / Title: 5 / UC012 - COMMON ARRAY BLOCK (CAB) ANTENNA - SHIPBOARD		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	0.000	0.000	14.280	0.000	14.280	15.396	24.820	25.443	26.987	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	0.000	0.000	14.280	0.000	14.280	15.396	24.820	25.443	26.987	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	0.000	0.000	14.280	0.000	14.280	15.396	24.820	25.443	26.987	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Strike Group Anti-Air Warfare (AAW) Improvement. Funds are for the procurement of Common Array Block (CAB) antennas for shipboard AN/USG-2B systems in alignment with Fleet Modernization Procurement and Installation Plan for CEC Backfit to CG, DDG, CVN, and LHD ship classes. CAB program delays and cost overruns have led to delayed Pre-Production Unit (PPU) negotiations as well as cost growth to PPUs and potentially follow on Production Units. Efforts are underway to reduce cost on future CAB contracts in order to better align with CEC OPN budget. Additionally, required contracting actions are taking place to enable Planar Array Antenna Assembly (PAAA) production restart for FY 19 and FY20 CEC OPN Backfit Antenna requirements in the event of further delays or cost growth to the CAB program and units in order to support on time ship installs. Unit cost has been updated in accordance with latest proposal pricing from OEM to \$7M per unit in FY 19 and is escalated in FY20-FY24. Procurement and Installation quantities per year have been lowered due to higher unit cost.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7					P-1 Line Item Number / Title: 2606 / Cooperative Engagement Capability					Modification Number / Title: 5 / UC012 - COMMON ARRAY BLOCK (CAB) ANTENNA - SHIPBOARD			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: UC012 COMMON ARRAY BLOCK (CAB) ANTENNA - SHIPBOARD				Modification Type: SGAAW				Related RDT&E PEs: 0603755N, 0603658N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	
Procurement													
<i>Modification Item 1 of 1: UC012 - COMMON ARRAY BLOCK (CAB) ANTENNA - SHIPBOARD</i>													
<i>B Kits</i>													
<i>Recurring</i>													
1.1.1) COMMON ARRAY BLOCK (CAB) ANTENNA - SHIPBOARD - NonOrganic ⁽³²⁾	- / -	- / -	- / -	2 / 14.280	- / -	2 / 14.280	2 / 14.566	3 / 22.286	3 / 22.731	3 / 23.186	Continuing	Continuing	
<i>Subtotal: Recurring</i>	- / 0.000	- / -	- / -	- / 14.280	- / -	- / 14.280	- / 14.566	- / 22.286	- / 22.731	- / 23.186	Continuing	Continuing	
<i>Subtotal: UC012 - COMMON ARRAY BLOCK (CAB) ANTENNA - SHIPBOARD</i>	- / -	- / -	- / -	2 / 14.280	- / -	2 / 14.280	2 / 14.566	3 / 22.286	3 / 22.731	3 / 23.186	Continuing	Continuing	
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.000	- / -	- / -	- / 14.280	- / -	- / 14.280	- / 14.566	- / 22.286	- / 22.731	- / 23.186	Continuing	Continuing	
Installation													
<i>Modification Item 1 of 1: UC012 - COMMON ARRAY BLOCK (CAB) ANTENNA - SHIPBOARD</i>	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.830	- / 2.534	- / 2.712	- / 3.801	Continuing	Continuing	
<i>Subtotal: Installation</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / 0.830	- / 2.534	- / 2.712	- / 3.801	Continuing	Continuing	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	0.000	14.280	0.000	14.280	15.396	24.820	25.443	26.987	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7				P-1 Line Item Number / Title: 2606 / Cooperative Engagement Capability				Modification Number / Title: 5 / UC012 - COMMON ARRAY BLOCK (CAB) ANTENNA - SHIPBOARD				
ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Modification Item 1 of 1: UC012 - COMMON ARRAY BLOCK (CAB) ANTENNA - SHIPBOARD												
Manufacturer Information												
Manufacturer Name: RAYTHEON						Manufacturer Location: ST. PETERSBURG, FL						
Administrative Leadtime <i>(in Months)</i> : 18						Production Leadtime <i>(in Months)</i> : 18						
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates			Jun 2020	Jun 2021								
Delivery Dates			Dec 2021	Dec 2022								
Manufacturer Name: TBD						Manufacturer Location: TBD						
Administrative Leadtime <i>(in Months)</i> : 18						Production Leadtime <i>(in Months)</i> : 18						
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates					Jun 2022	Jun 2023	Jun 2024					
Delivery Dates					Dec 2023	Dec 2024	Dec 2025					
Installation Information												
Method of Implementation: ALTERATION INSTALLATION TEAM (AIT):: Installation Name: COMMON ARRAY BLOCK (CAB) ANTENNA - SHIPBOARD												
Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.830	2 / 1.822	- / -	- / -	0 / 0.000	2 / 2.652
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.712	2 / 1.822	- / -	0 / 0.000	2 / 2.534
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.890	3 / 2.733	0 / 0.000	3 / 3.623
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 1.068	Continuing	Continuing
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.830	2 / 2.534	2 / 2.712	3 / 3.801	Continuing	Continuing

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019																													
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	P-1 Line Item Number / Title: 2606 / Cooperative Engagement Capability	Modification Number / Title: 5 / UC012 - COMMON ARRAY BLOCK (CAB) ANTENNA - SHIPBOARD																													
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:																													
Modification Item 1 of 1: UC012 - COMMON ARRAY BLOCK (CAB) ANTENNA - SHIPBOARD																															
Installation Information																															
Method of Implementation: ALTERATION INSTALLATION TEAM (AIT):: Installation Name: COMMON ARRAY BLOCK (CAB) ANTENNA - SHIPBOARD																															
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	1	1	-	-	2	1	-	39	46
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	1	1	-	-	2	1	-	39	46

Footnotes:

⁽³²⁾ Removed Prior year Procurements and installation costs from FY 17 and Installation costs for FY 18 and FY 19 due to congressional reduction in FY 17 (\$4.069M) and schedule delays. Additionally, required contracting actions are taking place to enable Planar Array Antenna Assembly (PAAA) production restart for FY 19 and FY20 CEC OPN Backfit Antenna requirements in the event of further delays or cost growth to the CAB program and units in order to support on time ship installs. Unit cost has been updated in accordance with latest proposal pricing from OEM to \$7.0M per unit in FY 19 and is escalated in FY20. Procurement and installation quantities per year have been lowered due to higher unit cost. Reduced Quantity to 0 and Funding to \$0.000M in FY 19 due to congressional reduction (\$4.676M) against CAB. Remaining funding was realigned to UC830 and UC004.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment							P-1 Line Item Number / Title: 2611 / Naval Tact Cmd Supt Sys (NTCSS)					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	632.922	10.570	10.991	15.154	0.000	15.154	15.211	16.187	17.750	18.102	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	632.922	10.570	10.991	15.154	0.000	15.154	15.211	16.187	17.750	18.102	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	632.922	10.570	10.991	15.154	0.000	15.154	15.211	16.187	17.750	18.102	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	0.204	0.128	0.103	-	0.103	0.304	0.230	0.233	0.238	Continuing	Continuing
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Naval Tactical Command Support System (NTCSS) is the logistics information system which enables combat lethality by generating and sustaining Navy and Marine Corps force materiel readiness for operational commanders afloat and ashore. NTCSS provides organizational maintenance management capabilities for all afloat and ashore operational forces (ships, submarines, expeditionary, and cyber), as well as organizational and intermediate maintenance management to maintain operational availability of deployed and deployable aircraft. NTCSS also provides personnel administration capabilities, planning and execution of warehouse and inventory management functions for repair parts and consumable material, financial accountability thereof, and support services of food and afloat retail point-of-sale operations. NTCSS system upgrades procures afloat and ashore ruggedized, commercial-off-the-shelf (COTS) computing equipment, which includes servers to support the NTCSS application and database, personal computers (PCs) that will interface with the servers for maintenance and supply transactions, and printers to display output. COTS software, which includes the operating system, comes loaded on the servers and PCs.

Naval Operational Business Logistics Enterprise (NOBLE) family of systems will provide direct support to warfighter readiness with maintenance, supply, and personnel administration capabilities using an open architecture framework that incorporates business process re-engineering (BPR) allowing for the consolidation of standalone application systems. These capabilities include enterprise-wide automation of supply, inventory, and financial functions to the Naval supply system, aviation maintenance support capability that services all levels of aviation maintenance (organizational, intermediate, and depot) for over 2,100 Navy and Marine Corps aircraft, standardized operational business processes for afloat maritime maintenance activities to all naval ships, and Navy-wide personnel and administration data sharing across shipboard and shore-based information systems. NOBLE will meet current and emerging demands for cyber, Financial Improvement and Audit Readiness (FIAR), and Navy logistics and maritime maintenance mission requirements. NOBLE initial fielding procures afloat and ashore ruggedized, commercial-off-the-shelf (COTS) computing equipment, which includes servers to support the NOBLE application and database, personal computers (PCs) that will interface with the servers for maintenance and supply transactions, and printers to display output. COTS software, which includes the operating system, comes loaded on the servers and PCs.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment	P-1 Line Item Number / Title: 2611 / Naval Tact Cmd Supt Sys (NTCSS)

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / NTCSS and NOBLE Ship Set Equipment Upgrades	P-5a			- / 308.216	- / 3.308	- / 4.593	- / 7.145	- / 0.000	- / 7.145
P-3a	2 / Naval Tactical Command Support System MALS/Shore Equipment Upgrades (DY006) (TBD)				- / 324.706	- / 7.262	- / 6.398	- / 8.009	- / 0.000	- / 8.009
P-40	Total Gross/Weapon System Cost				- / 632.922	- / 10.570	- / 10.991	- / 15.154	- / 0.000	- / 15.154

Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / NTCSS and NOBLE Ship Set Equipment Upgrades	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	2 / Naval Tactical Command Support System MALS/Shore Equipment Upgrades (DY006) (TBD)				- / 8.940	- / 8.162	- / 7.117	- / 5.802	Continuing	Continuing
P-40	Total Gross/Weapon System Cost				- / 15.211	- / 16.187	- / 17.750	- / 18.102	Continuing	Continuing

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:

Funding for FY 2020 procures: 1) NTCSS system upgrades for ships; 2) NTCSS system upgrades for Naval Air Stations (NAS), Squadrons, Shore Support Facilities, Fleet Training Centers, Marine Aviation Logistics Squadrons (MALs), Navy Expeditionary Combat Command sites, Special Warfare units, and Commander Naval Surface Forces; 3) NOBLE system initial fielding for Naval Air Squadrons, Marine Aviation Logistics Squadrons (MALs), Navy Expeditionary Combat Command sites, and Special Warfare units; and 4) necessary production engineering and installation support.

Increase from FY 2019 to FY 2020 reflects start of NOBLE MALS/Shore Equipment Upgrades, and increase in quantities for procurement of NTCSS MAL/Shore Equipment Upgrades.

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Exhibit P-5, Cost Analysis: PB 2020 Navy											Date: March 2019							
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7						P-1 Line Item Number / Title: 2611 / Naval Tact Cmd Supt Sys (NTCSS)						Item Number / Title [DODIC]: 1 / NTCSS and NOBLE Ship Set Equipment Upgrades						
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Resource Summary				Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total				
Procurement Quantity (Units in Each)				-		-		-		-		-		-				
Gross/Weapon System Cost (\$ in Millions)				308.216		3.308		4.593		7.145		0.000		7.145				
Less PY Advance Procurement (\$ in Millions)				-		-		-		-		-		-				
Net Procurement (P-1) (\$ in Millions)				308.216		3.308		4.593		7.145		0.000		7.145				
Plus CY Advance Procurement (\$ in Millions)				-		-		-		-		-		-				
Total Obligation Authority (\$ in Millions)				308.216		3.308		4.593		7.145		0.000		7.145				
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																		
Initial Spares (\$ in Millions)				-		-		-		-		-		-				
Gross/Weapon System Unit Cost (\$ in Thousands)				-		-		-		-		-		-				
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Flyaway - NTCSS Ship Set Equipment Upgrades (DY005) Cost																		
Recurring Cost																		
1.1.1) Equipment ^(†) (1)	217.983	720	156.948	37.100	50	1.855	35.301	70	2.471	29.832	70	2.088	-	-	0.000	29.832	70	2.088
Subtotal: Recurring Cost	-	-	156.948	-	-	1.855	-	-	2.471	-	-	2.088	-	-	0.000	-	-	2.088
Subtotal: Flyaway - NTCSS Ship Set Equipment Upgrades (DY005) Cost	-	-	156.948	-	-	1.855	-	-	2.471	-	-	2.088	-	-	0.000	-	-	2.088
Flyaway - NOBLE Equipment Upgrades Cost																		
Recurring Cost																		
2.1.2) MALS/Shore Equipment Upgrades (DY996) ^(†)	-	-	0.000	-	-	0.000	-	-	0.000	66.720	25	1.668	-	-	0.000	66.720	25	1.668
Subtotal: Recurring Cost	-	-	0.000	-	-	0.000	-	-	0.000	-	-	1.668	-	-	0.000	-	-	1.668
Subtotal: Flyaway - NOBLE Equipment Upgrades Cost	-	-	0.000	-	-	0.000	-	-	0.000	-	-	1.668	-	-	0.000	-	-	1.668
Flyaway - Installations Cost																		
Recurring Cost																		
3.1.1) NTCSS Afloat Installation	-	-	132.048	-	-	1.214	-	-	1.800	-	-	1.736	-	-	0.000	-	-	1.736
3.1.2) NTCSS DSA	-	-	5.399	-	-	0.128	-	-	0.175	-	-	0.180	-	-	0.000	-	-	0.180
3.1.5) NOBLE Ashore Installations (DY776)	-	-	0.000	-	-	0.000	-	-	0.000	-	-	1.149	-	-	0.000	-	-	1.149

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Exhibit P-5, Cost Analysis: PB 2020 Navy													Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7						P-1 Line Item Number / Title: 2611 / Naval Tact Cmd Supt Sys (NTCSS)						Item Number / Title [DODIC]: 1 / NTCSS and NOBLE Ship Set Equipment Upgrades						
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
3.1.6) NOBLE Ashore DSA (DY776)	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.098	-	-	0.000	-	-	0.098
Subtotal: Recurring Cost	-	-	137.447	-	-	1.342	-	-	1.975	-	-	3.163	-	-	0.000	-	-	3.163
Subtotal: Flyaway - Installations Cost	-	-	137.447	-	-	1.342	-	-	1.975	-	-	3.163	-	-	0.000	-	-	3.163
Support - Support Costs (DR555) Cost																		
4.1) NTCSS Afloat Production Support	-	-	13.821	-	-	0.111	-	-	0.147	-	-	0.125	-	-	0.000	-	-	0.125
4.2) NOBLE Production Support	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.101	-	-	0.000	-	-	0.101
Subtotal: Support - Support Costs (DR555) Cost	-	-	13.821	-	-	0.111	-	-	0.147	-	-	0.226	-	-	0.000	-	-	0.226
Gross/Weapon System Cost	-	-	308.216	-	-	3.308	-	-	4.593	-	-	7.145	-	-	0.000	-	-	7.145
Remarks:																		
Provides ADP system upgrades and NTCSS-Optimized software to Battle Group and unit level ships.																		
Application subsystems include financial/inventory management, organizational and surface maintenance management, and administrative information systems support. NTCSS procurements will also provide ship capabilities for displaying and storing Computer-aided Acquisition and Logistics Support (CALS) initiative information (digitized engineering drawings, automated technical manuals, etc.).																		
[Flyaway] NOBLE will be fielded at program-of-record (POR) afloat and ashore sites. Ship set and MALS/Shore equipment upgrades continue; hardware and software upgrades required for obsolescence avoidance.																		
Provides ADP system upgrades and NOBLE software to force level and unit level ships.																		
NOBLE MALS/Shore Equipment Upgrades (DY996): Quantity changes from year to year are driven by fact-of-life changes to ashore site availability schedules. The variance in unit cost between fiscal years is attributed to the composition of ashore site configurations that NOBLE will be procuring and installing in any given fiscal year. FY20 will procure 1 MALS, 12 OMA, and 12 SPECWAR sites.																		
(†) indicates the presence of a P-5a																		
Footnotes:																		
(1) Quantity changes from year to year are driven by fact-of-life changes to ship maintenance availability schedules. The average unit cost fluctuation is primarily attributed to variance in system configuration requirements for each NTCSS platform type. Unit cost by hull fluctuates from approximately \$5K to \$70K. For example, the average procurement cost (hardware, software, integration, and engineering support) for a unit level ship (DDG/CG/LSD) is approximately \$50K and the average procurement cost for a force level ship (CVN/LHA/LHD) is approximately \$10K while the average procurement cost for a submarine (SSBN) is approximately \$70K. FY19 will procure: 7 CG, 5 CVN, 30 DDG, 1 LCC, 6 LHD, 3 LPD, 3 LSD, 3 MCM, 5 SSBN and 7 SSN hull types. FY20, by comparison, will procure: 1 AS, 4 CG, 7 CVN, 24 DDG, 1 LCC, 2 LHA, 5 LHD, 4 LPD, 3 LSD, 7 MCM, 3 SSBN and 9 SSN hull types.																		

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	P-1 Line Item Number / Title: 2611 / Naval Tact Cmd Supt Sys (NTCSS)	Item Number / Title [DODIC]: 1 / NTCSS and NOBLE Ship Set Equipment Upgrades

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) Equipment		2018	Spawar Systems Center Atlantic / Charleston, SC	WR	Charleston, SC	Nov 2017	Jan 2018	50	37.100	Y		Oct 2017
1.1.1) Equipment		2019	Spawar Systems Center Atlantic / Charleston, SC	WR	Charleston, SC	Nov 2018	Jan 2019	70	35.301	Y		Oct 2018
1.1.1) Equipment		2020	Spawar Systems Center Atlantic / Charleston, SC	WR	Charleston, SC	Nov 2019	Jan 2020	70	29.832	Y		Oct 2019
2.1.2) MALs/Shore Equipment Upgrades (DY996)		2020	SPAWAR System Center Atlantic / Charleston, SC	WR	Charleston, SC	Nov 2019	Jan 2020	25	66.720	Y		Oct 2019

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Exhibit P-3a, Individual Modification: PB 2020 Navy						Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7				P-1 Line Item Number / Title: 2611 / Naval Tact Cmd Supt Sys (NTCSS)				Modification Number / Title: 2 / Naval Tactical Command Support System MALS/Shore Equipment Upgrades (DY006)			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	324.706	7.262	6.398	8.009	0.000	8.009	8.940	8.162	7.117	5.802	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	324.706	7.262	6.398	8.009	0.000	8.009	8.940	8.162	7.117	5.802	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	324.706	7.262	6.398	8.009	0.000	8.009	8.940	8.162	7.117	5.802	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

NTCSS-Optimized software will continue to be fielded at program-of-record (POR) afloat and ashore sites. Ship set and MALS/Shore equipment upgrades continue; hardware and software upgrades required for obsolescence avoidance.

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7					P-1 Line Item Number / Title: 2611 / Naval Tact Cmd Supt Sys (NTCSS)					Modification Number / Title: 2 / Naval Tactical Command Support System MALS/Shore Equipment Upgrades (DY006)			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: Provides ADP system upgrades and NTCSS-Optimized software to force level and unit level ships.					Modification Type: TBD				Related RDT&E PEs:				
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	
Procurement													
Modification Item 1 of 1: Naval Tactical Command Support System MALS/Shore Equipment Upgrades (DY006)													
B Kits													
Recurring													
1.1.1) Equipment - NonOrganic ⁽²⁾	1,396 / 201.966	60 / 4.279	49 / 3.717	72 / 4.018	- / -	72 / 4.018	83 / 4.375	88 / 3.696	50 / 3.880	37 / 3.273	Continuing	Continuing	
<i>Subtotal: Recurring</i>	- / 201.966	- / 4.279	- / 3.717	- / 4.018	- / -	- / 4.018	- / 4.375	- / 3.696	- / 3.880	- / 3.273	Continuing	Continuing	
<i>Subtotal: Naval Tactical Command Support System MALS/Shore Equipment Upgrades (DY006)</i>	1,396 / 201.966	60 / 4.279	49 / 3.717	72 / 4.018	- / -	72 / 4.018	83 / 4.375	88 / 3.696	50 / 3.880	37 / 3.273	Continuing	Continuing	
<i>Subtotal: Procurement, All Modification Items</i>	- / 201.966	- / 4.279	- / 3.717	- / 4.018	- / -	- / 4.018	- / 4.375	- / 3.696	- / 3.880	- / 3.273	Continuing	Continuing	
Support (All Modification Items)													
2.1) Production Support	- / 13.708	- / 0.257	- / 0.222	- / 0.241	- / 0.000	- / 0.241	- / 0.262	- / 0.221	- / 0.232	- / 0.196	Continuing	Continuing	
2.2) DSA	- / 3.041	- / 0.052	- / 0.060	- / 0.045	- / 0.000	- / 0.045	- / 0.075	- / 0.083	- / 0.060	- / 0.030	Continuing	Continuing	
<i>Subtotal: Support</i>	- / 16.749	- / 0.309	- / 0.282	- / 0.286	- / -	- / 0.286	- / 0.337	- / 0.304	- / 0.292	- / 0.226	Continuing	Continuing	
Installation													
Modification Item 1 of 1: Naval Tactical Command Support System MALS/Shore Equipment Upgrades (DY006)	- / 105.991	- / 2.674	- / 2.399	- / 3.705	- / 0.000	- / 3.705	- / 4.228	- / 4.162	- / 2.945	- / 2.303	Continuing	Continuing	
<i>Subtotal: Installation</i>	- / 105.991	- / 2.674	- / 2.399	- / 3.705	- / -	- / 3.705	- / 4.228	- / 4.162	- / 2.945	- / 2.303	Continuing	Continuing	
Total													
Total Cost (Procurement + Support + Installation)	324.706	7.262	6.398	8.009	0.000	8.009	8.940	8.162	7.117	5.802	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	P-1 Line Item Number / Title: 2611 / Naval Tact Cmd Supt Sys (NTCSS)	Modification Number / Title: 2 / Naval Tactical Command Support System MALS/Shore Equipment Upgrades (DY006)

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:

Modification Item 1 of 1: Naval Tactical Command Support System MALS/Shore Equipment Upgrades (DY006)

Manufacturer Information

Manufacturer Name: Spawar Systems Center Atlantic Manufacturer Location: Charleston, SC

Administrative Leadtime (in Months): 1 Production Leadtime (in Months): 2

Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates	Nov 2017	Nov 2018	Nov 2019				
Delivery Dates	Jan 2018	Jan 2019	Jan 2020				

Installation Information

Method of Implementation: [none specified]:: Installation Name: Equipment

Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	1,396 / 105.991	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	1,396 / 105.991
FY 2018	- / -	60 / 2.674	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	60 / 2.674
FY 2019	- / -	- / -	49 / 2.399	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	49 / 2.399
FY 2020	- / -	- / -	- / -	72 / 3.705	0 / 0.000	72 / 3.705	- / -	- / -	- / -	- / -	0 / 0.000	72 / 3.705
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	83 / 4.228	- / -	- / -	- / -	0 / 0.000	83 / 4.228
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	88 / 4.162	- / -	- / -	0 / 0.000	88 / 4.162
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	50 / 2.945	- / -	0 / 0.000	50 / 2.945
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	37 / 2.303	0 / 0.000	37 / 2.303
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	1,396 / 105.991	60 / 2.674	49 / 2.399	72 / 3.705	0 / 0.000	72 / 3.705	83 / 4.228	88 / 4.162	50 / 2.945	37 / 2.303	Continuing	Continuing

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	1,396	-	20	20	20	-	16	16	17	-	24	24	24	-	27	28	28	-	29	29	30	-	16	17	17	-	12	12	13	Cont.	Cont.
Out	1,396	-	20	20	20	-	16	16	17	-	24	24	24	-	27	28	28	-	29	29	30	-	16	17	17	-	12	12	13	Cont.	Cont.

Footnotes:
⁽²⁾ Quantity changes from year to year are driven by fact-of-life changes to ashore site availability schedules. The variance in unit cost between fiscal years is attributed to the composition of ashore site configurations that NTCSS will be procuring and installing in any given fiscal year. For example, a NTCSS Navy Aviation Squadron (OMA) hardware suite consists of 4 laptop servers, 4 detachment systems

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	P-1 Line Item Number / Title: 2611 / Naval Tact Cmd Supt Sys (NTCSS)	Modification Number / Title: 2 / Naval Tactical Command Support System MALS/Shore Equipment Upgrades (DY006)
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
(for deployment) and 2 squadron printers. The Marine Aviation Logistics Squadron (MALS) ashore sites utilize an NTCSS Virtual Environment (VE) configuration, which allows for the consolidation of multiple systems under a single procurement and installation. A NTCSS MALS hardware suite consists of an IMA rack, 6 laptop servers, 110 laptop workstations, 15 detachment systems (for deployment), 35 IMA printers and 49 squadron printers. The average procurement cost (hardware, software, integration, and engineering support) for an OMA ashore site is approximately \$50K while the average procurement cost for a MALS ashore site is approximately \$650K. FY19 will procure 4 Naval Air Stations, 2 MALS, 41 OMA, and 2 Training/Support sites. FY20, by comparison, will procure 4 Naval Air Stations, 3 MALS, 24 OMA, 39 SPECWAR and 2 Training/Support sites.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment						P-1 Line Item Number / Title: 2614 / Adv Tact Data Link Sys (ATDLS)						
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A					Other Related Program Elements: 0205604N				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	53.198	34.873	30.085	52.753	0.000	52.753	66.952	82.338	57.660	61.728	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	53.198	34.873	30.085	52.753	0.000	52.753	66.952	82.338	57.660	61.728	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	53.198	34.873	30.085	52.753	0.000	52.753	66.952	82.338	57.660	61.728	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	5.647	1.669	2.048	-	2.048	1.192	1.411	2.040	0.060	Continuing	Continuing
Flyaway Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-
Description:												
The Advanced Tactical Data Link Systems (ATDLS) funds the Time Division Multiple Access family of Link 16 terminals including the Multifunctional Information Distribution System - Low Volume Terminal, Multifunctional Information Distribution System - Joint Tactical Radio System, Joint Tactical Information Distribution System (JTIDS) and the Tactical Digital Information Link - Joint (TADIL-J) message standard databases resident in the Command & Control Processor (C2P)/ Common Data Link Management System (CDLMS). ATDLS also funds the Command and Control Processor (C2P) Technology Refresh, Next Generation (NG) C2P (NGC2P) upgrades to meet LHD combat system upgrades, Link-22 capability upgrades, Link 16 terminal upgrades and replacements, Link 16 antenna replacements, Link 16 MOS Terminal Controller Central Processing replacements, Link Monitoring Management Tool, and other ATDLS integration.												
Command and Control Processor (C2P) Terminal Technology Refresh Full Systems Ship/Shore (DR003): C2P computer processing boards are obsolete and have antiquated software code with no industrial base support. Technology Refresh is required address system hardware obsolescence in order to maintain the C2P system operational availability requirement.												
Link 16 Terminal Ship/Shore (DR012): All US Navy ships with legacy Multifunctional Information Distribution System on Ship (MOS) and Joint Tactical Information Distribution System (JTIDS) terminals will have Link 16 terminals replaced with modernized MOS (MOS Mod) terminals to address Crypto Modernization (CM) and Frequency Remapping (FR) mandates and enable the implementation of future enhancements incorporated into the MIDS Joint Tactical Radio System (MIDS-J)terminals. For those ships whose legacy JTIDS or MOS system will not be replaced with MOS Mod by 2025 will have CM/FR product improvement kits installed into the terminal to meet the FR requirement. The overall product improvement effort will bring the Link 16 terminals in compliance with the Department of Defense / Department of Transportation Memorandum of Agreement (31DEC02) and updated National Security Agency approved cryptographic algorithms.												
Link 16 Antenna Replacement (DR012): Existing obsolete dedicated Link 16 shipboard antenna will be replaced.												
Link Monitoring Management Tool (LMMT) Ship/Shore (DR014): LMMT is required to enable Joint Interface Control Officers (JICOs) to effectively monitor and manage the performance of tactical data link networks. Funds procurement and installation of LMMT hardware on ships and shore sites. MIDS will also be procured and installed for CVNs.												
Advanced Tactical Data Link Systems (ATDLS) Training (DR666): Develop initial end-to-end training curriculum and simulators.												

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment						P-1 Line Item Number / Title: 2614 / Adv Tact Data Link Sys (ATDLS)				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: 0205604N				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / Adv Tact Data Link Sys (ATDLS)	P-5a			- / 37.411	- / 14.700	- / 6.834	- / 6.267	- / 0.000	- / 6.267
P-3a	1 / Adv Tact Data Link Sys (ATDLS) (TBD)				- / 15.787	- / 20.173	- / 23.251	- / 46.486	- / 0.000	- / 46.486
P-40	Total Gross/Weapon System Cost				- / 53.198	- / 34.873	- / 30.085	- / 52.753	- / 0.000	- / 52.753
Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / Adv Tact Data Link Sys (ATDLS)	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / Adv Tact Data Link Sys (ATDLS) (TBD)				- / 61.676	- / 73.303	- / 48.337	- / 50.596	Continuing	Continuing
P-40	Total Gross/Weapon System Cost				- / 66.952	- / 82.338	- / 57.660	- / 61.728	Continuing	Continuing
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										
Justification: The FY2020 funding request was reduced by \$2.0 million to account for the availability of prior year execution balances. Overall budget control increase from FY2019 to FY2020 due to achieving full rate production for Link 16 in FY20 and updating the Link 16 fielding schedule to meet Fleet requirements. Advanced Tactical Data Link Systems (ATDLS) procure command and control equipment for both shipboard and shore units including Link 16 Network Program Crypto Modernization (CM) and Frequency Remapping (FR) Upgraded Terminals, Link 16 Network Program Antennas, Command and Control Processor (C2P) hardware and software, and Link Monitoring Management Tool (LMMT) hardware and software to address Air Defense System Integrator (ADSI) obsolesce issues.										

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Exhibit P-5, Cost Analysis: PB 2020 Navy													Date: March 2019								
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7							P-1 Line Item Number / Title: 2614 / Adv Tact Data Link Sys (ATDLS)						Item Number / Title [DODIC]: 1 / Adv Tact Data Link Sys (ATDLS)								
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:											
Resource Summary				Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
Procurement Quantity <i>(Units in Each)</i>				-			-			-			-			-			-		
Gross/Weapon System Cost <i>(\$ in Millions)</i>				37.411			14.700			6.834			6.267			0.000			6.267		
Less PY Advance Procurement <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Net Procurement (P-1) <i>(\$ in Millions)</i>				37.411			14.700			6.834			6.267			0.000			6.267		
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Total Obligation Authority <i>(\$ in Millions)</i>				37.411			14.700			6.834			6.267			0.000			6.267		
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																					
Initial Spares <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>				-			-			-			-			-			-		
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																					
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total					
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)			
Flyaway - Adv Tact Data Link Sys (ATDLS) - DR003 C2P Cost																					
Recurring Cost																					
1.1.1) C2P - Terminal Shore ⁽¹⁾	982.125	8	7.857	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000			
Subtotal: Recurring Cost	-	-	7.857	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000			
Subtotal: Flyaway - Adv Tact Data Link Sys (ATDLS) - DR003 C2P Cost	-	-	7.857	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000			
Flyaway - Adv Tact Data Link Sys (ATDLS) - DR012 LINK 16 Cost																					
Recurring Cost																					
2.1.1) Link 16 - Terminal Shore ^{(†) (2)}	74.000	1	0.074	-	-	0.000	-	-	0.000	154.000	3	0.462	-	-	0.000	154.000	3	0.462			
2.1.2) Link 16 - Antenna ^{(†) (3)}	185.000	6	1.110	201.000	2	0.402	201.000	11	2.211	203.000	9	1.827	-	-	0.000	203.000	9	1.827			
Subtotal: Recurring Cost	-	-	1.184	-	-	0.402	-	-	2.211	-	-	2.289	-	-	0.000	-	-	2.289			
Subtotal: Flyaway - Adv Tact Data Link Sys (ATDLS) - DR012 LINK 16 Cost	-	-	1.184	-	-	0.402	-	-	2.211	-	-	2.289	-	-	0.000	-	-	2.289			
Flyaway - Adv Tact Data Link Sys (ATDLS) - DR014 LINK MONITORING MANAGEMENT TOOL (LMMT) Cost																					
Recurring Cost																					
3.1.1) LMMT - Ship ^{(†) (4)}	130.000	10	1.300	340.000	13	4.420	340.000	1	0.340	-	-	0.000	-	-	0.000	-	-	0.000			
3.1.2) LMMT - Shore ^(†)	119.364	33	3.939	95.000	5	0.475	101.000	1	0.101	101.000	6	0.606	-	-	0.000	101.000	6	0.606			

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7						P-1 Line Item Number / Title: 2614 / Adv Tact Data Link Sys (ATDLS)						Item Number / Title [DODIC]: 1 / Adv Tact Data Link Sys (ATDLS)						
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Subtotal: Recurring Cost	-	-	5.239	-	-	4.895	-	-	0.441	-	-	0.606	-	-	0.000	-	-	0.606
Subtotal: Flyaway - Adv Tact Data Link Sys (ATDLS) - DR014 LINK MONITORING MANAGEMENT TOOL (LMMT) Cost	-	-	5.239	-	-	4.895	-	-	0.441	-	-	0.606	-	-	0.000	-	-	0.606
Flyaway - INSTALLATION - DR776 NON-FMP Cost																		
Recurring Cost																		
4.1.1) C2P - Terminal Shore Install ⁽⁵⁾	-	-	3.276	-	-	1.310	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
4.1.2) Link 16 - Terminal Shore Install ⁽⁶⁾	-	-	0.210	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
4.1.3) LMMT - Shore Install	-	-	3.915	-	-	0.385	-	-	0.079	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	7.401	-	-	1.695	-	-	0.079	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Flyaway - INSTALLATION - DR776 NON-FMP Cost	-	-	7.401	-	-	1.695	-	-	0.079	-	-	0.000	-	-	0.000	-	-	0.000
Flyaway - INSTALLATION - DR777 FMP Cost																		
Recurring Cost																		
5.1.1) Link 16 - Antenna Install ⁽⁷⁾	-	-	0.779	-	-	0.410	-	-	0.410	-	-	1.760	-	-	0.000	-	-	1.760
5.1.2) Link 16 - Antenna DSA ⁽⁸⁾	-	-	0.404	-	-	0.035	-	-	0.266	-	-	0.344	-	-	0.000	-	-	0.344
5.1.3) LMMT - Ship Install ⁽⁹⁾	-	-	0.400	-	-	2.626	-	-	2.424	-	-	0.404	-	-	0.000	-	-	0.404
Subtotal: Recurring Cost	-	-	1.583	-	-	3.071	-	-	3.100	-	-	2.508	-	-	0.000	-	-	2.508
Subtotal: Flyaway - INSTALLATION - DR777 FMP Cost	-	-	1.583	-	-	3.071	-	-	3.100	-	-	2.508	-	-	0.000	-	-	2.508
Flyaway - DSA - DR777/776 Cost																		
Recurring Cost																		
6.1.1) LMMT Terminal Ship / Shore DSA	-	-	0.983	-	-	0.412	-	-	0.272	-	-	0.363	-	-	0.000	-	-	0.363
Subtotal: Recurring Cost	-	-	0.983	-	-	0.412	-	-	0.272	-	-	0.363	-	-	0.000	-	-	0.363
Subtotal: Flyaway - DSA - DR777/776 Cost	-	-	0.983	-	-	0.412	-	-	0.272	-	-	0.363	-	-	0.000	-	-	0.363
Flyaway - ATDLS Consolidated Prior Year Requirements Cost																		

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7						P-1 Line Item Number / Title: 2614 / Adv Tact Data Link Sys (ATDLS)						Item Number / Title [DODIC]: 1 / Adv Tact Data Link Sys (ATDLS)						
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Recurring Cost																		
7.1.1) ATDLS - Consolidated Prior Year Requirements	-	-	3.841	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	3.841	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Flyaway - ATDLS Consolidated Prior Year Requirements Cost	-	-	3.841	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Support - DR555 PRODUCTION SUPPORT Cost																		
8.1) Link 16 - Antenna Production Support	-	-	0.158	-	-	0.007	-	-	0.118	-	-	0.109	-	-	0.000	-	-	0.109
8.2) LMMT -Ship / Shore Production Support	-	-	0.097	-	-	0.647	-	-	0.613	-	-	0.392	-	-	0.000	-	-	0.392
Subtotal: Support - DR555 PRODUCTION SUPPORT Cost	-	-	0.255	-	-	0.654	-	-	0.731	-	-	0.501	-	-	0.000	-	-	0.501
Support - DR666 ATDLS Training Cost																		
9.1) ATDLS Training	-	-	9.068	-	-	3.571	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Support - DR666 ATDLS Training Cost	-	-	9.068	-	-	3.571	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Gross/Weapon System Cost	-	-	37.411	-	-	14.700	-	-	6.834	-	-	6.267	-	-	0.000	-	-	6.267
Remarks:																		
BLI 2614 procures data link components (e.g. circuit cards, routers, antennas, shock mounts, etc.) to replace obsolete ones. There is integration and testing of these components lasting 6-9 months, which causes procurements to be installed in the following fiscal year.																		
Unit cost and installation cost varies by ship/site due to different configurations required for both shore and ship systems.																		
(†) indicates the presence of a P-5a																		
Footnotes:																		
(1) The FY-20 ATDLS budget has consolidated many procurement and installation lines into single procurement or installation line management by ship and shore. "C2P Terminal Shore" replaces the name "C2P Technology Refresh Full System Shore".																		
(2) "Link 16 Terminal Shore" consolidates "Link 16 JTIDS Shore, Link 16 MOS Shore, Link 16 MOS MOD Shore".																		
(3) "Link 16 Antenna" consolidates "Link 16 ESB-4 Antennas" and "Link 16 Upgrade Antenna".																		
(4) "LMMT Ship" consolidates "LMMT Ship (CVN)" and "LMMT Ship (L Class)".																		
(5) "C2P Terminal Shore" replaces the name "C2P Technology Refresh Full System Shore".																		

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Exhibit P-5, Cost Analysis: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	P-1 Line Item Number / Title: 2614 / Adv Tact Data Link Sys (ATDLS)	Item Number / Title [DODIC]: 1 / Adv Tact Data Link Sys (ATDLS)
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
(6) "Link 16 Terminal Shore" consolidates "Link 16 JTIDS Shore, Link 16 MOS Shore, Link 16 MOS MOD Shore". (7) "Link 16 Antenna" consolidates "Link 16 ESB-4 Antennas" and "Link 16 Upgrade Antenna". (8) "Production Support" and "DSA" consolidated into a single ship/shore line by product. (9) "LMMT Ship" consolidates "LMMT Ship (CVN)" and "LMMT Ship (L Class)".		

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7			P-1 Line Item Number / Title: 2614 / Adv Tact Data Link Sys (ATDLS)					Item Number / Title [DODIC]: 1 / Adv Tact Data Link Sys (ATDLS)				
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$ K)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
2.1.1) Link 16 - Terminal Shore		2020	TBD / TBD	C / TBD	SPAWAR	Jun 2020	Dec 2020	3	154.000	N	Jan 2020	
2.1.2) Link 16 - Antenna		2018	SPAWAR Pacific / San Diego	WR	SPAWAR	Jan 2018	Oct 2018	2	201.000	Y		Jun 2014
2.1.2) Link 16 - Antenna		2019	SPAWAR Pacific / San Diego	WR	SPAWAR	Jan 2019	Oct 2019	11	201.000	Y		Jun 2014
2.1.2) Link 16 - Antenna		2020	SPAWAR Pacific / San Diego	WR	SPAWAR	Jan 2020	Oct 2020	9	203.000	Y		Jun 2014
3.1.1) LMMT - Ship		2018	Venesco / Chantilly / Virginia	C / FFP	SPAWAR	Nov 2017	Feb 2018	13	340.000	Y		Oct 2017
3.1.1) LMMT - Ship		2019	Venesco / Chantilly / Virginia	C / FFP	SPAWAR	Nov 2018	Feb 2019	1	340.000	Y		Oct 2017
3.1.2) LMMT - Shore		2018	Venesco / Chantilly / Virginia	C / FFP	SPAWAR	Nov 2017	Feb 2018	5	95.000	Y		Apr 2017
3.1.2) LMMT - Shore		2019	Venesco / Chantilly / Virginia	C / FFP	SPAWAR	Nov 2018	Feb 2019	1	101.000	Y		Apr 2017
3.1.2) LMMT - Shore		2020	Venesco / Chantilly / Virginia	C / FFP	SPAWAR	Nov 2019	Feb 2020	6	101.000	Y		Apr 2017

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Exhibit P-3a, Individual Modification: PB 2020 Navy							Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7				P-1 Line Item Number / Title: 2614 / Adv Tact Data Link Sys (ATDLS)				Modification Number / Title: 1 / Adv Tact Data Link Sys (ATDLS)			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	15.787	20.173	23.251	46.486	0.000	46.486	61.676	73.303	48.337	50.596	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	15.787	20.173	23.251	46.486	0.000	46.486	61.676	73.303	48.337	50.596	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	15.787	20.173	23.251	46.486	0.000	46.486	61.676	73.303	48.337	50.596	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Command and Control Processor (C2P) Technology Refresh Full Systems Ship: C2P computer processing boards are obsolete and have antiquated software code with no industrial base support. Technology refresh is required for C2P software modernization. Additionally, C2P configuration is not shock qualified. Full Systems upgrades are required to achieve 901D shock certification.

"Unit cost and installation cost varies by ship/site due to different configurations required for both shore and ship systems."

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7				P-1 Line Item Number / Title: 2614 / Adv Tact Data Link Sys (ATDLS)					Modification Number / Title: 1 / Adv Tact Data Link Sys (ATDLS)			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Models of Systems Affected: [No Model Specified]				Modification Type: TBD				Related RDT&E PEs: 0205604N				
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Procurement												
Modification Item 1 of 1: Adv Tact Data Link Sys (ATDLS)												
B Kits												
Recurring												
1.1.1) Link 16 Terminal Ship - NonOrganic ⁽¹⁰⁾												
3 / 2.469 - / - 1 / 0.760 45 / 29.250 - / - 45 / 29.250 45 / 29.541 48 / 37.296 18 / 13.986 27 / 20.979 Continuing Continuing												
1.1.2) C2P Terminal Ship - NonOrganic ⁽¹¹⁾												
9 / 9.026 13 / 13.442 7 / 6.692 9 / 6.750 - / - 9 / 6.750 6 / 4.568 8 / 6.182 8 / 6.274 15 / 11.940 Continuing Continuing												
Subtotal: Recurring												
- / 11.495 - / 13.442 - / 7.452 - / 36.000 - / - - / 36.000 - / 34.109 - / 43.478 - / 20.260 - / 32.919 Continuing Continuing												
Subtotal: Adv Tact Data Link Sys (ATDLS)												
12 / 11.495 13 / 13.442 8 / 7.452 54 / 36.000 - / - 54 / 36.000 51 / 34.109 56 / 43.478 26 / 20.260 42 / 32.919 Continuing Continuing												
Subtotal: Procurement, All Modification Items												
- / 11.495 - / 13.442 - / 7.452 - / 36.000 - / - - / 36.000 - / 34.109 - / 43.478 - / 20.260 - / 32.919 Continuing Continuing												
Support (All Modification Items)												
2.1) Link 16 Terminal Ship / Shore DSA ⁽¹²⁾												
- / 0.059 - / 0.230 - / 1.137 - / 1.200 - / 0.000 - / 1.200 - / 1.364 - / 5.248 - / 1.285 - / 1.651 Continuing Continuing												
2.2) Link 16 Terminal Ship / Shore Production Support												
- / 0.054 - / 0.000 - / 1.652 - / 0.929 - / 0.000 - / 0.929 - / 1.356 - / 1.564 - / 1.278 - / 1.444 Continuing Continuing												
2.3) C2P Terminal Ship / Shore DSA												
- / 0.239 - / 0.753 - / 1.675 - / 1.275 - / 0.000 - / 1.275 - / 0.848 - / 0.865 - / 0.735 - / 1.144 Continuing Continuing												
2.4) C2P Terminal Ship / Shore Production Support												
- / 0.285 - / 0.573 - / 0.643 - / 0.402 - / 0.000 - / 0.402 - / 0.504 - / 0.721 - / 0.683 - / 0.654 Continuing Continuing												
Subtotal: Support												
- / 0.637 - / 1.556 - / 5.107 - / 3.806 - / - - / 3.806 - / 4.072 - / 8.398 - / 3.981 - / 4.893 Continuing Continuing												
Installation												
Modification Item 1 of 1: Adv Tact Data Link Sys (ATDLS)												
- / 3.655 - / 5.175 - / 10.692 - / 6.680 - / 0.000 - / 6.680 - / 23.495 - / 21.427 - / 24.096 - / 12.784 Continuing Continuing												
Subtotal: Installation												
- / 3.655 - / 5.175 - / 10.692 - / 6.680 - / - - / 6.680 - / 23.495 - / 21.427 - / 24.096 - / 12.784 Continuing Continuing												
Total												
Total Cost (Procurement + Support + Installation)												
15.787 20.173 23.251 46.486 0.000 46.486 61.676 73.303 48.337 50.596 Continuing Continuing												

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Exhibit P-3a, Individual Modification: PB 2020 Navy							Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7				P-1 Line Item Number / Title: 2614 / Adv Tact Data Link Sys (ATDLS)				Modification Number / Title: 1 / Adv Tact Data Link Sys (ATDLS)				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Modification Item 1 of 1: Adv Tact Data Link Sys (ATDLS)												
Manufacturer Information												
Manufacturer Name: Data Link Solutions							Manufacturer Location: Cedar Rapids, Iowa					
Administrative Leadtime (in Months): 4							Production Leadtime (in Months): 12					
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates		Feb 2019	Feb 2020									
Delivery Dates		Feb 2020	Feb 2021									
Manufacturer Name: TBD							Manufacturer Location: TBD					
Administrative Leadtime (in Months): 4							Production Leadtime (in Months): 12					
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates		Feb 2019	Feb 2020									
Delivery Dates		Feb 2020	Feb 2021									
Manufacturer Name: SSC PAC							Manufacturer Location: San Diego, CA					
Administrative Leadtime (in Months): 8							Production Leadtime (in Months): 12					
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates	Jun 2018											
Delivery Dates	Jun 2019											
Installation Information												
Method of Implementation: [none specified]:: Installation Name: Link 16 Terminal Ship												
Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	3 / 1.520	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 1.520
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	1 / 0.380	0 / 0.000	1 / 0.380	- / -	- / -	- / -	- / -	0 / 0.000	1 / 0.380
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	45 / 17.100	- / -	- / -	- / -	0 / 0.000	45 / 17.100
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	45 / 17.100	- / -	- / -	0 / 0.000	45 / 17.100
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	48 / 18.240	- / -	0 / 0.000	48 / 18.240
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	18 / 6.840	0 / 0.000	18 / 6.840
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	3 / 1.520	- / -	1 / 0.380	0 / 0.000	1 / 0.380	45 / 17.100	45 / 17.100	48 / 18.240	18 / 6.840	Continuing	Continuing

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Exhibit P-3a, Individual Modification: PB 2020 Navy																								Date: March 2019							
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7												P-1 Line Item Number / Title: 2614 / Adv Tact Data Link Sys (ATDLS)												Modification Number / Title: 1 / Adv Tact Data Link Sys (ATDLS)							
ID Code (A=Service Ready, B=Not Service Ready) :																		MDAP/MAIS Code:													
Modification Item 1 of 1: Adv Tact Data Link Sys (ATDLS)																															
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: Link 16 Terminal Ship																															
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	-	-	-	3	-	-	-	-	-	-	-	1	-	-	-	22	23	-	-	22	23	-	-	24	24	-	-	9	9	Cont.	Cont.
Out	-	-	-	-	3	-	-	-	-	-	-	-	1	-	-	-	22	23	-	-	22	23	-	-	24	24	-	-	9	Cont.	Cont.
Method of Implementation: [none specified]:: Installation Name: C2P Terminal Ship																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		4 / 3.655		5 / 3.655		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		9 / 7.310							
FY 2018		- / -		- / -		11 / 10.692		2 / 1.400		0 / 0.000		2 / 1.400		- / -		- / -		- / -		- / -		0 / 0.000		13 / 12.092							
FY 2019		- / -		- / -		- / -		7 / 4.900		0 / 0.000		7 / 4.900		- / -		- / -		- / -		- / -		0 / 0.000		7 / 4.900							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		9 / 6.395		- / -		- / -		- / -		0 / 0.000		9 / 6.395							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		6 / 4.327		- / -		- / -		0 / 0.000		6 / 4.327							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		8 / 5.856		- / -		0 / 0.000		8 / 5.856							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		8 / 5.944		0 / 0.000		8 / 5.944							
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		Continuing		Continuing							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		4 / 3.655		5 / 3.655		11 / 10.692		9 / 6.300		0 / 0.000		9 / 6.300		9 / 6.395		6 / 4.327		8 / 5.856		8 / 5.944		Continuing		Continuing							
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	1	4	1	-	3	-	-	4	7	-	2	3	4	-	-	5	4	-	-	3	3	-	-	4	4	-	-	4	4	Cont.	Cont.
Out	1	-	5	-	-	3	-	-	4	7	-	2	3	4	-	-	5	4	-	-	3	3	-	-	4	4	-	-	4	Cont.	Cont.
Footnotes:																															
(10) The FY20 ATDLS budget has consolidated many procurement and installation lines into single line management by ship and shore. "Link 16 Terminal Ship" consolidates all lines from called "Link 16 JTIDS Ship, Link 16 MOS ship, Link 16 MOS MOD ship, Link 16 MOS terminal controllers (TC)." The average unit cost fluctuation is primarily attributed to variance in system configuration requirements for each Link 16 platform type.																															
(11) "C2P Terminal Ship" consolidates "C2P Technology Refresh Full System Ship" and "C2P LHD Upgrades".																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	P-1 Line Item Number / Title: 2614 / Adv Tact Data Link Sys (ATDLS)	Modification Number / Title: 1 / Adv Tact Data Link Sys (ATDLS)
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
(12) "Production Support" and "DSA" consolidated into a single ship/shore line by product.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment						P-1 Line Item Number / Title: 2618 / Navy Command and Control System (NCCS)						
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A					Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	43.802	5.158	3.769	3.390	0.000	3.390	3.538	3.630	3.701	3.775	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	43.802	5.158	3.769	3.390	0.000	3.390	3.538	3.630	3.701	3.775	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	43.802	5.158	3.769	3.390	0.000	3.390	3.538	3.630	3.701	3.775	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	0.150	0.187	0.053	-	0.053	0.056	-	-	-	-	0.446
Flyaway Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-
Description:												
Funding includes Global Command and Control System-Maritime (GCCS-M), the Navy fielded portions of GCCS-Joint, and Joint Automated Deep Operations Coordination System (JADOCS). GCCS-M is further delineated by Afloat and Ashore.												
GCCS-M is the Maritime implementation of the United States (U.S.) Global Command and Control System (GCCS). It provides Maritime Commanders at all echelons of command with a single, integrated, scalable Command, Control, Communication, Computers and Intelligence (C4I) system that fuses, correlates, filters, maintains and displays location, and attribute information on friendly, hostile and neutral land, sea and air forces. It takes this information and integrates it with available intelligence and environmental information to support commander decision making. It operates in near real-time, constantly updating unit positions and other situational awareness data. GCCS-M also records data in appropriate databases and maintains a history of changes to those records. System operators use the data to construct relevant tactical pictures using maps, charts, topography overlays, oceanographic overlays, meteorological overlays, imagery and all-source intelligence information coordinated into a Common Operational Picture (COP) that can be shared locally and with other sites. GCCS-M is not a weapon system, but receives data from, and interfaces with Navy integrated weapons systems. Navy Commanders review and evaluate the general tactical situation, plan actions and operations, direct forces, synchronize tactical movements, and integrate force maneuver with firepower. GCCS-M operates on General Service (GENSER) Secret networks in a variety of environments and supports joint, coalition and allied forces. GCCS-M is implemented Afloat and at Ashore fixed command centers. Increment 1 includes all GCCS-M software versions 4.0 and earlier. Increment 2 is GCCS-M 4.1.												
[P5 / FA010 GCCS-M Afloat]: GCCS-M Afloat provides Command and Control capability to Force Level Ships (e.g., CVN Carriers, LCC Command Ships, LHA and LHD Amphibious Ships), Unit Level Ships (e.g., CG Cruisers, DDG Destroyers, MCM Mine Countermeasure Ships, LPD and LSD Amphibious Ships, FF/LCS Littoral Combat Ships, PC Coastal Patrol Ships), Submarines (e.g., SSN/SSBN/SSGN Submarines), the Software Support Activity (SSA), and the In-Service Engineering Activity (ISEA).												
[P5 / FA020 GCCS-M Ashore]: GCCS-M Ashore provides evolutionary systems and ancillary equipment upgrades to support Fleet Commanders, Force Anti-Submarine Warfare Commanders, Submarine Operating Authorities, Aegis Ashore Missile Defense Systems, and Technical Training Equipment Sites worldwide. GCCS-M Ashore provides systems that receive, process, display, maintain and/or assess unit characteristics, employment scheduling, material condition, combat readiness, war fighting capabilities, and positional information of own, allied, and hostile forces. GCCS-M Ashore provides the tools necessary for fleet and Shore based Commanders to execute plans, transmit tasking, and provide tactical information to subordinate forces.												
[P5 / FA040 GCCS (Joint) Support Equipment]: Global Command and Control System- Joint (GCCS-J) is a Department of Defense (DoD) Program of Record managed by the Defense Information Systems Agency (DISA) GCCS-J Program Management Office (PMO). The GCCS-J system requirements, software release schedule, and system fielding plan are determined by the DISA GCCS-J PMO in coordination												

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment		P-1 Line Item Number / Title: 2618 / Navy Command and Control System (NCCS)
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
with the Joint Staff. GCCS-J supports the Joint Staff and Combatant Commanders by providing Command, Control, Communication, Computers and Intelligence (C4I) data processing capabilities, including status of forces and support requirements for use in national security decision making, force preparation and operational planning and execution. Global Command and Control System- Joint (GCCS-J) provides support for Fleet Communications Center interfacing with deployed units and other fixed Fleet and Joint Command Centers. [P5 / FA060 Joint Automated Deep Operations Coordination System (JADOCS)]: Provide funding for the fielding of JADOCS software on new installation hardware. JADOCS is required to provide the capability to coordinate joint targeting and mission assignment for time sensitive targets and other rapid-response missions across Functional Component Commanders, Joint and Combined Force Commanders, Geographic Combatant Commanders, and Special Operations Commanders.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment						P-1 Line Item Number / Title: 2618 / Navy Command and Control System (NCCS)				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / Navy Command and Control System (NCCS)	P-5a			- / 43.802	- / 5.158	- / 3.769	- / 3.390	- / 0.000	- / 3.390
P-40	Total Gross/Weapon System Cost				- / 43.802	- / 5.158	- / 3.769	- / 3.390	- / 0.000	- / 3.390
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										

Justification:

The FY 2020 budget procures and installs Global Command and Control System - Joint (GCCS-J) Ashore workstations, servers, Local Area Network (LAN) hardware and software, communications equipment, and Joint Automated Deep Operations Coordination System (JADOCS), and Global Command and Control System - Maritime (GCCS-M) software, to include Windows XP eradication efforts on GCCS-M afloat platforms.

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Exhibit P-5, Cost Analysis: PB 2020 Navy													Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7							P-1 Line Item Number / Title: 2618 / Navy Command and Control System (NCCS)						Item Number / Title [DODIC]: 1 / Navy Command and Control System (NCCS)					
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Resource Summary				Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total				
Procurement Quantity <i>(Units in Each)</i>				-		-		-		-		-		-				
Gross/Weapon System Cost <i>(\$ in Millions)</i>				43.802		5.158		3.769		3.390		0.000		3.390				
Less PY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Net Procurement (P-1) <i>(\$ in Millions)</i>				43.802		5.158		3.769		3.390		0.000		3.390				
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Total Obligation Authority <i>(\$ in Millions)</i>				43.802		5.158		3.769		3.390		0.000		3.390				
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																		
Initial Spares <i>(\$ in Millions)</i>				-		0.150		0.187		0.053		-		0.053				
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>				-		-		-		-		-		-				
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Flyaway - FA010 GCCS-M Afloat Cost																		
Recurring Cost																		
1.1.1) GCCS-M Increment 2 Afloat ^(†)	23.576	132	3.112	3.000	47	0.141	4.026	39	0.157	2.793	29	0.081	-	-	-	2.793	29	0.081
Subtotal: Recurring Cost	-	-	3.112	-	-	0.141	-	-	0.157	-	-	0.081	-	-	-	-	-	0.081
Subtotal: Flyaway - FA010 GCCS-M Afloat Cost	-	-	3.112	-	-	0.141	-	-	0.157	-	-	0.081	-	-	-	-	-	0.081
Flyaway - FA020 GCCS-M Ashore Cost																		
Recurring Cost																		
2.1.1) GCCS-M Increment 2 Ashore ^(†) ₍₁₎	1,070.000	2	2.140	184.500	2	0.369	-	-	-	1.000	2	0.002	-	-	-	1.000	2	0.002
Subtotal: Recurring Cost	-	-	2.140	-	-	0.369	-	-	-	-	-	0.002	-	-	-	-	-	0.002
Subtotal: Flyaway - FA020 GCCS-M Ashore Cost	-	-	2.140	-	-	0.369	-	-	-	-	-	0.002	-	-	-	-	-	0.002
Flyaway - FA040 GCCS (Joint) Support Equipment Cost																		
Recurring Cost																		
3.1.1) GCCS (Joint) Support Equipment ^(†)	156.341	41	6.410	106.833	6	0.641	87.167	6	0.523	85.667	6	0.514	-	-	-	85.667	6	0.514
Subtotal: Recurring Cost	-	-	6.410	-	-	0.641	-	-	0.523	-	-	0.514	-	-	-	-	-	0.514
Subtotal: Flyaway - FA040 GCCS (Joint) Support Equipment Cost	-	-	6.410	-	-	0.641	-	-	0.523	-	-	0.514	-	-	-	-	-	0.514

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Exhibit P-5, Cost Analysis: PB 2020 Navy											Date: March 2019							
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7						P-1 Line Item Number / Title: 2618 / Navy Command and Control System (NCCS)						Item Number / Title [DODIC]: 1 / Navy Command and Control System (NCCS)						
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Flyaway - FA060 Joint Automated Deep Operations Coordination System (JADOCS) Cost																		
Recurring Cost																		
4.1.1) JADOCS ^(†)	9.259	27	0.250	12.333	3	0.037	13.200	5	0.066	10.333	3	0.031	-	-	-	10.333	3	0.031
Subtotal: Recurring Cost	-	-	0.250	-	-	0.037	-	-	0.066	-	-	0.031	-	-	-	-	-	0.031
Subtotal: Flyaway - FA060 Joint Automated Deep Operations Coordination System (JADOCS) Cost	-	-	0.250	-	-	0.037	-	-	0.066	-	-	0.031	-	-	-	-	-	0.031
Flyaway - ASHORE INSTALLATIONS - FA776 Non FMP Cost																		
Recurring Cost																		
5.1.1) GCCS-M Increment 2 Ashore Installation and Pre-Installation Design	-	-	0.881	-	-	0.343	-	-	-	-	-	0.138	-	-	-	-	-	0.138
5.1.2) GCCS (Joint) Support Equipment	-	-	3.586	-	-	0.500	-	-	0.450	-	-	0.475	-	-	-	-	-	0.475
5.1.3) GCCS-J Pre-Installation Design	-	-	1.044	-	-	0.194	-	-	0.180	-	-	0.159	-	-	-	-	-	0.159
Subtotal: Recurring Cost	-	-	5.511	-	-	1.037	-	-	0.630	-	-	0.772	-	-	-	-	-	0.772
Subtotal: Flyaway - ASHORE INSTALLATIONS - FA776 Non FMP Cost	-	-	5.511	-	-	1.037	-	-	0.630	-	-	0.772	-	-	-	-	-	0.772
Flyaway - AFLOAT INSTALLATIONS - FA777 FMP Cost																		
Recurring Cost																		
6.1.1) GCCS-M Increment 2 Afloat	-	-	11.515	-	-	2.854	-	-	2.345	-	-	1.926	-	-	-	-	-	1.926
6.1.2) JADOCS	-	-	0.340	-	-	0.056	-	-	0.030	-	-	0.049	-	-	-	-	-	0.049
Subtotal: Recurring Cost	-	-	11.855	-	-	2.910	-	-	2.375	-	-	1.975	-	-	-	-	-	1.975
Subtotal: Flyaway - AFLOAT INSTALLATIONS - FA777 FMP Cost	-	-	11.855	-	-	2.910	-	-	2.375	-	-	1.975	-	-	-	-	-	1.975
Flyaway - Consolidated Prior Year Requirements Cost																		
Recurring Cost																		
7.1.1) Consolidated Prior Year Requirements ⁽²⁾	-	-	14.338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	14.338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2020 Navy										Date: March 2019							
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7					P-1 Line Item Number / Title: 2618 / Navy Command and Control System (NCCS)					Item Number / Title [DODIC]: 1 / Navy Command and Control System (NCCS)							

ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:							

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
<i>Subtotal: Flyaway - Consolidated Prior Year Requirements Cost</i>	-	-	14.338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Support - FA555 Production Support Cost																		
8.1) GCCS (Joint) Production Engineering Support	-	-	0.186	-	-	0.023	-	-	0.018	-	-	0.015	-	-	-	-	-	0.015
<i>Subtotal: Support - FA555 Production Support Cost</i>	-	-	0.186	-	-	0.023	-	-	0.018	-	-	0.015	-	-	-	-	-	0.015
Gross/Weapon System Cost	-	-	43.802	-	-	5.158	-	-	3.769	-	-	3.390	-	-	0.000	-	-	3.390

Remarks:

- Global Command and Control System - Maritime (GCCS-M) Afloat install quantities also include refresh units.
- For GCCS-M software-only installations, Other Procurement, Navy (OPN) is the appropriate fund source when the GCCS-M installation is an incidental cost to the Common Computing Environment (CCE)/ Consolidated Afloat Networks and Enterprise Services (CANES) hardware installation.
- GCCS-M unit costs are based on the average cost of all the platforms or sites installed within a given fiscal year. Unit cost variances are due to the diverse types of upgrade requirements per platform or site.
- Global Command and Control System - Joint (GCCS-J) quantities represent the number of complete unit upgrades to existing systems. The cost to upgrade each unit varies based on the number of servers, computers, and monitors and the equipment configurations. The different unit sizes and configurations result in varying unit costs.

(t) indicates the presence of a P-5a

Footnotes:

- (1) FY18 unit cost of \$184.5K represents the average of hardware/software procured, whereas the FY20 unit cost of \$1K represents a software only cost (installed along with new CANES hardware).
- (2) Consolidated prior year requirements include GCCS-M Increment 1 Afloat (FA010/FA777), GCCS-M Increment 2 Ashore Training Curriculum (FA666), GCCS-M Increment 2 Ashore Production Support (FA555), JADOCS Ashore Installations (FA776).

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7				P-1 Line Item Number / Title: 2618 / Navy Command and Control System (NCCS)					Item Number / Title [DODIC]: 1 / Navy Command and Control System (NCCS)			
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) GCCS-M Increment 2 Afloat		2018	SSC Atlantic/Pacific ⁽³⁾ / SPAWAR	WR	SPAWAR	Nov 2017	Jan 2018	47	3.000	Y		
1.1.1) GCCS-M Increment 2 Afloat		2019	SSC Atlantic/Pacific ⁽³⁾ / SPAWAR	WR	SPAWAR	Nov 2018	Jan 2019	39	4.026	Y		
1.1.1) GCCS-M Increment 2 Afloat		2020	SSC Atlantic/Pacific ⁽³⁾ / SPAWAR	WR	SPAWAR	Nov 2019	Jan 2020	29	2.793	Y		
2.1.1) GCCS-M Increment 2 Ashore		2018	SSC Atlantic/Pacific / SPAWAR	WR	SPAWAR	Nov 2017	Jan 2018	2	184.500	Y		
2.1.1) GCCS-M Increment 2 Ashore		2020	SSC Atlantic/Pacific / SPAWAR	WR	SPAWAR	Nov 2019	Jan 2020	2	1.000	Y		
3.1.1) GCCS (Joint) Support Equipment		2018	SSC Atlantic/SPAWAR / SPAWAR	WR	SPAWAR	Jan 2018	Apr 2018	6	106.833	Y		
3.1.1) GCCS (Joint) Support Equipment		2019	SSC Atlantic/SPAWAR / SPAWAR	WR	SPAWAR	Jan 2019	Apr 2019	6	87.167	Y		
3.1.1) GCCS (Joint) Support Equipment		2020	SSC Atlantic/SPAWAR / SPAWAR	WR	SPAWAR	Jan 2020	Apr 2020	6	85.667	Y		
4.1.1) JADOCS		2018	SSC Pacific / San Diego, CA	WR	SPAWAR	Nov 2017	Jan 2018	3	12.333	Y		
4.1.1) JADOCS		2019	SSC Pacific / San Diego, CA	WR	SPAWAR	Nov 2018	Jan 2019	5	13.200	Y		
4.1.1) JADOCS		2020	SSC Pacific / San Diego, CA	WR	SPWAR	Nov 2019	Jan 2020	3	10.333	Y		
Footnotes: ⁽³⁾ For GCCS-M Increment 1 Afloat, Increment 2 Afloat, and Increment 2 Ashore: Space and Naval Warfare Systems Command Systems Center (SPAWARSYSCEN), Pacific and Atlantic are procuring, integrating and installation agents. There are multiple hardware and software contracts awarded under each of these cost elements.												

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment						P-1 Line Item Number / Title: 2622 / Minesweeping System Replacement						
ID Code (A=Service Ready, B=Not Service Ready): B			Program Elements for Code B Items: 0603502N, 0604028N					Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	282.579	57.343	32.367	19.448	0.000	19.448	15.858	16.281	16.753	17.087	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	282.579	57.343	32.367	19.448	0.000	19.448	15.858	16.281	16.753	17.087	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	282.579	57.343	32.367	19.448	0.000	19.448	15.858	16.281	16.753	17.087	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	1.202	-	0.658	-	0.658	0.325	0.327	-	-	-	2.512
Flyaway Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-
Description:												
Provide systems, subsystems, and engineering change kits for minehunting, navigation, and tactical display operations by the surface Mine Countermeasure (MCM) force. Engineering change kits improve reliability and maintainability and correct deficiencies to allow equipment to perform in accordance with operational requirements.												
HME Ship Systems support software integration and hardware upgrades to legacy MCM ships and software tech refresh for the Integrated Ship Control System (ISCS) on MCM Class Ships forward deployed to ensure MCM mine hunting and minesweeping capability whereas legacy sustainment is not feasible and would result in delays and obsolescence. This program also supports ship change upgrades computer workstations, replaces network switches, and replaces the operating system. HME Systems program ends in FY19.												
The MCM Combat System Upgrades program consists of a series of incremental upgrades to the current combat system via Engineering Change Kits. The upgrades improve reliability and maintainability and correct deficiencies to allow the equipment to perform in accordance with operational requirements. This includes supportability and obsolescence Upgrade Engineering Changes of the MCM-1 Class Ship combat systems to resolve issues with the AN/SLQ-48 Mine Neutralization System, installation of Mine Environmental Decision Aids Library (MEDAL) Expeditionary Systems, and improved SSQ-94 System Trainer to MCM Ships' and integrating the SQQ-32 High Frequency Wide Band (HFWB) and SSN-2 PINS upgrade and resolves obsolescence issues.												
The Knifefish Surface Mine Countermeasure Unmanned Undersea Vehicle (SMCM UUV) program procures Unmanned Undersea Vehicles to support clandestine mine detection capability against volume and bottom mines including buried mine detection. The Knifefish system is composed of two UUVs, batteries, launch and handling system, and other support equipment. Program moved to OPN 1611 Small and Medium UUVs beginning in FY20.												
Magnetic Silencing Facility Upgrades supports hardware, auxiliary systems and support in association with the upgrade of the current aging CONUS and Outside Continental United States (OCONUS) Magnetic Silencing Facilities so the calibration of the new Open-Loop Magnetic Systems or Advanced Degaussing System ships and submarines can be accomplished for worldwide operation. The upgrade will also ensure that the ships/submarines will be able to meet OPNAV 8950.2G signature requirements and will be less susceptible to Electro-Magnetic threat systems.												
MCM EO/IR Sensors - FY19 Congressional Add (Cost Code LV090) to procure and install additional electro-optical infrared surveillance sensors (EO/IR) on forward deployed minesweepers. These advanced systems will provide situational awareness for ships continually relied upon to perform critical missions while conducting patrols.												

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment						P-1 Line Item Number / Title: 2622 / Minesweeping System Replacement				
ID Code (A=Service Ready, B=Not Service Ready): B			Program Elements for Code B Items: 0603502N, 0604028N			Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / HME SHIP SYSTEMS				- / 18.252	- / 2.375	- / 2.132	- / 0.000	- / 0.000	- / 0.000
P-5	2 / MINE COUNTERMEASURES				- / 169.141	- / 8.328	- / 2.931	- / 0.000	- / 0.000	- / 0.000
P-5	3 / UNMANNED SYSTEMS [UNMAN]	P-5a, P-21			- / 0.000	- / 31.010	- / 15.033	- / 0.000	- / 0.000	- / 0.000
P-5	4 / MAGNETIC SILENCING FACILITY UPGRADES				- / 95.186	- / 15.630	- / 7.271	- / 19.448	- / 0.000	- / 19.448
P-5	5 / MCM EO / IR SENSORS				- / 0.000	- / 0.000	- / 5.000	- / 0.000	- / 0.000	- / 0.000
P-40	Total Gross/Weapon System Cost				- / 282.579	- / 57.343	- / 32.367	- / 19.448	- / 0.000	- / 19.448
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										

Justification:

FY20 increase in funding for Magnetic Silencing Facility Program due to the scheduled Guam equipment installation, a more intensive project currently lacking existing facilities equipment, transportation costs related to the long distances the equipment must travel to reach Guam, higher than average cost for environmental mitigation needed to meet NEPA requirements, and higher than CONUS cost for in-water equipment installation.

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7						P-1 Line Item Number / Title: 2622 / Minesweeping System Replacement						Item Number / Title [DODIC]: 1 / HME SHIP SYSTEMS						
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Resource Summary				Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total				
Procurement Quantity <i>(Units in Each)</i>				-		-		-		-		-		-				
Gross/Weapon System Cost <i>(\$ in Millions)</i>				18.252		2.375		2.132		0.000		0.000		0.000				
Less PY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Net Procurement (P-1) <i>(\$ in Millions)</i>				18.252		2.375		2.132		0.000		0.000		0.000				
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Total Obligation Authority <i>(\$ in Millions)</i>				18.252		2.375		2.132		0.000		0.000		0.000				
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																		
Initial Spares <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>				-		-		-		-		-		-				
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Software - LV073 - MCM/MHC INTEGRATED SHIP CONTROL SYSTEM Cost																		
Recurring Cost																		
1.1.1) SOFTWARE INTEGRATION	-	-	18.252	-	-	2.375	-	-	2.132	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	18.252	-	-	2.375	-	-	2.132	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Software - LV073 - MCM/MHC INTEGRATED SHIP CONTROL SYSTEM Cost	-	-	18.252	-	-	2.375	-	-	2.132	-	-	0.000	-	-	0.000	-	-	0.000
Gross/Weapon System Cost	-	-	18.252	-	-	2.375	-	-	2.132	-	-	0.000	-	-	0.000	-	-	0.000

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Exhibit P-5, Cost Analysis: PB 2020 Navy													Date: March 2019								
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7							P-1 Line Item Number / Title: 2622 / Minesweeping System Replacement						Item Number / Title [DODIC]: 2 / MINE COUNTERMEASURES								
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:											
Resource Summary				Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
Procurement Quantity <i>(Units in Each)</i>				-			-			-			-			-			-		
Gross/Weapon System Cost <i>(\$ in Millions)</i>				169.141			8.328			2.931			0.000			0.000			0.000		
Less PY Advance Procurement <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Net Procurement (P-1) <i>(\$ in Millions)</i>				169.141			8.328			2.931			0.000			0.000			0.000		
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Total Obligation Authority <i>(\$ in Millions)</i>				169.141			8.328			2.931			0.000			0.000			0.000		
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																					
Initial Spares <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>				-			-			-			-			-			-		
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																					
Cost Elements		Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total				
		Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)		
Hardware - LV075 - MCM COMBAT SYSTEMS Cost																					
Recurring Cost																					
1.1.1) SSQ-94 Trainer		-	-	2.005	-	-	0.993	-	-	0.422	-	-	0.000	-	-	0.000	-	-	0.000		
1.1.2) MCM Combat Systems (MEDAL)		-	-	161.887	-	-	3.585	-	-	1.021	-	-	0.000	-	-	0.000	-	-	0.000		
1.1.3) Obsolescence Upgrades (SLQ-48)		-	-	5.249	-	-	3.750	-	-	1.488	-	-	0.000	-	-	0.000	-	-	0.000		
Subtotal: Recurring Cost		-	-	169.141	-	-	8.328	-	-	2.931	-	-	0.000	-	-	0.000	-	-	0.000		
Subtotal: Hardware - LV075 - MCM COMBAT SYSTEMS Cost		-	-	169.141	-	-	8.328	-	-	2.931	-	-	0.000	-	-	0.000	-	-	0.000		
Gross/Weapon System Cost		-	-	169.141	-	-	8.328	-	-	2.931	-	-	0.000	-	-	0.000	-	-	0.000		

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019							
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7						P-1 Line Item Number / Title: 2622 / Minesweeping System Replacement						Item Number / Title [DODIC]: 3 / UNMANNED SYSTEMS [UNMAN]							
ID Code (A=Service Ready, B=Not Service Ready) :									MDAP/MAIS Code:										
Resource Summary				Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total					
Procurement Quantity <i>(Units in Each)</i>				-		-		-		-		-		-					
Gross/Weapon System Cost <i>(\$ in Millions)</i>				0.000		31.010		15.033		0.000		0.000		0.000					
Less PY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-					
Net Procurement (P-1) <i>(\$ in Millions)</i>				0.000		31.010		15.033		0.000		0.000		0.000					
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-					
Total Obligation Authority <i>(\$ in Millions)</i>				0.000		31.010		15.033		0.000		0.000		0.000					
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																			
Initial Spares <i>(\$ in Millions)</i>				-		-		-		-		-		-					
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>				-		-		-		-		-		-					
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																			
Cost Elements		Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
		Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Hardware - LV079 - SMCM UUV W/LFBB (Knifefish) Cost																			
Recurring Cost																			
1.1.1) SMCM UUV (Knifefish) ^(†) ⁽¹⁾		-	-	0.000	12,873.000	2	25.746	10,765.000	1	10.765	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost		-	-	0.000	-	-	25.746	-	-	10.765	-	-	0.000	-	-	0.000	-	-	0.000
Non Recurring Cost																			
1.2.1) Ancillary Equipment		-	-	0.000	-	-	1.258	-	-	2.795	-	-	0.000	-	-	0.000	-	-	0.000
1.2.2) Production Engineering - Knifefish		-	-	0.000	-	-	0.996	-	-	1.473	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Non Recurring Cost		-	-	0.000	-	-	2.254	-	-	4.268	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Hardware - LV079 - SMCM UUV W/LFBB (Knifefish) Cost		-	-	0.000	-	-	28.000	-	-	15.033	-	-	0.000	-	-	0.000	-	-	0.000
Hardware - LV080 - UNMANNED INFLUENCE SWEEP SYSTEM (UISS) Trainers Cost																			
Recurring Cost																			
2.1.1) UISS Training Equipment ^(†)		-	-	0.000	1,505.000	2	3.010	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost		-	-	0.000	-	-	3.010	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Hardware - LV080 - UNMANNED INFLUENCE SWEEP SYSTEM (UISS) Trainers Cost		-	-	0.000	-	-	3.010	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7						P-1 Line Item Number / Title: 2622 / Minesweeping System Replacement						Item Number / Title [DODIC]: 3 / UNMANNED SYSTEMS [UNMAN]						
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Gross/Weapon System Cost	-	-	0.000	-	-	31.010	-	-	15.033	-	-	0.000	-	-	0.000	-	-	0.000
Remarks: [Hardware] Knifefish program moved to OPN 1611 Small and Medium UUVs beginning in FY20. [Hardware] Unmanned Influence Sweep System (UISS) (LV080): This line item procures the training systems to support the UISS operational units procured for the Littoral Combat Ship (LCS) Mission Modules and Vessels of Opportunity (VOO). UISS consists of an Unmanned Surface Vehicle, power supply, control unit, winch, acoustic generator, magnetic tow cable and a deploy and retrieve subsystem. UISS will provide long endurance and wide area magnetic and acoustic mine sweep capability onboard the LCS class of ships, from ashore and from VOO. (†) indicates the presence of a P-5a Footnotes: (1) The Knifefish Surface Mine Countermeasure Unmanned Undersea Vehicle (SMCM UUV) program procures Unmanned Undersea Vehicles to support clandestine mine detection capability against volume and bottom mines, including buried mine detection. The Knifefish system is composed of two UUVs, batteries, launch and handling system, and other support equipment.																		

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7			P-1 Line Item Number / Title: 2622 / Minesweeping System Replacement						Item Number / Title [DODIC]: 3 / UNMANNED SYSTEMS [UNMAN]			
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) SMCM UUV (Knifefish) ^(†)		2018	General Dynamics MS / Mcleansville, NC	C / FPIF	NAVSEA	Apr 2019	Jun 2020	2	12,873.000	N	Mar 2019	
1.1.1) SMCM UUV (Knifefish) ^(†)		2019	General Dynamics MS / Mcleansville, NC	C / CPIF	NAVSEA	Apr 2019	Jun 2020	1	10,765.000	N	Mar 2019	
2.1.1) UISS Training Equipment		2018	Textron / Hunt Valley, MD	C / FPIF	NAVSEA	Apr 2019	Oct 2020	2	1,505.000	N	Apr 2019	

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2020 Navy																			Date: March 2019														
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7							P-1 Line Item Number / Title: 2622 / Minesweeping System Replacement												Item Number / Title [DODIC]: 3 / UNMANNED SYSTEMS [UNMAN]														
Cost Elements (Units in Each)							Fiscal Year 2019												Fiscal Year 2020												BALANCE		
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	Calendar Year 2019												Calendar Year 2020														
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			
1.1.1) SMCM UUV (Knifefish) ⁽¹⁾																																	
	1	2018	NAVY	2	0	2							A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1			0
	1	2019	NAVY	1	0	1							A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1			0	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			

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Exhibit P-21, Production Schedule: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7					P-1 Line Item Number / Title: 2622 / Minesweeping System Replacement				Item Number / Title [DODIC]: 3 / UNMANNED SYSTEMS [UNMAN]			
MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
		MSR For 2020	1-8-5 For 2020	MAX For 2020	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	General Dynamics MS - Mcleansville, NC	1	6	10	3	6	14	20	0	3	14	17

"A" in the Delivery Schedule indicates the Contract Award Date.

Note: Due to space limitations, quantities in the Exhibit P-21 delivery calendar are truncated and rounded based on the maximum quantity in the calendar as follows. If the maximum quantity is less than or equal to than 9,999, all quantities are shown as each. If the maximum quantity is between 10,000 and 999,999 all quantities are shown in thousands. If the maximum quantity is between 1,000,000 and 999,999,999 all quantities are shown in millions (rounded to the nearest thousand).If the maximum quantity is equal or greater than 1,000,000,000 all quantities are shown in billions (rounded to the nearest million).

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Exhibit P-5, Cost Analysis: PB 2020 Navy											Date: March 2019							
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7						P-1 Line Item Number / Title: 2622 / Minesweeping System Replacement						Item Number / Title [DODIC]: 4 / MAGNETIC SILENCING FACILITY UPGRADES						
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Resource Summary				Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total				
Procurement Quantity (Units in Each)				-		-		-		-		-		-				
Gross/Weapon System Cost (\$ in Millions)				95.186		15.630		7.271		19.448		0.000		19.448				
Less PY Advance Procurement (\$ in Millions)				-		-		-		-		-		-				
Net Procurement (P-1) (\$ in Millions)				95.186		15.630		7.271		19.448		0.000		19.448				
Plus CY Advance Procurement (\$ in Millions)				-		-		-		-		-		-				
Total Obligation Authority (\$ in Millions)				95.186		15.630		7.271		19.448		0.000		19.448				
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																		
Initial Spares (\$ in Millions)				-		-		-		-		-		-				
Gross/Weapon System Unit Cost (\$ in Thousands)				-		-		-		-		-		-				
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Hardware - LV085 - MAGNETIC SILENCING FACILITY UPGRADES Cost																		
Recurring Cost																		
1.1.1) MSF MEASUREMENT SYSTEM UPGRADE	95,186.000	1	95.186	-	-	15.630	-	-	7.271	-	-	19.448	-	-	0.000	-	-	19.448
Subtotal: Recurring Cost	-	-	95.186	-	-	15.630	-	-	7.271	-	-	19.448	-	-	0.000	-	-	19.448
Subtotal: Hardware - LV085 - MAGNETIC SILENCING FACILITY UPGRADES Cost	-	-	95.186	-	-	15.630	-	-	7.271	-	-	19.448	-	-	0.000	-	-	19.448
Gross/Weapon System Cost	-	-	95.186	-	-	15.630	-	-	7.271	-	-	19.448	-	-	0.000	-	-	19.448
Remarks: FY20 increase in funding for Magnetic Silencing Facility Program due to the scheduled Guam equipment installation, a more intensive project currently lacking existing facilities equipment, transportation costs related to the long distances the equipment must travel to reach Guam, higher than average cost for environmental mitigation needed to meet NEPA requirements, and higher than CONUS cost for in-water equipment installation.																		

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019							
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7						P-1 Line Item Number / Title: 2622 / Minesweeping System Replacement						Item Number / Title [DODIC]: 5 / MCM EO / IR SENSORS							
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:									
Resource Summary				Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total					
Procurement Quantity <i>(Units in Each)</i>				-		-		-		-		-		-					
Gross/Weapon System Cost <i>(\$ in Millions)</i>				0.000		0.000		5.000		0.000		0.000		0.000					
Less PY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-					
Net Procurement (P-1) <i>(\$ in Millions)</i>				0.000		0.000		5.000		0.000		0.000		0.000					
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-					
Total Obligation Authority <i>(\$ in Millions)</i>				0.000		0.000		5.000		0.000		0.000		0.000					
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																			
Initial Spares <i>(\$ in Millions)</i>				-		-		-		-		-		-					
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>				-		-		-		-		-		-					
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																			
Cost Elements		Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
		Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Hardware - MCM EO / IR SENSORS Cost																			
Recurring Cost																			
1.1.1) MCM EO / IR SENSORS		-	-	0.000	-	-	0.000	-	-	5.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost		-	-	0.000	-	-	0.000	-	-	5.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Hardware - MCM EO / IR SENSORS Cost		-	-	0.000	-	-	0.000	-	-	5.000	-	-	0.000	-	-	0.000	-	-	0.000
Gross/Weapon System Cost		-	-	0.000	-	-	0.000	-	-	5.000	-	-	0.000	-	-	0.000	-	-	0.000
Remarks: [Hardware] MCM EO/IR Sensors - FY19 Congressional Add (Cost Code LV090) to procure and install additional electro-optical infrared surveillance sensors (EO/IR) on forward deployed minesweepers. These advanced systems will provide situational awareness for ships continually relied upon to perform critical missions while conducting patrols.																			

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment	P-1 Line Item Number / Title: 2624 / Shallow Water MCM

ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	57.348	8.796	8.616	8.730	0.000	8.730	5.595	5.703	5.811	5.927	-	106.526
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	57.348	8.796	8.616	8.730	0.000	8.730	5.595	5.703	5.811	5.927	-	106.526
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	57.348	8.796	8.616	8.730	0.000	8.730	5.595	5.703	5.811	5.927	-	106.526

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	0.073	-	0.437	-	0.437	0.312	0.259	0.306	0.454	Continuing	Continuing
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

This program provides a combination of US Navy projects planned to counter the threat to amphibious landing forces from known and projected foreign land/sea mines, obstacles in the beach zone and surf zone approaches to amphibious assault areas. It is a system of systems (Countermines/Counter Obstacle, Intelligence/Surveillance/Reconnaissance/Targeting (ISR/T), Navigation/Virtual Marking/Integration, C4I/Data Fusion) that provides a full assault breaching capability. This program is an essential element to the Marine Corps Ship To Objective Maneuver Concept of Operations.

This procurement line supports the COBRA program of record, delivering COBRA systems to Navy helicopter wings to provide initial proficiency training to Navy aircrews. COBRA systems are also procured under BLI 1601 LCS MCM Mission Modules - these systems provide the deployable combat capability to LCS mission packages.

[P5 / SW004: COASTAL BATTLEFIELD RECONNAISSANCE AND ANALYSIS (COBRA)]: The mission of the AN/DVS-1 COBRA is to conduct unmanned aerial tactical reconnaissance in the littoral battlespace for detection and localization of minefields and obstacles in the surf zone and beach zone prior to an amphibious assault. The COBRA Airborne Payload is carried on the MQ-8B Fire Scout. This allows operators and other personnel to remain at a safe distance from the mine and obstacle belts and enemy direct and indirect fire. COBRA will be embarked in the Littoral Combat Ship (LCS) as part of the MCM Mission Package (MP).

COBRA provides the (ISR/T) part of the Assault Breaching System of systems. One system consists of two Airborne Mine Countermeasures (AMCM) Payloads and one Post Mission Analysis station. Block I introduced a daytime detection capability for surface laid minefields and obstacles in the Beach Zone. Block II adds a surfzone and night (darkness) detection capability. COBRA has a modular payload architecture, is integrated with the MQ-8B Fire Scout VTUAV, and will serve as a "detect" sensor within the LCS MCM MP as part of amphibious assault breaching mission.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment						P-1 Line Item Number / Title: 2624 / Shallow Water MCM				
ID Code (A=Service Ready, B=Not Service Ready): B			Program Elements for Code B Items: N/A			Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / Shallow Water Mine CM Ship	P-5a, P-21			- / 57.348	- / 8.796	- / 8.616	- / 8.730	- / 0.000	- / 8.730
P-40	Total Gross/Weapon System Cost				- / 57.348	- / 8.796	- / 8.616	- / 8.730	- / 0.000	- / 8.730
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										

Justification:

FY 2020 funding supports the baseline program which will procure one COBRA system to be integrated on the MQ-8B Fire Scout. These systems provide the fleet with the required training assets to certify the pilots and crew to operate and maintain these systems before being deployed on the LCS.

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Exhibit P-5, Cost Analysis: PB 2020 Navy													Date: March 2019								
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7							P-1 Line Item Number / Title: 2624 / Shallow Water MCM						Item Number / Title [DODIC]: 1 / Shallow Water Mine CM Ship								
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:											
Resource Summary				Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
Procurement Quantity <i>(Units in Each)</i>				-			-			-			-			-			-		
Gross/Weapon System Cost <i>(\$ in Millions)</i>				57.348			8.796			8.616			8.730			0.000			8.730		
Less PY Advance Procurement <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Net Procurement (P-1) <i>(\$ in Millions)</i>				57.348			8.796			8.616			8.730			0.000			8.730		
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Total Obligation Authority <i>(\$ in Millions)</i>				57.348			8.796			8.616			8.730			0.000			8.730		
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																					
Initial Spares <i>(\$ in Millions)</i>				-			0.073			-			0.437			-			0.437		
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>				-			-			-			-			-			-		
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																					
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total					
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)			
Hardware - SW003: LANDING CRAFT UTILITY (LCU) NAVIGATION UPGRADE Cost																					
Recurring Cost																					
1.1.1) LCU NAVIGATION UPGRADES	-	-	1.479	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Subtotal: Recurring Cost	-	-	1.479	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Subtotal: Hardware - SW003: LANDING CRAFT UTILITY (LCU) NAVIGATION UPGRADE Cost	-	-	1.479	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Hardware - SW004: COASTAL BATTLEFIELD RECONNAISSANCE AND ANALYSIS (COBRA) Cost																					
Recurring Cost																					
2.1.1) SW0041 COBRA BLOCK 1 ^(†)	12,163K	2	24.326	8,550K	1	8.550	8,550K	1	8.550	8,550K	1	8.550	-	-	-	8,550K	1	8.550			
2.1.2) SW00411 COBRA BLOCK 1 SPARES, TRAINING	-	-	2.164	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
2.1.3) SW00411 COBRA BLOCK 1 MOD UPGRADES	-	-	19.701	-	-	0.246	-	-	0.066	-	-	0.180	-	-	-	-	-	0.180			
Subtotal: Recurring Cost	-	-	46.191	-	-	8.796	-	-	8.616	-	-	8.730	-	-	-	-	-	8.730			
Subtotal: Hardware - SW004: COASTAL BATTLEFIELD RECONNAISSANCE AND ANALYSIS (COBRA) Cost	-	-	46.191	-	-	8.796	-	-	8.616	-	-	8.730	-	-	-	-	-	8.730			

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7						P-1 Line Item Number / Title: 2624 / Shallow Water MCM						Item Number / Title [DODIC]: 1 / Shallow Water Mine CM Ship						
ID Code (A=Service Ready, B=Not Service Ready) :									MDAP/MAIS Code:									
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
Hardware - SW005: AMPHIBIOUS ASSAULT VEHICLE NAVIGATION UPGRADE Cost																		
Recurring Cost																		
3.1.1) AMPHIBIOUS ASSAULT VEHICLE NAVIGATION UPGRADE	-	-	6.359	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	6.359	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Hardware - SW005: AMPHIBIOUS ASSAULT VEHICLE NAVIGATION UPGRADE Cost	-	-	6.359	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardware - SW061: LANDING CRAFT AIR CUSHION (LCAC) AUTOPILOT UPGRADE Cost																		
Recurring Cost																		
4.1.1) LCAC AUTOPILOT UPGRADES	-	-	2.286	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	2.286	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Hardware - SW061: LANDING CRAFT AIR CUSHION (LCAC) AUTOPILOT UPGRADE Cost	-	-	2.286	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Support - SW830: PRODUCTION ENGINEERING Cost																		
5.1) PRODUCTION ENGINEERING	-	-	1.033	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - SW830: PRODUCTION ENGINEERING Cost	-	-	1.033	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	57.348	-	-	8.796	-	-	8.616	-	-	8.730	-	-	0.000	-	-	8.730
(†) indicates the presence of a P-5a																		

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7				P-1 Line Item Number / Title: 2624 / Shallow Water MCM				Item Number / Title [DODIC]: 1 / Shallow Water Mine CM Ship				

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
2.1.1) SW0041 COBRA BLOCK 1 ^(†)		2017	ARETE ⁽¹⁾ / TUCSON, AZ	C / FFP	NSWC PC	May 2017	May 2019	1	8,500K	Y		
2.1.1) SW0041 COBRA BLOCK 1 ^(†)		2018	ARETE ⁽¹⁾ / TUCSON, AZ	C / FFP	NSWC PC	Sep 2018	Sep 2020	1	8,550K	Y		
2.1.1) SW0041 COBRA BLOCK 1 ^(†)		2019	ARETE ⁽¹⁾ / TUCSON, AZ	C / FFP	NSWC PC	Dec 2018	Dec 2020	1	8,550K	Y		
2.1.1) SW0041 COBRA BLOCK 1 ^(†)		2020	ARETE ⁽¹⁾ / TUCSON, AZ	C / FFP	NSWC PC	Oct 2019	Oct 2021	1	8,550K	Y		

^(†) indicates the presence of a P-21

Footnotes:

⁽¹⁾ MSR is 2. In FY20, a total of 2 systems are being procured - 1 in OPN LI 2624 and 1 in OPN LI 1601.

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Exhibit P-21, Production Schedule: PB 2020 Navy																			Date: March 2019																													
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7							P-1 Line Item Number / Title: 2624 / Shallow Water MCM												Item Number / Title [DODIC]: 1 / Shallow Water Mine CM Ship																													
Cost Elements (Units in Each)							Fiscal Year 2017												Fiscal Year 2018												B A L A N C E																	
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	Calendar Year 2017												Calendar Year 2018																													
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P																		
2.1.1) SW0041 COBRA BLOCK 1																																																
Prior Years Deliveries: 1																																																
	1	2017	NAVY	1	0	1													A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1										
	1	2018	NAVY	1	0	1																									A	-																1
	1	2019	NAVY	1	0	1																																								1		
	1	2020	NAVY	1	0	1																																								1		
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P																		

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019													
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7										P-1 Line Item Number / Title: 2624 / Shallow Water MCM										Item Number / Title [DODIC]: 1 / Shallow Water Mine CM Ship													
Cost Elements <i>(Units in Each)</i>							Fiscal Year 2019										Fiscal Year 2020														B A L A N C E		
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2018	BAL DUE AS OF 1 OCT	Calendar Year 2019										Calendar Year 2020																
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			
2.1.1) SW0041 COBRA BLOCK 1																																	
Prior Years Deliveries: 1																																	
	1	2017	NAVY	1	0	1	-	-	-	-	-	-	-	-	1																		0
	1	2018	NAVY	1	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1		0
	1	2019	NAVY	1	0	1			A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		1
	1	2020	NAVY	1	0	1													A	-	-	-	-	-	-	-	-	-	-	-	-		1
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			

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Exhibit P-21, Production Schedule: PB 2020 Navy																			Date: March 2019												
Appropriation / Budget Activity / Budget Sub Activity:							P-1 Line Item Number / Title:												Item Number / Title [DODIC]:												
1810N / 02 / 7							2624 / Shallow Water MCM												1 / Shallow Water Mine CM Ship												
Cost Elements <i>(Units in Each)</i>							Fiscal Year 2021												Fiscal Year 2022												BALANCE
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	Calendar Year 2021												Calendar Year 2022												
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
2.1.1) SW0041 COBRA BLOCK 1																															
Prior Years Deliveries: 1																															
	1	2017	NAVY	1	1	0																									0
	1	2018	NAVY	1	1	0																									0
	1	2019	NAVY	1	0	1	-	-	1																						0
	1	2020	NAVY	1	0	1	-	-	-	-	-	-	-	-	-	-	-	1													0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	

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Exhibit P-21, Production Schedule: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7					P-1 Line Item Number / Title: 2624 / Shallow Water MCM				Item Number / Title [DODIC]: 1 / Shallow Water Mine CM Ship			
MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
		MSR For 2020	1-8-5 For 2020	MAX For 2020	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	ARETE ⁽¹⁾ - TUCSON, AZ	2	6	12	0	0	24	24	0	0	24	24

"A" in the Delivery Schedule indicates the Contract Award Date.

Note: Due to space limitations, quantities in the Exhibit P-21 delivery calendar are truncated and rounded based on the maximum quantity in the calendar as follows. If the maximum quantity is less than or equal to than 9,999, all quantities are shown as each. If the maximum quantity is between 10,000 and 999,999 all quantities are shown in thousands. If the maximum quantity is between 1,000,000 and 999,999,999 all quantities are shown in millions (rounded to the nearest thousand). If the maximum quantity is equal or greater than 1,000,000,000 all quantities are shown in billions (rounded to the nearest million).

Footnotes:

⁽¹⁾ MSR is 2. In FY20, a total of 2 systems are being procured - 1 in OPN LI 2624 and 1 in OPN LI 1601.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment							P-1 Line Item Number / Title: 2657 / NAVSTAR GPS Receivers (Space)					
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A					Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	211.563	15.923	10.703	32.674	0.000	32.674	33.721	29.977	22.938	23.394	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	211.563	15.923	10.703	32.674	0.000	32.674	33.721	29.977	22.938	23.394	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	211.563	15.923	10.703	32.674	0.000	32.674	33.721	29.977	22.938	23.394	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	0.061	0.149	0.252	-	0.252	0.233	0.159	0.145	0.251	Continuing	Continuing
Flyaway Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-
Description:												
Navigation Signal Timing and Ranging Global Positioning System (NAVSTAR GPS) provides assured and protected navigation solutions to Warfighters through supported, affordable, and integrated systems, and is the primary source of positioning, navigation and timing information for the DoD.												
[P3A / (1R0013) Navigation Warfare (NAVWAR)]: NAVWAR ensures that U. S. military forces maintain access to the GPS in an electronically challenging battlespace, delivers the capability to deny adversaries access to and use of GPS during military operations, and serves to preserve the peaceful use of GPS. Navy GPS Enhanced User Equipment (UE) Operational Requirements Document directs that future UE will incorporate an increased anti-jam capability. NAVWAR counters the threat by increasing resistance to intentional or unintentional interference. Sea NAVWAR Strategy comprises of 2 program increments, the first increment (near term) is to install GPS anti-jam antenna system (GAS-1) on surface platforms. The second increment (long term) is to install Advanced Digital Antenna Production (ADAP) antennas on surface platforms. The ADAP antenna improves upon GAS-1 performance by providing simultaneous dual frequency nulling, and built in test ability. Procurement and installation of anti-jam GPS antennas and modernized user equipment is required to ensure the continuation of GPS signals from space in a hostile jamming environment. The Sea NAVWAR program will equip ships with anti-jam GPS antennas to ensure the continued availability of GPS to support surface combat operations and provide reliable GPS and other positioning, navigation and timing data to ship-board Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR), Combat, and Weapons Systems.												
[P3A - 2 / (1R019) Global Positioning System (GPS) - based Positioning, Navigation, & Timing Service (GPNTS)]: The GPS-based PNT Service (GPNTS) system is the primary PNT system for the Navy to ensure reliable PNT capability and interoperability insertion in GPS receivers and associated Command, Control, Computers, Communications and Intelligence (C4I) and Combat Systems in a denied environment. GPNTS provides more robust and secure GPS/PNT capabilities than is currently in the Fleet. GPNTS provides precise PNT data required for combat, weapons, command, control, communications, navigation, and other systems, as well as providing the time synchronization critical to the network environments. GPNTS backfits current PNT/GPS systems and forward fit new platforms. GPNTS is an Open Architecture (OA) development, enabling rapid software and hardware based capability improvements to be inserted without a requirement for single-source contracting. GPNTS will host the Air Force GPS Directorate-developed Military GPS User Equipment (MGUE) card, allowing access to the new more accurate and secure GPS Military-Code (M-Code) signal. The system provides the capability to migrate non-real time GPS data toward a Common Computing Environment (CCE) and provide a path for the integration of advanced navigation systems and sensors.												

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment						P-1 Line Item Number / Title: 2657 / NAVSTAR GPS Receivers (Space)				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / NAVSTAR GPS Receivers (Space)				- / 156.416	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	1 / (1R0013) Navigation Warfare (NAVWAR) (Upgrade)				- / 51.417	- / 6.213	- / 2.563	- / 6.071	- / 0.000	- / 6.071
P-3a	2 / (1R019) Global Positioning System (GPS) - based Positioning, Navigation, & Timing Service (GPNTS (Ship Alt)				- / 3.730	- / 9.710	- / 8.140	- / 26.603	- / 0.000	- / 26.603
P-40	Total Gross/Weapon System Cost				- / 211.563	- / 15.923	- / 10.703	- / 32.674	- / 0.000	- / 32.674
Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / NAVSTAR GPS Receivers (Space)				- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / (1R0013) Navigation Warfare (NAVWAR) (Upgrade)				- / 3.211	- / 3.327	- / 1.354	- / 1.381	Continuing	Continuing
P-3a	2 / (1R019) Global Positioning System (GPS) - based Positioning, Navigation, & Timing Service (GPNTS (Ship Alt)				- / 30.510	- / 26.650	- / 21.584	- / 22.013	Continuing	Continuing
P-40	Total Gross/Weapon System Cost				- / 33.721	- / 29.977	- / 22.938	- / 23.394	Continuing	Continuing
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										
Justification: Navigation Warfare (NAVWAR) - In FY 2020 Sea NAVWAR will procure and field dual Advanced Digital Antenna Production (ADAP) Fiber Optic Antenna Link (FOAL) antennas. FY 2019 to FY 2020 reflect increase in quantities from 2 to 12. Global Positioning System (GPS) - based Positioning, Navigation, & Timing Service (GPNTS) program will procure and field Low Rate Initial Production (LRIP) units, and procure Full Rate Production (FRP) units in FY 2020. FY 2019 to FY 2020 reflect increase in quantities from 2 to 29.										

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Exhibit P-5, Cost Analysis: PB 2020 Navy													Date: March 2019								
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7							P-1 Line Item Number / Title: 2657 / NAVSTAR GPS Receivers (Space)							Item Number / Title [DODIC]: 1 / NAVSTAR GPS Receivers (Space)							
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:											
Resource Summary				Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
Procurement Quantity <i>(Units in Each)</i>				-			-			-			-			-			-		
Gross/Weapon System Cost <i>(\$ in Millions)</i>				156.416			0.000			0.000			0.000			0.000			0.000		
Less PY Advance Procurement <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Net Procurement (P-1) <i>(\$ in Millions)</i>				156.416			0.000			0.000			0.000			0.000			0.000		
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Total Obligation Authority <i>(\$ in Millions)</i>				156.416			0.000			0.000			0.000			0.000			0.000		
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																					
Initial Spares <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>				-			-			-			-			-			-		
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																					
Cost Elements		Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total				
		Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)		
Flyaway - Consolidated Prior Year Requirements Cost																					
Recurring Cost																					
1.1.1) Consolidated Prior Year Requirements		124.833	1,253	156.416	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000		
Subtotal: Recurring Cost		-	-	156.416	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000		
Subtotal: Flyaway - Consolidated Prior Year Requirements Cost		-	-	156.416	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000		
Gross/Weapon System Cost		-	-	156.416	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000		
Remarks: [Flyaway] The quantities and amounts included within the Consolidated Prior Year Requirements are inclusive of PU 1R009 Navigation Sensor System Interface (NAVSSI) FMP, PU 1R011 Navigation Sensor System Interface (NAVSSI) Retrofit, PU 1R018 Defense Advance GPS Receiver (DAGR), PU 1R777 DSA and Installation for NAVSSI FMP and NAVSSI Retrofit and PU 1R555 NAVSSI FMP Production Support and NAVSSI Retrofit Production Support.																					

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7					P-1 Line Item Number / Title: 2657 / NAVSTAR GPS Receivers (Space)					Modification Number / Title: 1 / (1R0013) Navigation Warfare (NAVWAR)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	51.417	6.213	2.563	6.071	0.000	6.071	3.211	3.327	1.354	1.381	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	51.417	6.213	2.563	6.071	0.000	6.071	3.211	3.327	1.354	1.381	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	51.417	6.213	2.563	6.071	0.000	6.071	3.211	3.327	1.354	1.381	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Procurement and installation of anti-jam (AJ) Global Positioning System (GPS) user equipment and prevention equipment is required to ensure the continued utility of GPS signals from space in a hostile jamming environment. The Sea Navigation Warfare (NAVWAR) program will equip ships with anti-jam GPS antennas to ensure the continued availability of GPS to support surface combat operations and provide reliable GPS and other navigation sensor data to ship-board Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR), Combat, and Weapons Systems. Sea NAVWAR will procure and field dual Advanced Digital Antenna Production (ADAP) Fiber Optic Antenna Link (FOAL) antennas in FY 2020.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7					P-1 Line Item Number / Title: 2657 / NAVSTAR GPS Receivers (Space)					Modification Number / Title: 1 / (1R0013) Navigation Warfare (NAVWAR)			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: Shore Stations, Ships				Modification Type: Upgrade				Related RDT&E PEs: 0604777N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	
Procurement													
<i>Modification Item 1 of 1:</i> (1R0013) Navigation Warfare (NAVWAR)													
B Kits													
Recurring													
1.1.1) NAVWAR (GAS1, ADAP) - NonOrganic ⁽¹⁾	401 / 29.025	12 / 5.184	2 / 0.876	12 / 5.327	- / -	12 / 5.327	3 / 1.356	6 / 2.760	1 / 0.465	2 / 0.946	Continuing	Continuing	
<i>Subtotal: Recurring</i>	- / 29.025	- / 5.184	- / 0.876	- / 5.327	- / -	- / 5.327	- / 1.356	- / 2.760	- / 0.465	- / 0.946	Continuing	Continuing	
<i>Subtotal: (1R0013) Navigation Warfare (NAVWAR)</i>	401 / 29.025	12 / 5.184	2 / 0.876	12 / 5.327	- / -	12 / 5.327	3 / 1.356	6 / 2.760	1 / 0.465	2 / 0.946	Continuing	Continuing	
<i>Subtotal: Procurement, All Modification Items</i>	- / 29.025	- / 5.184	- / 0.876	- / 5.327	- / -	- / 5.327	- / 1.356	- / 2.760	- / 0.465	- / 0.946	Continuing	Continuing	
Support (All Modification Items)													
2.1) Production Support	- / 2.945	- / 0.259	- / 0.039	- / 0.254	- / 0.000	- / 0.254	- / 0.068	- / 0.096	- / 0.021	- / 0.055	Continuing	Continuing	
2.2) DSA - FMP	- / 6.640	- / 0.380	- / 0.088	- / 0.230	- / 0.000	- / 0.230	- / 0.167	- / 0.066	- / 0.058	- / 0.245	Continuing	Continuing	
<i>Subtotal: Support</i>	- / 9.585	- / 0.639	- / 0.127	- / 0.484	- / -	- / 0.484	- / 0.235	- / 0.162	- / 0.079	- / 0.300	Continuing	Continuing	
Installation													
<i>Modification Item 1 of 1:</i> (1R0013) Navigation Warfare (NAVWAR)	- / 12.807	- / 0.390	- / 1.560	- / 0.260	- / 0.000	- / 0.260	- / 1.620	- / 0.405	- / 0.810	- / 0.135	Continuing	Continuing	
<i>Subtotal: Installation</i>	- / 12.807	- / 0.390	- / 1.560	- / 0.260	- / -	- / 0.260	- / 1.620	- / 0.405	- / 0.810	- / 0.135	Continuing	Continuing	
Total													
Total Cost (Procurement + Support + Installation)	51.417	6.213	2.563	6.071	0.000	6.071	3.211	3.327	1.354	1.381	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7										P-1 Line Item Number / Title: 2657 / NAVSTAR GPS Receivers (Space)										Modification Number / Title: 1 / (1R0013) Navigation Warfare (NAVWAR)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: (1R0013) Navigation Warfare (NAVWAR)																															
Manufacturer Information																															
Manufacturer Name: RAYTHEON SYSTEMS LTD															Manufacturer Location: HARLOW-UNITED KINGDOM																
Administrative Leadtime (in Months): 4															Production Leadtime (in Months): 9																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates		Mar 2018				Jun 2019				Feb 2020																					
Delivery Dates		Dec 2019				Mar 2020				Nov 2020																					
Installation Information																															
Method of Implementation: Tiger Team:: Installation Name: NAVWAR Inc 1 - GAS1, Inc 2 - ADAP																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		398 / 12.807		3 / 0.390		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		401 / 13.197					
FY 2018		- / -		- / -		12 / 1.560		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		12 / 1.560					
FY 2019		- / -		- / -		- / -		2 / 0.260		0 / 0.000		2 / 0.260		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 0.260					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		12 / 1.620		- / -		- / -		- / -		- / -		0 / 0.000		12 / 1.620					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		3 / 0.405		- / -		- / -		- / -		0 / 0.000		3 / 0.405					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		6 / 0.810		- / -		- / -		0 / 0.000		6 / 0.810					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 0.135		0 / 0.000		1 / 0.135					
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		2 / 0.270		2 / 0.270					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		Continuing		Continuing					
Total		398 / 12.807		3 / 0.390		12 / 1.560		2 / 0.260		0 / 0.000		2 / 0.260		12 / 1.620		3 / 0.405		6 / 0.810		1 / 0.135		Continuing		Continuing		Continuing					
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	395	3	2	1	-	-	3	-	9	-	-	1	1	-	3	4	5	-	1	1	1	-	3	1	2	-	1	-	-	Cont.	Cont.
Out	386	9	3	2	1	-	-	3	-	9	-	-	1	1	-	3	4	5	-	1	1	1	-	3	1	2	-	1	-	Cont.	Cont.
Footnotes:																															
(1) 1)Advanced Digital Antenna Production (ADAP) consists of two hardware configurations; single ADAP and Dual ADAP Fiber Optic Antenna Link (FOAL), which drives the variation in average unit price each fiscal year. 2)A single ADAP shipset consists of one ADAP antenna and is installed on smaller surface platforms. A single ADAP may range in cost from \$135K to \$145K depending on the Economic Order Quantity Pricing and International exchange rates relevant at time of contract award. 3)A Dual ADAP FOAL shipset consists of two ADAP antennas, two FOAL drawers, & two component kits and are installed																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	P-1 Line Item Number / Title: 2657 / NAVSTAR GPS Receivers (Space)	Modification Number / Title: 1 / (1R0013) Navigation Warfare (NAVWAR)
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
on large surface platforms. An ADAP FOAL may range in cost from \$407K to \$473K depending on Economic Order Quantity Pricing and International exchange rates relevant at time of contract award. The components kits are procured on two separate Indefinite Delivery Indefinite Quantity (IDIQ) contracts competed annually and integrated with the ADAP by SPAWAR Systems Center, Pacific. 4)Design Service Allocation (DSA) estimates are based off a percentage of the total installation cost with 75% of costs being required the year prior for Installation design work and 25% required the year of the actual installation. The DSA cost variance is due to ship configuration being installed. The DSA increase from FY 2019 to FY 2020 is a result of an increase in the number of installations planned in FY 2020(Qty 2)installations to FY 2021(Qty 12)installations. 5)1-2 months of integration upon receipt of ADAP Antennas.		

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Exhibit P-3a, Individual Modification: PB 2020 Navy						Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7				P-1 Line Item Number / Title: 2657 / NAVSTAR GPS Receivers (Space)				Modification Number / Title: 2 / (1R019) Global Positioning System (GPS) - based Positioning, Navigation, & Timing Service (GPNTS)			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	3.730	9.710	8.140	26.603	0.000	26.603	30.510	26.650	21.584	22.013	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	3.730	9.710	8.140	26.603	0.000	26.603	30.510	26.650	21.584	22.013	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	3.730	9.710	8.140	26.603	0.000	26.603	30.510	26.650	21.584	22.013	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Global Positioning System (GPS)-based Position, Navigation, & Timing (PNT) Service (GPNTS) system is the primary PNT system for the Navy to ensure reliable PNT capability and interoperability insertion in GPS receivers and associated Command, Control, Computers, Communications and Intelligence (C4I) and Combat Systems in a denied environment. GPNTS provides more robust and secure GPS/PNT capabilities than is currently in the Fleet. GPNTS provides precise PNT data required for many combat, weapons, command, control, communications, navigation, and other systems, as well as providing the time synchronization critical to the network environments. GPNTS backfits current PNT/GPS systems as well as serve as a forward fit for new platforms. GPNTS is an Open Architecture (OA) development, enabling rapid software and hardware based capability improvements to be inserted without a requirement for single-source contracting. GPNTS will host the GPS Directorate-developed Military GPS User Equipment (MGUE) card, allowing access to the new more accurate and secure GPS Military-Code (M-Code) signal. The system provides the capability to migrate non-real time GPS data toward a Common Computing Environment (CCE) and provide a path for the integration of advanced navigation systems and sensors.

GPNTS program will procure and field Low Rate Initial Production (LRIP) units, and procure Full Rate Production (FRP) units in FY 2020.

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7				P-1 Line Item Number / Title: 2657 / NAVSTAR GPS Receivers (Space)				Modification Number / Title: 2 / (1R019) Global Positioning System (GPS) - based Positioning, Navigation, & Timing Service (GPNTS)					
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: Shore Stations, Ships			Modification Type: Ship Alt					Related RDT&E PEs: 0604777N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: (1R019) Global Positioning System (GPS) - based Positioning, Navigation, & Timing Service (GPNTS)													
B Kits													
Recurring													
1.1.1) GPNTS (Configuration B) - Ship - NonOrganic ⁽²⁾	4 / 3.196	3 / 1.977	2 / 1.332	29 / 19.517	- / -	29 / 19.517	11 / 7.491	21 / 14.448	7 / 4.865	19 / 13.357	Continuing	Continuing	
1.1.2) GPNTS (Shore) - NonOrganic ⁽³⁾	- / -	9 / 5.931	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	9 / 5.931	
Subtotal: Recurring	- / 3.196	- / 7.908	- / 1.332	- / 19.517	- / -	- / 19.517	- / 7.491	- / 14.448	- / 4.865	- / 13.357	Continuing	Continuing	
Subtotal: (1R019) Global Positioning System (GPS) - based Positioning, Navigation, & Timing Service (GPNTS)	4 / 3.196	12 / 7.908	2 / 1.332	29 / 19.517	- / -	29 / 19.517	11 / 7.491	21 / 14.448	7 / 4.865	19 / 13.357	Continuing	Continuing	
Subtotal: Procurement, All Modification Items	- / 3.196	- / 7.908	- / 1.332	- / 19.517	- / -	- / 19.517	- / 7.491	- / 14.448	- / 4.865	- / 13.357	Continuing	Continuing	
Support (All Modification Items)													
2.1) Production Support	- / 0.164	- / 0.474	- / 0.080	- / 0.976	- / -	- / 0.976	- / 0.375	- / 0.722	- / 0.243	- / 0.668	Continuing	Continuing	
2.2) DSA - FMP ⁽⁴⁾	- / 0.370	- / 1.328	- / 0.503	- / 4.750	- / -	- / 4.750	- / 2.866	- / 3.945	- / 2.028	- / 3.158	Continuing	Continuing	
Subtotal: Support	- / 0.534	- / 1.802	- / 0.583	- / 5.726	- / -	- / 5.726	- / 3.241	- / 4.667	- / 2.271	- / 3.826	Continuing	Continuing	
Installation													
Modification Item 1 of 1: (1R019) Global Positioning System (GPS) - based Positioning, Navigation, & Timing Service (GPNTS)	- / 0.000	- / 0.000	- / 6.225	- / 1.360	- / 0.000	- / 1.360	- / 19.778	- / 7.535	- / 14.448	- / 4.830	Continuing	Continuing	
Subtotal: Installation	- / 0.000	- / -	- / 6.225	- / 1.360	- / -	- / 1.360	- / 19.778	- / 7.535	- / 14.448	- / 4.830	Continuing	Continuing	
Total													
Total Cost (Procurement + Support + Installation)	3.730	9.710	8.140	26.603	0.000	26.603	30.510	26.650	21.584	22.013	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	P-1 Line Item Number / Title: 2657 / NAVSTAR GPS Receivers (Space)	Modification Number / Title: 2 / (1R019) Global Positioning System (GPS) - based Positioning, Navigation, & Timing Service (GPNTS)

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:

Modification Item 1 of 1: (1R019) Global Positioning System (GPS) - based Positioning, Navigation, & Timing Service (GPNTS)

Manufacturer Information

Manufacturer Name: Sechan Electronics, Inc.				Manufacturer Location: Lititz, PA			
Administrative Leadtime (in Months): 4				Production Leadtime (in Months): 9			
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates	Jul 2018						
Delivery Dates	Apr 2019						
Manufacturer Name: TBD ⁽⁵⁾				Manufacturer Location: TBD			
Administrative Leadtime (in Months): 4				Production Leadtime (in Months): 9			
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates	Sep 2018	Feb 2019	Feb 2020				
Delivery Dates	Jun 2019	Nov 2019	Nov 2020				

Installation Information

Method of Implementation: Tiger Team:: Installation Name: GPNTS - Config B

Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	4 / 2.400	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	4 / 2.400
FY 2018	- / -	- / -	3 / 1.800	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 1.800
FY 2019	- / -	- / -	- / -	2 / 1.360	0 / 0.000	2 / 1.360	- / -	- / -	- / -	- / -	0 / 0.000	2 / 1.360
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	29 / 19.778	- / -	- / -	- / -	0 / 0.000	29 / 19.778
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	11 / 7.535	- / -	- / -	0 / 0.000	11 / 7.535
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	21 / 14.448	- / -	0 / 0.000	21 / 14.448
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	7 / 4.830	0 / 0.000	7 / 4.830
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	19 / 13.110	19 / 13.110
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	- / -	- / -	7 / 4.200	2 / 1.360	0 / 0.000	2 / 1.360	29 / 19.778	11 / 7.535	21 / 14.448	7 / 4.830	Continuing	Continuing

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019									
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7					P-1 Line Item Number / Title: 2657 / NAVSTAR GPS Receivers (Space)					Modification Number / Title: 2 / (1R019) Global Positioning System (GPS) - based Positioning, Navigation, & Timing Service (GPNTS)									

ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:									

Modification Item 1 of 1: (1R019) Global Positioning System (GPS) - based Positioning, Navigation, & Timing Service (GPNTS)																													

Installation Information																													

Method of Implementation: Tiger Team:: Installation Name: GPNTS - Config B																													

Installation Schedule																													

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
In	-	-	-	-	-	-	3	-	4	-	1	-	1	3	8	12	6	1	2	4	4	2	11	1	7	2	3	2	-	18	95
Out	-	-	-	-	-	-	-	3	-	4	-	1	-	1	3	8	12	6	1	2	4	4	2	11	1	7	2	3	2	18	95

Method of Implementation: Tiger Team:: Installation Name: GPNTS - Shore																													

Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	9 / 2.025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	9 / 2.025
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	9 / 2.025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	9 / 2.025

Installation Schedule																													

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	6	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	
Out	-	-	-	-	-	-	-	-	6	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	

Footnotes:																													
⁽²⁾ FY 2020 procurement increase is based on achieving Full Rate Production (FRP) decision approval.																													

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	P-1 Line Item Number / Title: 2657 / NAVSTAR GPS Receivers (Space)	Modification Number / Title: 2 / (1R019) Global Positioning System (GPS) - based Positioning, Navigation, & Timing Service (GPNTS)
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
⁽³⁾ Shore units are fielded as operational installations. Shore sites do not have the same constraints and restrictions as afloat sites and therefore have reduced installation costs. ⁽⁴⁾ Design Service Allocation (DSA) estimates are based off of a percentage of the total installation, with 75% of costs being required the year prior for all pre-installation design work and 25% required the year of the actual installation. The DSA cost variance is due to ship platform type being installed and configuration setup of the installation. The DSA increase from FY 2019 to FY 2020 is a result of an increase to the number of installations planned FY 2020 (Qty 2) installations to FY 2021 (Qty 29) installations. ⁽⁵⁾ 4) Unit cost for each procured Ship set is a Dual Redundant System consisting of two Racks and two GPS Receivers. Procured units are competed between two (2) prime vendors on an annual basis and per delivery order to promote continuous competitive pricing through the life of the contract.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment							P-1 Line Item Number / Title: 2666 / American Forces Radio and TV Service (AFRTS)					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	37.927	2.730	2.626	2.617	0.000	2.617	2.638	2.586	2.641	2.697	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	37.927	2.730	2.626	2.617	0.000	2.617	2.638	2.586	2.641	2.697	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	37.927	2.730	2.626	2.617	0.000	2.617	2.638	2.586	2.641	2.697	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: K0001: American Forces Radio and Television Service (AFRTS) Program - AFRTS shipboard systems provide command information to deployed Sailors and Marines and allow for the distribution of AFRTS programming in order to provide situational awareness for forward deployed commanders with real-time news and information. The systems also provide programming to Sailors and Marines at sea worldwide as a Navy Quality of Life (QOL) initiative, staying in compliance with the Chief of Naval Operations (CNO) Shipboard Habitability Program. These systems contribute significantly to the habitability of Navy ships by providing and distributing news, command information, training, and entertainment programming using the latest technology available. These systems improve morale, combat effectiveness and retention rates of deployed personnel. All AFRTS systems use Commercial-Off-the-Shelf (COTS) equipment. Fleet Support Detachments (FSDs) are the installing agents for these systems. Each component replacement is made based on ship availability, condition of system, and is coordinated through the Type Commanders (TYCOMs). [P5 / Site CCTV - Digital/300]: K0001 - Shipboard Information, Training and Entertainment (SITE) Closed Circuit Television (CCTV) - Digital/300 - Digital/300 is the next generation of the SITE 2000/300. This system is a digitally-based replacement for the 2000/300 playback. Each system is comprised of Commercial Off-The-Shelf (COTS) components that take three to twelve months to procure. Each component upgrade/replacement is made based on ship availability, by the Fleet Support Detachments (FSDs) as the installing/replacement agents and condition of the system. [P5 / Site CCTV - Digital/400]: Shipboard Information, Training and Entertainment (SITE) Closed Circuit Television (CCTV) - Digital/400 - is the next generation of the SITE 2000/400. This system is a digitally-based replacement for the 2000/400 playback. Requires manpower of one dedicated technician and operator. Each system is comprised of Commercial Off-The-Shelf (COTS) components that take three to twelve months to procure. Each component upgrade/replacement is made based on ship availability, by the Fleet Support Detachments (FSDs) as the installing/replacement agents and condition of the system. [P5 / Site CCTV - Digital/501]: Digital/500 - is the next generation of the Shipboard Information, Training and Entertainment (SITE) 2000/500. This system is a digitally-based replacement for the 2000/500 playback. Requires manpower of two dedicated technicians and three operators. Each system is comprised of Commercial Off-The-Shelf (COTS) components that take three to twelve months to procure. Each component upgrade/replacement is made based on ship availability, by the Fleet Support Detachments (FSDs) as the installing/repair agents and condition of the system. [P5 / Circuit 27TV Upgrade]: Circuit 27TV Upgrade - Upgrade to 14TV head end only that will allow the onboard Shipboard Information, Training and Entertainment (SITE) system to distribute Television Direct To Sailors (TV-DTS), AFRTS, and pier-side cable commercial programming. Each component upgrade/replacement is made based on ship availability by the Fleet Support Detachments (FSDs) as the installing/replacement agents and the condition of the system.												

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment		P-1 Line Item Number / Title: 2666 / American Forces Radio and TV Service (AFRTS)
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
[P5 / Shipboard Broadcast System (SBS)]: K0001-Shipboard Broadcast System (SBS): The SBS system replaces the Shipboard Information, Training and Entertainment (SITE) 300/400/501 systems with an Internet Protocol (IP) video system. It collects and converts video content from several sources: Navy Motion Picture Services (NMPS) programming via encrypted DVDs (nDVD), Video Server, and shipboard surveillance cameras; and distributes the signals via Circuit 30 in Standard or High Definition. Each system is comprised of Commercial Off-The-Shelf (COTS) equipment that takes six to twelve months to procure. Each system upgrade is done based on ship availability by the Fleet Support Detachments (FSDs) as the installing/replacing agent and condition of the system. [P5 / K0830 - Production Engineering]: Supports review and approval of any production contract technical documentation or the separate development of this documentation to include: signal flow diagrams, Preventive Maintenance Services (PMS), production drawings, provisioning technical documentation (PTD), Integrated Logistic Support (ILS), Program Support Data (PSD), Allowance Parts List (APL's), and engineering in support of final design reviews. [P5 / K0INS - Non-FMP Installation]: Supports the installation of Shipboard Information, Training and Entertainment (SITE), TV-DTS (TV-Direct to Sailor) system onboard Navy ships. Installations are performed by Defense Media Activity Agency (DMAA) Fleet Support Detachments (FSDs) and are based on Type Commander (TYCOM) nominations.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment						P-1 Line Item Number / Title: 2666 / American Forces Radio and TV Service (AFRTS)				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / American Forces Radio and TV Service (AFRTS)	P-5a			- / 37.927	- / 2.730	- / 2.626	- / 2.617	- / 0.000	- / 2.617
P-40	Total Gross/Weapon System Cost				- / 37.927	- / 2.730	- / 2.626	- / 2.617	- / 0.000	- / 2.617
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										

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Exhibit P-5, Cost Analysis: PB 2020 Navy													Date: March 2019								
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7							P-1 Line Item Number / Title: 2666 / American Forces Radio and TV Service (AFRTS)						Item Number / Title [DODIC]: 1 / American Forces Radio and TV Service (AFRTS)								
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:											
Resource Summary				Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
Procurement Quantity <i>(Units in Each)</i>				-			-			-			-			-			-		
Gross/Weapon System Cost <i>(\$ in Millions)</i>				37.927			2.730			2.626			2.617			0.000			2.617		
Less PY Advance Procurement <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Net Procurement (P-1) <i>(\$ in Millions)</i>				37.927			2.730			2.626			2.617			0.000			2.617		
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Total Obligation Authority <i>(\$ in Millions)</i>				37.927			2.730			2.626			2.617			0.000			2.617		
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																					
Initial Spares <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>				-			-			-			-			-			-		
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																					
Cost Elements		Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total				
		Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)		
Hardware Cost																					
Recurring Cost																					
1.1.1) Site CCTV - Digital/300 ^(†)		82,878.79	33	2.735	95,000.00	2	0.190	10,000.00	2	0.020	10,000.00	3	0.030	-	-	-	10,000.00	3	0.030		
1.1.2) Site CCTV - Digital/400 ^(†)		61,250.00	28	1.715	100,000.00	2	0.200	10,000.00	3	0.030	10,000.00	2	0.020	-	-	-	10,000.00	2	0.020		
1.1.3) Site CCTV - Digital/501 ^(†)		111,333.33	6	0.668	120,000.00	1	0.120	10,000.00	2	0.020	10,000.00	2	0.020	-	-	-	10,000.00	2	0.020		
1.1.4) Circuit 27TV Upgrade ^(†)		20,833.33	30	0.625	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1.1.5) Shipboard Broadcast System (SBS) ^(†)		-	-	-	-	-	-	302,666.00	1	0.303	302,666.00	1	0.303	-	-	-	302,666.00	1	0.303		
Subtotal: Recurring Cost		-	-	5.743	-	-	0.510	-	-	0.373	-	-	0.373	-	-	-	-	-	0.373		
Subtotal: Hardware Cost		-	-	5.743	-	-	0.510	-	-	0.373	-	-	0.373	-	-	-	-	-	0.373		
Support Cost																					
2.1) K0830 - Production Engineering		-	-	28.488	-	-	2.024	-	-	2.057	-	-	2.050	-	-	-	-	-	2.050		
2.2) K01NS - Non-FMP Installation		-	-	3.696	-	-	0.196	-	-	0.196	-	-	0.194	-	-	-	-	-	0.194		
Subtotal: Support Cost		-	-	32.184	-	-	2.220	-	-	2.253	-	-	2.244	-	-	-	-	-	2.244		
Gross/Weapon System Cost		-	-	37.927	-	-	2.730	-	-	2.626	-	-	2.617	-	-	0.000	-	-	2.617		

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Exhibit P-5, Cost Analysis: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7	P-1 Line Item Number / Title: 2666 / American Forces Radio and TV Service (AFRTS)	Item Number / Title [DODIC]: 1 / American Forces Radio and TV Service (AFRTS)
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
Remarks: [Hardware] Costs for FY18 CE 1.1.2, 1.1.3, 1.1.4 reflect full unit costs for SITE CCTV. Those units complete the fielding of the SITE 300(U), 400(U) and 501(U) digital systems throughout all applicable ship classes in FY18. FY19 and out procurements are in support of hardware components to maintain the SITE system due known obsolescence issues. CE 1.1.5 shows the follow-on system to SITE CCTV, called SBS (Shipboard Broadcasting System). It uses IP technology, the new industry standard, and will be introduced starting in FY18 as aging SITE systems reach end of life. [Hardware/Recurring] (t) indicates the presence of a P-5a		

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7			P-1 Line Item Number / Title: 2666 / American Forces Radio and TV Service (AFRTS)					Item Number / Title [DODIC]: 1 / American Forces Radio and TV Service (AFRTS)				
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) Site CCTV - Digital/300		2012	Various / Various	MIPR	T-ASA	Jun 2012	Dec 2012	2	5,000.00	Y		
1.1.1) Site CCTV - Digital/300		2013	Various / Various	MIPR	T-ASA	May 2013	Nov 2013	7	85,000.00	Y		
1.1.1) Site CCTV - Digital/300		2014	Various / Various	MIPR	T-ASA	Jun 2014	Dec 2014	11	85,000.00	Y		
1.1.1) Site CCTV - Digital/300		2015	Various / Various	MIPR	T-ASA	Mar 2015	Sep 2015	4	90,000.00	Y		
1.1.1) Site CCTV - Digital/300		2016	Various / Various	MIPR	T-ASA	Jan 2016	Jul 2016	4	90,000.00	Y		
1.1.1) Site CCTV - Digital/300		2017	Various / Various	MIPR	T-ASA	Dec 2016	Jun 2017	5	95,000.00	Y		
1.1.1) Site CCTV - Digital/300		2018	Various / Various	MIPR	T-ASA	Feb 2018	Aug 2018	2	95,000.00	Y		
1.1.1) Site CCTV - Digital/300		2019	Various / Various	MIPR	T-ASA	Dec 2018	Jun 2019	2	10,000.00	Y		
1.1.1) Site CCTV - Digital/300		2020	Various / Various	MIPR	T-ASA	Dec 2019	Jun 2020	3	10,000.00	Y		
1.1.2) Site CCTV - Digital/400		2012	Various / Various	MIPR	T-ASA	Jun 2012	Dec 2012	10	5,000.00	Y		
1.1.2) Site CCTV - Digital/400		2013	Various / Various	MIPR	T-ASA	May 2013	Nov 2013	3	90,000.00	Y		
1.1.2) Site CCTV - Digital/400		2014	Various / Various	MIPR	T-ASA	Jun 2014	Dec 2014	6	90,000.00	Y		
1.1.2) Site CCTV - Digital/400		2015	Various / Various	MIPR	T-ASA	Mar 2015	Sep 2015	3	90,000.00	Y		
1.1.2) Site CCTV - Digital/400		2016	Various / Various	MIPR	T-ASA	Jan 2016	Jul 2016	3	95,000.00	Y		
1.1.2) Site CCTV - Digital/400		2017	Various / Various	MIPR	T-ASA	Dec 2016	Jun 2017	3	100,000.00	Y		
1.1.2) Site CCTV - Digital/400		2018	Various / Various	MIPR	T-ASA	Feb 2018	Aug 2018	2	100,000.00	Y		
1.1.2) Site CCTV - Digital/400		2019	Various / Various	MIPR	T-ASA	Dec 2018	Jun 2019	3	10,000.00	Y		
1.1.2) Site CCTV - Digital/400		2020	Various / Various	MIPR	T-ASA	Dec 2019	Jun 2020	2	10,000.00	Y		
1.1.3) Site CCTV - Digital/501		2012	Various / Various	MIPR	T-ASA	Jun 2012	Dec 2012	1	110,000.00	Y		
1.1.3) Site CCTV - Digital/501		2013	Various / Various	MIPR	T-ASA	May 2013	Nov 2013	1	103,000.00	Y		
1.1.3) Site CCTV - Digital/501		2014	Various / Various	MIPR	T-ASA	Jun 2014	Dec 2014	1	110,000.00	Y		
1.1.3) Site CCTV - Digital/501		2015	Various / Various	MIPR	T-ASA	Mar 2015	Sep 2015	1	115,000.00	Y		
1.1.3) Site CCTV - Digital/501		2016	Various / Various	MIPR	T-ASA	Jan 2016	Jul 2016	1	115,000.00	Y		
1.1.3) Site CCTV - Digital/501		2017	Various / Various	MIPR	T-ASA	Dec 2016	Jun 2017	1	115,000.00	Y		
1.1.3) Site CCTV - Digital/501		2018	Various / Various	MIPR	T-ASA	Feb 2018	Aug 2018	1	120,000.00	Y		
1.1.3) Site CCTV - Digital/501		2019	Various / Various	MIPR	T-ASA	Dec 2018	Jun 2019	2	10,000.00	Y		
1.1.3) Site CCTV - Digital/501		2020	Various / Various	MIPR	T-ASA	Dec 2019	Jun 2020	2	10,000.00	Y		
1.1.4) Circuit 27TV Upgrade		2013	Various / Various	MIPR	T-ASA	May 2013	Nov 2013	7	20,000.00	Y		
1.1.4) Circuit 27TV Upgrade		2014	Various / Various	MIPR	T-ASA	Jun 2014	Dec 2014	8	20,000.00	Y		
1.1.4) Circuit 27TV Upgrade		2015	Various / Various	MIPR	T-ASA	Mar 2015	Sep 2015	5	21,000.00	Y		
1.1.4) Circuit 27TV Upgrade		2016	Various / Various	MIPR	T-ASA	Jan 2016	Jul 2016	4	22,000.00	Y		
1.1.4) Circuit 27TV Upgrade		2017	Various / Various	MIPR	T-ASA	Dec 2016	Jun 2017	6	22,000.00	Y		

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7				P-1 Line Item Number / Title: 2666 / American Forces Radio and TV Service (AFRTS)				Item Number / Title [DODIC]: 1 / American Forces Radio and TV Service (AFRTS)				
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.5) Shipboard Broadcast System (SBS)		2019	VARIOIUS / VARIOUS	MIPR	T-ASA	Dec 2018	Jun 2019	1	302,666.00	Y		
1.1.5) Shipboard Broadcast System (SBS)		2020	VARIOIUS / VARIOUS	MIPR	T-ASA	Dec 2019	Jun 2020	1	302,666.00	Y		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment	P-1 Line Item Number / Title: 2676 / Strategic Platform Support Equip

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	46.655	6.889	9.467	7.973	0.000	7.973	8.018	4.980	6.241	6.366	-	96.589
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	46.655	6.889	9.467	7.973	0.000	7.973	8.018	4.980	6.241	6.366	-	96.589
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	46.655	6.889	9.467	7.973	0.000	7.973	8.018	4.980	6.241	6.366	-	96.589
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	1.641	0.861	0.907	-	0.907	1.033	0.976	0.955	1.003	Continuing	Continuing
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Funding in this P-1 line provides Non-Propulsion Electronics equipment that will be installed aboard TRIDENT Class submarines as part of the Obsolete Equipment Replacement (OER) Program.

OER Program is the replacement of existing hardware/software that, though functional, has become operationally obsolete, is no longer in production or supportable with spare parts, or has a high failure rate making them no longer cost effective to maintain. OER hardware/software changes are expected to provide significant cost savings via reduced maintenance costs and use Commercial-Off-The-Shelf (COTS) technology wherever possible as long as all technical requirements are met.

This funding line includes performance of the required fully integrated system level testing and certification of changes to the TRIDENT Combat systems prior to installation of the changes on the ship. Integrated testing and certification provides assurance that when the changes are installed in the ship, the TRIDENT Combat system will operate as designed, allowing the ships to maintain their operational schedules and mission capabilities.

[P40A / CCS Revision Engineering Cert/Test]: This program develops upgrades to legacy systems to maintain required interface connectivity to other Program Acquisition Resource Manager (PARM)-managed subsystems in response to PARMs modernizations, or to address obsolescence, or where mandated requirement changes (example Cyber security) drive changes to hardware or software.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment						P-1 Line Item Number / Title: 2676 / Strategic Platform Support Equip				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Strategic Platform Support Equip	P-5a			- / 46.655	- / 6.889	- / 9.467	- / 7.973	- / -	- / 7.973
P-40	Total Gross/Weapon System Cost				- / 46.655	- / 6.889	- / 9.467	- / 7.973	- / 0.000	- / 7.973
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										

Justification:
 The decrease of approximately \$1.6M from FY19 to FY20 is the result of synchronizing the SSBN Legacy Modernization program to coincide with accelerated procurements and installations of the SSBN SWFTS TI-16 upgrades in FY19.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7								P-1 Line Item Number / Title: 2676 / Strategic Platform Support Equip							Aggregated Items Title: Strategic Platform Support Equip				

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
1) P1221 Strategic Platform Support Equip NPES																				
1.1) Common Platform Engineering ^(†)	A		1,619K	6	9.714	939,000.00	1	0.939	957,000.00	1	0.957	987,000.00	1	0.987	-	-	-	987,000.00	1	0.987
1.2) CCS Revision Engineering Cert/Test ⁽¹⁾	A		-	-	16.448	-	-	2.402	-	-	2.311	-	-	2.425	-	-	-	-	-	2.425
1.3) SSBN Legacy CCS Modernization ⁽²⁾	A		-	-	20.493	-	-	3.548	-	-	6.199	-	-	4.561	-	-	-	-	-	4.561
Subtotal: 1) P1221 Strategic Platform Support Equip NPES			-	-	46.655	-	-	6.889	-	-	9.467	-	-	7.973	-	-	-	-	-	7.973
Total			-	-	46.655	-	-	6.889	-	-	9.467	-	-	7.973	-	-	-	-	-	7.973

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

(†) indicates the presence of a P-5a

Footnotes:

⁽¹⁾ CCS Revision Engineering Cert/Test: This funding is required for software upgrades to the SSBN Ship Control System to meet data stream (heading/speed/depth) redundancy requirements driven by the Non-Propulsion Electrical Systems (NPES) network architecture changes being fielded by SSBN modernization (Submarine Warfare Federated Tactical System (SWFTS) Technical Insertion (TI)-16/18 sonar/fire control modernization).

⁽²⁾ SSBN Legacy CCS Modernization: This program is critical to maintaining OHIO Class SSBN operational to the end of service life and delivery of COLUMBIA Class SSBN replacements. The program resolves Data Processing Subsystem (DPS) obsolescence issues and conjunctively supports the upgrade of the SSBN legacy CCS to the Submarine Warfare Federated Tactical Systems (SWFTS) architecture common with the SSN/SSGN classes. Collectively, the DPS and SWFTS upgrades modify Fire Control, SONAR, Voyage Management System (VMS), RADAR, Tactical Navigation, and Periscopes, and collaterally impact Ship Control, Monitoring Subsystem, and interfaces to ship sensors such as speed, depth, and Extremely High Frequency Satellite Communication navigation data. The DPS upgrade includes replacing all UYK-43 computers, DPS workstation, TRIDENT Signal Data Converters (TSDC), and the UGC-143 with a modified Electronic Control Display Unit (ECDU). The ECDU is common equipment on VA Class and planned for the COLUMBIA Class. The ECDU requires hardware and software development to interface to the Strategic Weapon System (SWS) Navigation and maintain critical Ship to SWS interface requirements. The ECDU and all the associated CCS architecture modifications are required to be installed conjunctively with SWFTS. Continued operation of the SSBN strategic mission will require the implementation of the ECDU upgrade along with the SWFTS upgrade.

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7				P-1 Line Item Number / Title: 2676 / Strategic Platform Support Equip					Aggregated Items: Strategic Platform Support Equip				
Item Number / Title [DODIC]	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date	
1) P1221 Strategic Platform Support Equip NPES													
1.1) Common Platform Engineering		2018	NUWC NPT / NEWPORT, RI	WR	NAVSEA	Apr 2018	Aug 2018	1	939,000.00	Y			
1.1) Common Platform Engineering		2019	NUWC NPT / NEWPORT, RI	WR	NAVSEA	Apr 2019	Aug 2019	1	957,000.00	N			
1.1) Common Platform Engineering		2020	NUWC NPT / NEWPORT, RI	WR	NAVSEA	Apr 2020	Aug 2020	1	987,000.00	N			

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment							P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment					
ID Code (A=Service Ready, B=Not Service Ready): B				Program Elements for Code B Items: N/A				Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	69.695	77.218	70.849	72.406	0.000	72.406	74.767	78.172	80.183	81.783	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	69.695	77.218	70.849	72.406	0.000	72.406	74.767	78.172	80.183	81.783	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	69.695	77.218	70.849	72.406	0.000	72.406	74.767	78.172	80.183	81.783	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	5.026	3.223	2.017	-	2.017	3.110	2.580	1.845	1.727	Continuing	Continuing
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: MATCALs Marine Air Traffic Control and Landing Systems (MATCALs) provides for continuous, all-weather, radar/non-radar approach, departure, enroute, and tower air traffic control services to aircraft. Marine ATC provides initial, transition and sustained air traffic support for the Joint and Marine Air Ground Task Force air operations in any environment. MATCALs satisfies the operational requirements set forth by Specific Operational Requirements 34-22 of 12 Jul 1973; Remote Landing Site Tower (RLST) Operational Requirements Document (ORD) 341-88-93 of 25 Jul 1997; and Air Traffic Navigation Integration and Coordination System ORD 05-002 of 03 Dec 1992. MATCALs, with other Marine Air Command and Control Systems (MACCS) and federal agencies, provides the ability to project air combat power without regard to weather. Air Traffic Control (ATC) automation reduces air traffic controllers' traffic handling and management time, allowing more time for mission response and task accomplishment. It supports a required increase in aircraft sortie rates and contributes to extended time on target. The system provides for integration of ATC into the total MACCS. To provide this capability, MATCALs consists of 6 primary subsystems: (1) Air Traffic Navigation Integration and Coordination system (ATNAVICS) AN/TPX-31(V); (2) Tactical Terminal Communication System (TTCS) AN/TSQ-263; (3) Expeditionary Control Tower AN/TSQ-120C; (4) RLST AN/TSQ-216; (5) Tactical Air Navigation (TACAN) AN/TRN-44; (6) the Man-Portable TACAN AN/TRN-47(V)1, and various ancillary equipment. The ATNAVICS Air Surveillance Radar (ASR) Range Extension is funded to meet requirements identified in the ATC Initial Capabilities Document ICD (ICD), MROC DM 75-7007, MACC Operational Advisory Group. The gaps identified require sustainment of legacy sensor capability until such time as ATNAVICS PrePlanned Product Improvement initiatives enhance system capability to support main air base traffic density and airspace. Additionally, the positive control enabled by increased ASR range reduces separation enabling increased sortie rates. This program works with the Marine ATC Working Group identifying the requirements to implement the P3I and evolutionary product improvements as required for G/ATOR system, ATNAVICS, Expeditionary ATC Towers, and Navigational Aids that support Marine Air Traffic Control Detachments. G/ATOR is multi-role, ground-based, expeditionary radar that replaces five legacy radar systems for the Marine Air Ground Task Force. It satisfies the Marine Air Command and Control System and the Ground Counter Fire/ Counter Battery capabilities. NASMOD The Joint DoD/Federal Aviation Administration (FAA) National Airspace System (NAS) Modernization (MOD) program upgrades the DoD ATC systems at approach control facilities in concert with the FAA's upgrade of the National ATC System. These funds will procure ATC systems for the Navy/Marine ATC facilities. The Air Force is the DoD lead activity for the Joint Acquisition Program. The Joint Program Office is located at Hanscom AFB, MA. The NAS Mod program received a full rate production decision on 7 June 2005 and is in the production and deployment phase following Milestone C. FLEET ATC SYSTEMS												

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment		P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
NAVAIR provides shore based ATC terminal facilities with equipment that is required in joint efforts to efficiently and safely monitor and direct military and commercial air traffic in national and international air space. Many of these systems are required to interface through automated means with the FAA. Additionally, NAVAIR has material support responsibility for Special Instrumentation Systems, and Ancillary Equipment used at Navy and Marine Corps Aviation Shore activities in the continental United States and overseas. Engineering Change Proposal (ECP)/Operational Capability Improvement Request (OCIR) modernization (MR069) - The ECP/OCIR program provides for the procurement and/or modification of critically needed communications, radar, displays, data processors, and other electronic systems/equipment at Navy/Marine Corps ATC facilities worldwide. ECP/OCIR procurements replace and modernize costly-to-maintain systems and equipment in order to increase ATC efficiency and safety, and reduce total ownership costs. UHF/VHF Antenna Upgrade (MR404) - This program procures and installs antenna, antenna towers, and antenna cables Communications Systems Upgrade Program (MR408) - This program procures and installs advanced commercial state-of-the-art ATC voice switching equipment. UHF/VHF Transceiver Replacement Program (MR440) - This program modernizes aging Navy and Marine Corps UHF/VHF Transceivers that are the central core of all ATC emergency and Fleet Area Control & Surveillance Facility (FACSFAC) communications. Emergency Communication System (ECS) Upgrade Program (MR445) - This program modernizes obsolete and unsupportable ECS equipment. Voice Switches, Recorders, Reproducers, Uninterruptable Power Supplies, and Built-In Test Equipment will be replaced with modern, supportable components. Air Field Lighting Control System (AFLCS) (MR510) - This program modernizes obsolete and unsupportable AFLCS equipment which will be replaced with modern, supportable components. Funding for this effort was realigned to the Terminal Automation System (TAS) CB070 beginning in FY18. The TAS provides the functionality and meets the requirements of the airfield lighting control as prescribed in the NASMOD ORD III Airfield Automation Annex A dated 16MAR05. Operational Communication System (OCS)/Emergency Communication System (ECS) Air Traffic Control (ATC) Recorder replacement program (MR520), through participation in the FAA ATC recorder replacement program will replace aging and obsolete ATC OCS and ECS ATC recorders with state of the art ATC recording/reproducing technology. Fiber Optic Communications Intersite System (FOCIS) Upgrade Program (MR530) - FOCIS is required for Precision Approach Radar (PAR) operations and for ATC voice communications at Naval and Marine Corps ATC facilities. This program modernizes obsolete and unsupportable FOCIS equipment with modern supportable components. LANDING SYSTEMS Landing Systems budget provides funding to modernize and ensure the reliability of Precision Approach Radars (PAR), Tactical Air Navigation (TACAN) systems, Instrument Landing Systems (ILS), and other air navigation aids used by the Navy and Marine Corps. The PAR Commercial-off-the-shelf (AN/FPN-68A) Upgrade replaces obsolete PAR systems (AN/FPN-63), continuing fleet shore-based Precision Approach capability. PAR (AN/FPN-63) safety-related ECPs are required to sustain the existing systems until replacement with the AN/FPN-68A. Installation costs will be site specific due to state and EPA regulations that will be adhered to for each install. Those ECPs include, but are not limited to, the Maintenance Walkway, the Modulator Board Upgrade, the Antenna Upgrade, the Configuration Upgrade, the Turntable Upgrade, the Fiber Optic Inter-site System (FOIS), and the Angle Voltage Generator (AVG) Upgrade TACAN Ship/Shore Upgrade ECPs update old technology and extend the service life of the TACAN. The TACAN sustainment consists of the Antenna Upgrade ECP for the OE-273 antenna which will make the antenna OE-4691(V)1 and the Beacon/RSCU Upgrade ECP of the AN/URN-25 which will make the upgraded Beacon an AN/URN-32.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment		P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
Instrument Landing Systems AN/GRN-33(V) will provide the Navy and Marine Corps with a self-contained Precision Landing capability at selected Air Stations, to meet fleet requirements for safe aircraft recovery of aircraft equipped with ILS capability.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment					P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment					
ID Code (A=Service Ready, B=Not Service Ready): B				Program Elements for Code B Items: N/A				Other Related Program Elements: N/A		
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / MATCALs				- / 2.332	- / 3.731	- / 3.023	- / 5.569	- / 0.000	- / 5.569
P-5	2 / Fleet Air Traffic Control Systems				- / 8.292	- / 6.783	- / 7.117	- / 10.156	- / 0.000	- / 10.156
P-5	3 / Landing Systems				- / 0.351	- / 4.114	- / 4.297	- / 4.380	- / 0.000	- / 4.380
P-3a	1 / AN/TPN-31A ATNAVICS ASR Range Extension (MJ455) (Modification)				- / 4.069	- / 2.426	- / 2.397	- / 0.000	- / 0.000	- / 0.000
P-3a	2 / MJ465 AMTAC (Modification)				- / 10.346	- / 4.400	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	3 / CB010 - DoD Advanced Automation System (DAAS) (Added Capability)				- / 4.841	- / 4.234	- / 2.840	- / 0.822	- / 0.000	- / 0.822
P-3a	4 / CB030 Digital Airport Surveillance Radar (DASR) (Added Capability)				- / 0.400	- / 0.400	- / 0.939	- / 0.915	- / 0.000	- / 0.915
P-3a	5 / CB040 Tower Automation System (TAS) (Added Capability)				- / 0.200	- / 0.200	- / 1.682	- / 1.654	- / 0.000	- / 1.654
P-3a	6 / CB050 STARS TECH Refresh Upgrade (AIT)				- / 11.360	- / 14.262	- / 11.582	- / 2.682	- / 0.000	- / 2.682
P-3a	7 / CB070 TAS Tech Refresh (Added Capability)				- / 4.055	- / 2.515	- / 4.347	- / 4.716	- / 0.000	- / 4.716
P-3a	8 / CB080 NAS Voice System (NVS) (Added Capability)				- / 6.350	- / 7.508	- / 6.589	- / 8.374	- / 0.000	- / 8.374
P-3a	9 / CB090 - DAAS Tech Refresh Upgrade II (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	10 / CB100 TAS Tech Refresh Upgrade II (TBD)				- / 0.000	- / 0.000	- / 0.600	- / 7.065	- / 0.000	- / 7.065
P-3a	11 / CB110 DASR Tech Refresh Upgrade III (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	12 / X1036 AN/FPN-63 PAR TECH REFRESH (Reliability)				- / 9.847	- / 10.416	- / 9.422	- / 10.042	- / 0.000	- / 10.042
P-3a	13 / X1037 Instrument Landing System Upgrade (TBD)				- / 1.901	- / 7.152	- / 6.438	- / 6.492	- / 0.000	- / 6.492
P-3a	14 / X1043 TACAN Antenna Upgrade (Modernization)				- / 5.351	- / 9.077	- / 9.576	- / 9.539	- / 0.000	- / 9.539
P-40	Total Gross/Weapon System Cost				- / 69.695	- / 77.218	- / 70.849	- / 72.406	- / 0.000	- / 72.406
Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / MATCALs				- / -	- / -	- / -	- / -	- / -	- / -
P-5	2 / Fleet Air Traffic Control Systems				- / -	- / -	- / -	- / -	- / -	- / -
P-5	3 / Landing Systems				- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / AN/TPN-31A ATNAVICS ASR Range Extension (MJ455) (Modification)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 8.892
P-3a	2 / MJ465 AMTAC (Modification)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 14.823	- / 29.569
P-3a	3 / CB010 - DoD Advanced Automation System (DAAS) (Added Capability)				- / 0.227	- / 0.234	- / 0.329	- / 0.428	Continuing	Continuing
P-3a	4 / CB030 Digital Airport Surveillance Radar (DASR) (Added Capability)				- / 0.497	- / 0.502	- / 0.351	- / 0.459	- / 0.000	- / 4.463
P-3a	5 / CB040 Tower Automation System (TAS) (Added Capability)				- / 1.399	- / 0.319	- / 0.183	- / 0.238	Continuing	Continuing

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment						P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment				
ID Code (A=Service Ready, B=Not Service Ready): B			Program Elements for Code B Items: N/A			Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	6 / CB050 STARS TECH Refresh Upgrade (AIT)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 39.886
P-3a	7 / CB070 TAS Tech Refresh (Added Capability)				- / 1.667	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 17.300
P-3a	8 / CB080 NAS Voice System (NVS) (Added Capability)				- / 10.266	- / 10.558	- / 7.503	- / 6.788	Continuing	Continuing
P-3a	9 / CB090 - DAAS Tech Refresh Upgrade II (TBD)				- / 0.652	- / 3.514	- / 7.273	- / 6.879	Continuing	Continuing
P-3a	10 / CB100 TAS Tech Refresh Upgrade II (TBD)				- / 13.891	- / 11.968	- / 10.624	- / 10.715	Continuing	Continuing
P-3a	11 / CB110 DASR Tech Refresh Upgrade III (TBD)				- / 0.355	- / 3.023	- / 2.772	- / 4.136	Continuing	Continuing
P-3a	12 / X1036 AN/FPN-63 PAR TECH REFRESH (Reliability)				- / 10.154	- / 9.618	- / 9.710	- / 9.870	Continuing	Continuing
P-3a	13 / X1037 Instrument Landing System Upgrade (TBD)				- / 6.421	- / 8.981	- / 9.508	- / 9.762	Continuing	Continuing
P-3a	14 / X1043 TACAN Antenna Upgrade (Modernization)				- / 9.887	- / 9.355	- / 9.507	- / 9.677	Continuing	Continuing
P-40	Total Gross/Weapon System Cost				- / 74.767	- / 78.172	- / 80.183	- / 81.783	Continuing	Continuing
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										
Justification: MATCALs FY2020 provides funding to procure Maintainability/Reliability Improvements. NASMOD The Federal Aviation Administration (FAA) began the Next Generation Air Transportation System initiative in FY2008. A major component of this capability is Automatic Dependent Surveillance Broadcast, which will provide aircraft position information to augment ground-based radar. Existing DoD Air Traffic Control (ATC) facilities interface with FAA's facilities, therefore the military must maintain interoperability and retain vital special-use airspace for combat readiness training. The DoD Advanced Automation System (DAAS) must be upgraded to meet this requirement. FY2020 provides funding to procure 7 TAS Tech Refresh Upgrades, 574 NAS Voice System Radios, 9 TAS Tech Refresh II Upgrades, and various Engineering Change Proposals (ECPs) and associated Support. FLEET ATC SYSTEMS The basis for the FY2020 budget request is to continue modernizing aging Navy and Marine Corps ATC facilities and equipment in order to safely monitor and direct military and commercial air traffic in national and international air space. This equipment must continue to interface through automated means with the FAA. FY2020 provides funding to procure 2 UHF/VHF Antenna Upgrades, 2 ECS Upgrades, 9 OCS/ECS ATC Recorder upgrades, 5 FOCIS Upgrades, various ECPs/OCIRs and associated support LANDING SYSTEMS FY2020 provides funding to procure: 3 PAR Tech Refresh COTs, 2 ILS Upgrades, 24 TACAN Antenna Upgrades, and 14 TACAN Beacon Upgrades.										

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Exhibit P-5, Cost Analysis: PB 2020 Navy													Date: March 2019								
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9							P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment						Item Number / Title [DODIC]: 1 / MATCALs								
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:											
Resource Summary				Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
Procurement Quantity <i>(Units in Each)</i>				-			-			-			-			-			-		
Gross/Weapon System Cost <i>(\$ in Millions)</i>				2.332			3.731			3.023			5.569			0.000			5.569		
Less PY Advance Procurement <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Net Procurement (P-1) <i>(\$ in Millions)</i>				2.332			3.731			3.023			5.569			0.000			5.569		
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Total Obligation Authority <i>(\$ in Millions)</i>				2.332			3.731			3.023			5.569			0.000			5.569		
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																					
Initial Spares <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>				-			-			-			-			-			-		
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																					
Cost Elements		Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total				
		Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)		
Hardware - ECP / ECO Cost																					
Recurring Cost																					
1.1.1) MAINT / RELIABILITY IMPROVEMENT (MJ427) ⁽¹⁾		-	-	2.234	-	-	3.207	-	-	2.421	-	-	4.576	-	-	0.000	-	-	4.576		
Subtotal: Recurring Cost		-	-	2.234	-	-	3.207	-	-	2.421	-	-	4.576	-	-	0.000	-	-	4.576		
Subtotal: Hardware - ECP / ECO Cost		-	-	2.234	-	-	3.207	-	-	2.421	-	-	4.576	-	-	0.000	-	-	4.576		
Support - MISCELLANEOUS SUPPORT Cost																					
5.2) Install (MJ900) ⁽²⁾		-	-	0.098	-	-	0.524	-	-	0.602	-	-	0.993	-	-	0.000	-	-	0.993		
Subtotal: Support - MISCELLANEOUS SUPPORT Cost		-	-	0.098	-	-	0.524	-	-	0.602	-	-	0.993	-	-	0.000	-	-	0.993		
Gross/Weapon System Cost		-	-	2.332	-	-	3.731	-	-	3.023	-	-	5.569	-	-	0.000	-	-	5.569		
Footnotes:																					
⁽¹⁾ The FY20 MRI ECP increase is due to reduced reliability requiring higher ECP costs to maintain reliability in the older systems.																					
⁽²⁾ The FY20 install cost increase is due to overseas travel and increased complexity in the install work.																					

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Exhibit P-5, Cost Analysis: PB 2020 Navy													Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9							P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment						Item Number / Title [DODIC]: 2 / Fleet Air Traffic Control Systems					
ID Code (A=Service Ready, B=Not Service Ready) :									MDAP/MAIS Code:									
Resource Summary				Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total				
Procurement Quantity <i>(Units in Each)</i>				-		-		-		-		-		-				
Gross/Weapon System Cost <i>(\$ in Millions)</i>				8.292		6.783		7.117		10.156		0.000		10.156				
Less PY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Net Procurement (P-1) <i>(\$ in Millions)</i>				8.292		6.783		7.117		10.156		0.000		10.156				
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Total Obligation Authority <i>(\$ in Millions)</i>				8.292		6.783		7.117		10.156		0.000		10.156				
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																		
Initial Spares <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>				-		-		-		-		-		-				
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
Hardware - Fleet ATC - Hardware Cost																		
Recurring Cost																		
1.1.1) MR069 ECP/OCIR ⁽³⁾	75,000.00	1	0.075	465,000.00	1	0.465	224,333.33	3	0.673	653,000.00	2	1.306	-	-	0.000	653,000.00	2	1.306
1.1.2) MR404 UHF/VHF Antenna Upgrade ⁽⁴⁾	-	-	0.000	-	-	0.000	750,000.00	2	1.500	825,000.00	2	1.650	-	-	0.000	825,000.00	2	1.650
1.1.3) MR408 COMM System Upgrade	500,000.00	2	1.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.4) MR440 UHF/VHF Transceiver Replacement ⁽⁵⁾	43,700.00	60	2.622	45,000.00	21	0.945	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.5) MR445 Emergency Communication System (ECS) Upgrade ⁽⁶⁾	431,200.00	5	2.156	460,000.00	5	2.300	469,000.00	5	2.345	478,000.00	2	0.956	-	-	0.000	478,000.00	2	0.956
1.1.7) MR520 OCS/ECS ATC Recorder Upgrade ⁽⁷⁾	-	-	0.000	-	-	0.000	-	-	0.000	82,888.89	9	0.746	-	-	0.000	82,888.89	9	0.746
1.1.8) MR530 FOCIS Upgrade ⁽⁸⁾	-	-	0.000	-	-	0.000	-	-	0.000	107,000.00	5	0.535	-	-	0.000	107,000.00	5	0.535
Subtotal: Recurring Cost	-	-	5.853	-	-	3.710	-	-	4.518	-	-	5.193	-	-	0.000	-	-	5.193
Subtotal: Hardware - Fleet ATC - Hardware Cost	-	-	5.853	-	-	3.710	-	-	4.518	-	-	5.193	-	-	0.000	-	-	5.193

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Exhibit P-5, Cost Analysis: PB 2020 Navy													Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9							P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment							Item Number / Title [DODIC]: 2 / Fleet Air Traffic Control Systems					
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:									
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																			
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total			
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	
Support - Other Cost																			
2.1) Fleet ATC Integrated Logistics Support (MR800)	-	-	0.180	-	-	0.183	-	-	0.254	-	-	0.269	-	-	0.000	-	-	0.269	
2.2) Fleet ATC Production Engineering (MR830) ⁽⁹⁾	-	-	0.346	-	-	0.588	-	-	0.789	-	-	0.896	-	-	0.000	-	-	0.896	
2.3) Fleet ATC Installs	-	-	1.913	-	-	2.302	-	-	1.556	-	-	3.798	-	-	0.000	-	-	3.798	
Subtotal: Support - Other Cost	-	-	2.439	-	-	3.073	-	-	2.599	-	-	4.963	-	-	0.000	-	-	4.963	
Gross/Weapon System Cost	-	-	8.292	-	-	6.783	-	-	7.117	-	-	10.156	-	-	0.000	-	-	10.156	
Footnotes:																			
⁽³⁾ MR069: This program provides for the procurement and or modification of critically needed communications, radar, displays, data processors and other electronic systems / equipment at Navy / Marine Corps Air Traffic Control facilities worldwide. Due to the variety of the Air Traffic Control systems involved and the scope of these validated requirements, costs can vary significantly between fiscal years. The unit cost for an individual OCIR can range from \$1,500 to \$500,000 so the unit cost is and average of all OCIRs procured in that year and as such will fluctuate from year to year.																			
⁽⁴⁾ MR404: UHF/VHF Antenna Upgrade - UHF/VHF antennas enable ground to air communications between air traffic controllers and aircraft pilots. New antenna and antenna cables are required to replace existing aged and deteriorated antennas and cables. For dependable ground to air communications, replacement of the antennas and cables is imperative. Inventory objective is 76.																			
⁽⁵⁾ MR440: Inventory objective is 330.																			
⁽⁶⁾ MR445: Inventory objective is 45.																			
⁽⁷⁾ MR520: The Operational Communication System (OCS) and Emergency Communication System (ECS) Air Traffic Control (ATC) recorder upgrade through participation in the Federal Aviation Administration (FAA) ATC recorder replacement program will replace aging and obsolete ATC OCS and ECS ATC recorders with state of the art ATC recording/reproducing technology. FY2020 represents a new FAA recorder. The size of the recorders will vary significantly. The ECS recorder will have 10 channels and the OCS recorders will vary between 32 and 260 channels. Procurements will not begin until FY2020 due to the FAA-delayed qualifying hardware NAS in-service decision until FY2020.																			
⁽⁸⁾ MR530: Fiber Optic Communications Intersite System (FOCIS) Upgrade Program- This program modernizes obsolete and unsupportable FOCIS equipment with modern supportable components. Inventory objective is 44.																			
⁽⁹⁾ The FY20 increase is due to the support required for the OCS/ECS ATC Recorder and FOCIS Upgrades procurements starting in FY20.																			

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Exhibit P-5, Cost Analysis: PB 2020 Navy													Date: March 2019								
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9							P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment						Item Number / Title [DODIC]: 3 / Landing Systems								
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:											
Resource Summary				Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
Procurement Quantity <i>(Units in Each)</i>				-			-			-			-			-			-		
Gross/Weapon System Cost <i>(\$ in Millions)</i>				0.351			4.114			4.297			4.380			0.000			4.380		
Less PY Advance Procurement <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Net Procurement (P-1) <i>(\$ in Millions)</i>				0.351			4.114			4.297			4.380			0.000			4.380		
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Total Obligation Authority <i>(\$ in Millions)</i>				0.351			4.114			4.297			4.380			0.000			4.380		
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																					
Initial Spares <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>				-			-			-			-			-			-		
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																					
Cost Elements		Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total				
		Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)		
Hardware - Landing Systems - TACAN Beacon Cost																					
Recurring Cost																					
1.1.1) X1042 - TACAN BEACON UPGRADE (10)		-	-	0.000	217,000.00	14	3.038	220,857.00	14	3.092	224,857.00	14	3.148	-	-	0.000	224,857.00	14	3.148		
Subtotal: Recurring Cost		-	-	0.000	-	-	3.038	-	-	3.092	-	-	3.148	-	-	0.000	-	-	3.148		
Subtotal: Hardware - Landing Systems - TACAN Beacon Cost		-	-	0.000	-	-	3.038	-	-	3.092	-	-	3.148	-	-	0.000	-	-	3.148		
Support - Other Cost																					
2.1) X1800 - Landing Systems Integrated Logistics Support		-	-	0.000	-	-	0.033	-	-	0.033	-	-	0.035	-	-	0.000	-	-	0.035		
2.2) X1830 - Landing Systems Production Engineering		-	-	0.000	-	-	0.419	-	-	0.418	-	-	0.417	-	-	0.000	-	-	0.417		
2.4) X1900 - Landing System Installs		-	-	0.351	-	-	0.624	-	-	0.754	-	-	0.780	-	-	0.000	-	-	0.780		
Subtotal: Support - Other Cost		-	-	0.351	-	-	1.076	-	-	1.205	-	-	1.232	-	-	0.000	-	-	1.232		
Gross/Weapon System Cost		-	-	0.351	-	-	4.114	-	-	4.297	-	-	4.380	-	-	0.000	-	-	4.380		
Footnotes:																					
(10) X1042: Inventory objective is 206.																					

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9					P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment					Modification Number / Title: 1 / AN/TPN-31A ATNAVICS ASR Range Extension (MJ455)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	4.069	2.426	2.397	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	8.892
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	4.069	2.426	2.397	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	8.892
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	4.069	2.426	2.397	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	8.892
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: The Air Traffic Navigation Integration and Coordination System (ATNAVICS) Air Surveillance Radar (ASR) Range Extension is funded to meet requirements identified in the Air Traffic Control (ATC) Initial Capabilities Document, Marine Requirements Oversight Committee Decision Memorandum 75-7007, Marine Aviation Command and Control Operational Advisory Group and Headquarters Marine Corps APX-25 Requirement Clarification letter dated 05 Jan 2010. The gaps identified require sustainment of legacy sensor capability until such time as ATNAVICS PrePlanned Product Improvement initiatives enhance system capability to support main air base traffic density and airspace. Additionally, the positive control enabled by increased ASR range reduces separation enabling increased sortie rates. The End Item Kits for the ATNAVICS ASR Range Extension that are being procured consist of: ASR transmitter, environmental control unit/power generator, Radio Frequency transmission line, ASR receiver/exciter and signal data processors and required software code modifications to system Lowest Repairable Units. Procurements, installations and associated support costs for this effort prior to FY2017 were funded under BLI 2815.												

UNCLASSIFIED

LI 2820 - Ashore ATC Equipment
Navy

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9										P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment										Modification Number / Title: 1 / AN/TPN-31A ATNAVICS ASR Range Extension (MJ455)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: AN/TPN-31A ATNAVICS ASR Range Extension (MJ455)																															
Manufacturer Information																															
Manufacturer Name: Raytheon															Manufacturer Location: Marlborough, MA																
Administrative Leadtime (in Months): 3															Production Leadtime (in Months): 6																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates		Dec 2017				Dec 2018																									
Delivery Dates		Jun 2018				Jun 2019																									
Installation Information																															
Method of Implementation: AIT:: Installation Name: EQUIPMENT																															
Installation Cost		Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total								
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)								
Prior Years		2 / 0.992		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 0.992							
FY 2018		- / -		1 / 0.500		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		1 / 0.500							
FY 2019		- / -		- / -		1 / 0.500		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		1 / 0.500							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		2 / 0.992		1 / 0.500		1 / 0.500		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		4 / 1.992							
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	2	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Out	2	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Footnotes:																															
⁽¹¹⁾ The ASR Range Extension is in response to the HQMC APX-25 Requirement Clarification letter dated 05 Jan 2010. Inventory objective is 15. 11 procurements and 11 installs are funded under BLI 2815.																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment	Modification Number / Title: 2 / MJ465 AMTAC

ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	10.346	4.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	14.823	29.569
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	10.346	4.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	14.823	29.569
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	10.346	4.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	14.823	29.569
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The AN/TRN-47(V)2 Airfield Mobile TACAN (AMTAC) is a one for one replacement for the aging/obsolete AN/TRN-44A TACAN. The AN/TRN-47(V)2 AMTAC is a High Mobility Multipurpose Wheeled Vehicle (HMMWV) transportable, rapid set-up/tear-down, dual channel navigation aid, which provides TACAN-equipped aircraft with range, bearing, and non-precision approach capability.

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9				P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment				Modification Number / Title: 2 / MJ465 AMTAC					
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: MATCALs			Modification Type: Modification					Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: MJ465 AMTAC													
B Kits													
Recurring													
2.1.1) Equipment - NonOrganic													
Subtotal: Recurring													
Subtotal: MJ465 AMTAC													
Subtotal: Procurement, All Modification Items													
Support (All Modification Items)													
3.1) Integrated Logistics Support													
3.2) Production Engineering													
Subtotal: Support													
Installation													
Modification Item 1 of 1: MJ465 AMTAC													
Subtotal: Installation													
Total													
Total Cost (Procurement + Support + Installation)													

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9										P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment										Modification Number / Title: 2 / MJ465 AMTAC											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: MJ465 AMTAC																															
Manufacturer Information																															
Manufacturer Name: TBD															Manufacturer Location: TBD																
Administrative Leadtime <i>(in Months)</i> : 2															Production Leadtime <i>(in Months)</i> : 8																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates		Nov 2017																													
Delivery Dates		Jul 2018																													
Installation Information																															
Method of Implementation: Installation Team:: Installation Name: Equipment																															
Installation Cost		Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total								
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)								
Prior Years		6 / 0.937		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		6 / 0.937							
FY 2018		- / -		2 / 0.319		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 0.319							
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		4 / 0.647		4 / 0.647							
Total		6 / 0.937		2 / 0.319		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		4 / 0.647		12 / 1.903							
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	6	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	12
Out	6	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	12

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9					P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment					Modification Number / Title: 3 / CB010 - DoD Advanced Automation System (DAAS)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	4.841	4.234	2.840	0.822	0.000	0.822	0.227	0.234	0.329	0.428	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	4.841	4.234	2.840	0.822	0.000	0.822	0.227	0.234	0.329	0.428	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	4.841	4.234	2.840	0.822	0.000	0.822	0.227	0.234	0.329	0.428	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: The DoD Advanced Automation System (DAAS) is being developed as part of a joint DoD/Federal Aviation Administration (FAA) program to modernize and standardize Air Traffic Control (ATC) equipment in the National Airspace System. The systems are installed in Navy ATC facilities to replace aging, obsolete equipment and comply with joint DoD/FAA modernization program agreements. DAAS provides for processors and displays for tower and approach controls. Inventory objective of 47. Procurements, installations and associated support costs for this effort prior to FY2017 were funded under BLI 2840.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9				P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment						Modification Number / Title: 3 / CB010 - DoD Advanced Automation System (DAAS)			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: NAS				Modification Type: Added Capability				Related RDT&E PEs: 0604504N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: CB010 - DoD Advanced Automation System (DAAS)													
B Kits													
Recurring													
2.1.1) End Item - NonOrganic ⁽¹²⁾		3 / 1.816	1 / 0.935	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 2.751	
2.1.2) ECP/OCIR - Organic ⁽¹³⁾		- / 0.500	- / 0.602	- / 1.350	- / 0.822	- / -	- / 0.822	- / 0.227	- / 0.234	- / 0.329	- / 0.428	Continuing	
Subtotal: Recurring		- / 2.316	- / 1.537	- / 1.350	- / 0.822	- / -	- / 0.822	- / 0.227	- / 0.234	- / 0.329	- / 0.428	Continuing	
Subtotal: CB010 - DoD Advanced Automation System (DAAS)		3 / 2.316	1 / 1.537	- / 1.350	- / 0.822	- / -	- / 0.822	- / 0.227	- / 0.234	- / 0.329	- / 0.428	Continuing	
Subtotal: Procurement, All Modification Items		- / 2.316	- / 1.537	- / 1.350	- / 0.822	- / -	- / 0.822	- / 0.227	- / 0.234	- / 0.329	- / 0.428	Continuing	
Support (All Modification Items)													
3.1) Integrated Logistics Support		- / 0.102	- / 0.097	- / 0.099	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.298	
3.2) Production Engineering		- / 0.611	- / 0.523	- / 0.533	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.667	
Subtotal: Support		- / 0.713	- / 0.620	- / 0.632	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 1.965	
Installation													
Modification Item 1 of 1: CB010 - DoD Advanced Automation System (DAAS)		- / 1.812	- / 2.077	- / 0.858	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 4.747	
Subtotal: Installation		- / 1.812	- / 2.077	- / 0.858	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 4.747	
Total													
Total Cost (Procurement + Support + Installation)		4.841	4.234	2.840	0.822	0.000	0.822	0.227	0.234	0.329	0.428	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9										P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment										Modification Number / Title: 3 / CB010 - DoD Advanced Automation System (DAAS)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: CB010 - DoD Advanced Automation System (DAAS)																															
Manufacturer Information																															
Manufacturer Name: Raytheon															Manufacturer Location: Marlborough, MA																
Administrative Leadtime (in Months): 6															Production Leadtime (in Months): 12																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates		Mar 2018																													
Delivery Dates		Mar 2019																													
Installation Information																															
Method of Implementation: ALT:: Installation Name: End Item																															
Installation Cost		Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total								
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)								
Prior Years		1 / 1.812		2 / 1.477		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		3 / 3.289							
FY 2018		- / -		0 / 0.600		1 / 0.858		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		1 / 1.458							
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		1 / 1.812		2 / 2.077		1 / 0.858		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		4 / 4.747							
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	1	-	1	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Out	1	-	-	1	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Footnotes: ⁽¹²⁾ DAAS - Advanced Planning (AP) costs for Installation occur 1 year prior to actual install and show as quantity zero. These upgrades are required to maintain radar connectivity with the FAA in order to preserve Fleet capability to sequence and separate aircraft in assigned airspace within the National Airspace System.																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment	Modification Number / Title: 3 / CB010 - DoD Advanced Automation System (DAAS)
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
(13) ECP costs are based on site unique software configurations through the rest of the FYDP. Cost increase in FY19 and FY20 (compared to other years) is caused by requirement to upgrade the DAAS operating system which no longer has vendor support and upgrade the DAAS from legacy point to point analog interface capability to flexible Internet Protocol (IP) addressable interfaces. Upgrades are driven by the FAA's Surveillance Interface Modernization (SIM) program. These upgrades are required to maintain radar connectivity with the FAA in order to preserve Fleet capability to sequence and separate aircraft in assigned airspace within the National Airspace System.		

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9					P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment					Modification Number / Title: 4 / CB030 Digital Airport Surveillance Radar (DASR)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.400	0.400	0.939	0.915	0.000	0.915	0.497	0.502	0.351	0.459	0.000	4.463
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.400	0.400	0.939	0.915	0.000	0.915	0.497	0.502	0.351	0.459	0.000	4.463
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.400	0.400	0.939	0.915	0.000	0.915	0.497	0.502	0.351	0.459	0.000	4.463
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: The DASR was developed as part of a joint DoD/ FAA program to modernize and standardize ATC equipment in the National Airspace System. The DASR has enabled Navy ATC facilities to replace aging, obsolete approach control radars and comply with joint DoD/FAA modernization program agreements. Inventory objective of 29 DASR. 29 were procured and installed prior to FY2017 were funded under BLI 2840. The FAA DASR technical refreshment has not progressed as planned and has been reorganized into multiple Engineering Change Proposals (ECPs) to mitigate obsolescence effective FY2017. An ECP line has been added to the budget starting in FY2017 to address these upgrades.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9					P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment					Modification Number / Title: 4 / CB030 Digital Airport Surveillance Radar (DASR)			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: NAS				Modification Type: Added Capability				Related RDT&E PEs: 0604504N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	
Procurement													
<i>Modification Item 1 of 1: CB030 Digital Airport Surveillance Radar (DASR)</i>													
<i>B Kits</i>													
<i>Recurring</i>													
1.1.2) ECP/OCIR - Organic ⁽¹⁴⁾	- / 0.400	- / 0.400	- / 0.939	- / 0.915	- / -	- / 0.915	- / 0.497	- / 0.502	- / 0.351	- / 0.459	- / -	- / 4.463	
<i>Subtotal: Recurring</i>	- / 0.400	- / 0.400	- / 0.939	- / 0.915	- / -	- / 0.915	- / 0.497	- / 0.502	- / 0.351	- / 0.459	- / 0.000	- / 4.463	
<i>Subtotal: CB030 Digital Airport Surveillance Radar (DASR)</i>	- / 0.400	- / 0.400	- / 0.939	- / 0.915	- / -	- / 0.915	- / 0.497	- / 0.502	- / 0.351	- / 0.459	- / -	- / 4.463	
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.400	- / 0.400	- / 0.939	- / 0.915	- / -	- / 0.915	- / 0.497	- / 0.502	- / 0.351	- / 0.459	- / 0.000	- / 4.463	
Installation													
<i>Subtotal: Installation</i>	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	
Total													
Total Cost (Procurement + Support + Installation)	0.400	0.400	0.939	0.915	0.000	0.915	0.497	0.502	0.351	0.459	0.000	4.463	

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Exhibit P-3a, Individual Modification: PB 2020 Navy					Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9			P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment			Modification Number / Title: 4 / CB030 Digital Airport Surveillance Radar (DASR)	
ID Code (A=Service Ready, B=Not Service Ready) :					MDAP/MAIS Code:		
Modification Item 1 of 1: CB030 Digital Airport Surveillance Radar (DASR)							
Manufacturer Information							
Manufacturer Name: MOOG				Manufacturer Location: Salt Lake City, UT			
Administrative Leadtime (<i>in Months</i>): 3				Production Leadtime (<i>in Months</i>): 12			
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates							
Delivery Dates							
Manufacturer Name: Raytheon				Manufacturer Location: Marlborough, MA			
Administrative Leadtime (<i>in Months</i>): 6				Production Leadtime (<i>in Months</i>): 12			
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates							
Delivery Dates							
Footnotes: ⁽¹⁴⁾ The Digital Airport Surveillance Radar (DASR) ECP/OCIR upgrades are required to maintain radar connectivity with the FAA in order to preserve Fleet capability to sequence and separate aircraft in assigned airspace within the National Airspace System. The increase from FY18-19 is driven by the FAA's Surveillance Interface Modernization (SIM) program, which begins in FY19. The Digital Airport Surveillance Radar (DASR) will be upgraded from legacy point to point analog interface capability to flexible Internet Protocol (IP) addressable interfaces. This is scheduled to be a two year effort.							

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9					P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment					Modification Number / Title: 5 / CB040 Tower Automation System (TAS)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.200	0.200	1.682	1.654	0.000	1.654	1.399	0.319	0.183	0.238	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.200	0.200	1.682	1.654	0.000	1.654	1.399	0.319	0.183	0.238	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.200	0.200	1.682	1.654	0.000	1.654	1.399	0.319	0.183	0.238	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: The TAS was developed as part of a joint DoD/ FAA program to modernize and standardize ATC equipment in the National Airspace System. The TAS has enabled Navy ATC facilities to replace aging, obsolete equipment and comply with joint DoD/FAA modernization program agreements. This effort includes Engineering Change Proposal (ECP) efforts directly related to the TAS Tech Refresh efforts detailed in cost element CB070 of this budget. The ECP introduces new capability into a common workstation that eliminates a separate visual communications alert indicator. The nature of that consolidation creates an interdependency with CB070; which addresses severe obsolescence issues that render the current workstation configuration unsupportable. Both software and hardware for these two cost elements overlap and require concurrent efforts. Delay or interruption to either CB040 and/or CB070 causes a break in fleet capability and negatively impacts both flight safety and operator workload. All Windows based operating systems in Air Traffic Control Towers are being upgraded to Windows 10 in order to meet DoD's Information Assurance / Cyber security requirements. Procurements, installations and associated support costs for this effort prior to FY2017 were funded under BLI 2840.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9				P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment						Modification Number / Title: 5 / CB040 Tower Automation System (TAS)			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: NAS				Modification Type: Added Capability				Related RDT&E PEs: 0604504N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	
Procurement													
<i>Modification Item 1 of 1:</i> CB040 Tower Automation System (TAS)													
B Kits													
Recurring													
1.1.1) ECP/OCIR - Organic ⁽¹⁵⁾	- / 0.200	- / 0.200	- / 1.682	- / 1.654	- / -	- / 1.654	- / 1.399	- / 0.319	- / 0.183	- / 0.238	Continuing	Continuing	
<i>Subtotal: Recurring</i>	- / 0.200	- / 0.200	- / 1.682	- / 1.654	- / -	- / 1.654	- / 1.399	- / 0.319	- / 0.183	- / 0.238	Continuing	Continuing	
<i>Subtotal: CB040 Tower Automation System (TAS)</i>	- / 0.200	- / 0.200	- / 1.682	- / 1.654	- / -	- / 1.654	- / 1.399	- / 0.319	- / 0.183	- / 0.238	Continuing	Continuing	
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.200	- / 0.200	- / 1.682	- / 1.654	- / -	- / 1.654	- / 1.399	- / 0.319	- / 0.183	- / 0.238	Continuing	Continuing	
Installation													
<i>Subtotal: Installation</i>	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	
Total													
Total Cost (Procurement + Support + Installation)	0.200	0.200	1.682	1.654	0.000	1.654	1.399	0.319	0.183	0.238	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy				Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9			P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment			Modification Number / Title: 5 / CB040 Tower Automation System (TAS)	
ID Code (A=Service Ready, B=Not Service Ready) :					MDAP/MAIS Code:		
Modification Item 1 of 1: CB040 Tower Automation System (TAS)							
Manufacturer Information							
Manufacturer Name: Spawar Systems Center Atlantic				Manufacturer Location: Charleston, SC			
Administrative Leadtime (in Months): 6				Production Leadtime (in Months): 12			
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates							
Delivery Dates							

Footnotes:
(15) Support costs are included in the ECP/OCIR lines.

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9					P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment					Modification Number / Title: 6 / CB050 STARS TECH Refresh Upgrade		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	11.360	14.262	11.582	2.682	0.000	2.682	0.000	0.000	0.000	0.000	0.000	39.886
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	11.360	14.262	11.582	2.682	0.000	2.682	0.000	0.000	0.000	0.000	0.000	39.886
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	11.360	14.262	11.582	2.682	0.000	2.682	0.000	0.000	0.000	0.000	0.000	39.886
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: The Standard Terminal Automation Replacement System (STARS) is a joint (DoD) and Department of Transportation FAA program to modernize terminal air traffic control automation systems. The STARS contract was awarded by the FAA on September 16, 1996, and ends September 30, 2017. The FAA anticipates the award of a contract for system maintenance, system technical refresh, and system enhancements through fiscal year 2019. The FAA began the Next Generation Air Transportation System initiative in FY2008. A major component of this capability is Automatic Dependent Surveillance Broadcast, which will provide aircraft position information in place of ground-based radar. The DoD version of STARS DAAS must be upgraded to meet this requirement. Inventory objective is 38. Procurements, installations and associated support costs for this effort prior to FY2017 were funded under BLI 2840.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9				P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment						Modification Number / Title: 6 / CB050 STARS TECH Refresh Upgrade			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: NAS				Modification Type: AIT				Related RDT&E PEs: 0604504N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
<i>Modification Item 1 of 1:</i> CB050 STARS TECH Refresh Upgrade													
B Kits													
Recurring													
2.1.1) End Item - NonOrganic ⁽¹⁶⁾	11 / 9.385	8 / 11.081	6 / 8.119	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	25 / 28.585	
<i>Subtotal: Recurring</i>	- / 9.385	- / 11.081	- / 8.119	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 28.585	
<i>Subtotal: CB050 STARS TECH Refresh Upgrade</i>	11 / 9.385	8 / 11.081	6 / 8.119	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	25 / 28.585	
<i>Subtotal: Procurement, All Modification Items</i>	- / 9.385	- / 11.081	- / 8.119	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 28.585	
Support (All Modification Items)													
3.1) Integrated Logistics Support	- / 0.150	- / 0.150	- / 0.150	- / 0.153	- / -	- / 0.153	- / -	- / -	- / -	- / -	- / -	- / 0.603	
3.2) Production Engineering	- / 0.451	- / 0.579	- / 0.590	- / 0.549	- / -	- / 0.549	- / -	- / -	- / -	- / -	- / -	- / 2.169	
<i>Subtotal: Support</i>	- / 0.601	- / 0.729	- / 0.740	- / 0.702	- / -	- / 0.702	- / -	- / -	- / -	- / -	- / 0.000	- / 2.772	
Installation													
<i>Modification Item 1 of 1:</i> CB050 STARS TECH Refresh Upgrade	- / 1.374	- / 2.452	- / 2.723	- / 1.980	- / 0.000	- / 1.980	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 8.529	
<i>Subtotal: Installation</i>	- / 1.374	- / 2.452	- / 2.723	- / 1.980	- / -	- / 1.980	- / -	- / -	- / -	- / -	- / 0.000	- / 8.529	
Total													
Total Cost (Procurement + Support + Installation)	11.360	14.262	11.582	2.682	0.000	2.682	0.000	0.000	0.000	0.000	0.000	39.886	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9										P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment										Modification Number / Title: 6 / CB050 STARS TECH Refresh Upgrade											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: CB050 STARS TECH Refresh Upgrade																															
Manufacturer Information																															
Manufacturer Name: Raytheon															Manufacturer Location: Marlborough, MA																
Administrative Leadtime (in Months): 6															Production Leadtime (in Months): 12																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates		Mar 2018				Mar 2019																									
Delivery Dates		Mar 2019				Mar 2020																									
Installation Information																															
Method of Implementation: AIT:: Installation Name: End Item																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		4 / 1.374		7 / 2.452		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		11 / 3.826					
FY 2018		- / -		- / -		8 / 2.723		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		8 / 2.723					
FY 2019		- / -		- / -		- / -		6 / 1.980		0 / 0.000		6 / 1.980		- / -		- / -		- / -		- / -		- / -		0 / 0.000		6 / 1.980					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
Total		4 / 1.374		7 / 2.452		8 / 2.723		6 / 1.980		0 / 0.000		6 / 1.980		- / -		- / -		- / -		- / -		- / -		0 / 0.000		25 / 8.529					
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	4	-	4	3	-	-	3	3	2	-	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25
Out	4	-	-	4	3	-	-	4	4	-	-	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25
Footnotes:																															
(16) This effort was previously funded in BLI 2840. Support cost fluctuations are due to variations in Naval Air Station / Fleet Area Control and Surveillance Facility requirements, and Marine Corps Air Station mission requirements. (3) Installation costs fluctuate based on location of installation and the tailoring of systems to meet Naval Air Station / Fleet Area Control and Surveillance Facility requirements, and Marine Corps Air Station mission requirements.																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment	Modification Number / Title: 7 / CB070 TAS Tech Refresh

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	4.055	2.515	4.347	4.716	0.000	4.716	1.667	0.000	0.000	0.000	0.000	17.300
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	4.055	2.515	4.347	4.716	0.000	4.716	1.667	0.000	0.000	0.000	0.000	17.300
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	4.055	2.515	4.347	4.716	0.000	4.716	1.667	0.000	0.000	0.000	0.000	17.300
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Tower Automation Systems have been fielded since 2001 and are experiencing obsolescence and Information Assurance (IA) issues. These upgrades will address these obsolescence and IA issues as well as maintain compatibility with the FAA's Next Generation (NextGen) Air Transportation System initiatives. Additionally, these upgrades will enhance system performance to provide Common Access Card utilization, multi-source weather reporting and Tactical Air Control Navigation (TACAN) control. In order to achieve the modernization of the National Air Space (NAS) envisioned by NextGen, the FAA is developing a Terminal Flight Data Management (TFDM) platform that integrates flight data systems and decision support tools. The TFDM program is an integrated approach to maximize the efficient collection, distribution, and update of data and improve access to information necessary for the safe and efficient control of air traffic. The TAS will be upgraded to be consistent with the FAA TFDM.

This effort includes TAS Tech Refresh efforts directly related to the Engineering Change Proposal (ECP) efforts detailed in cost element CB040 of this budget. The ECP introduces new capability into a common workstation that eliminates a separate visual communications (VISCOM) alert indicator. The nature of that consolidation creates an interdependency with CB040; which addresses severe obsolescence issues that render the current workstation configuration unsupportable. Both software and hardware for these two cost elements overlap and require concurrent efforts. Delay or interruption to either CB040 and/or CB070 causes a break in fleet capability and negatively impacts both flight safety and operator workload.

Procurements, installations and associated support costs for this effort prior to FY2017 were funded under BLI 2840.

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9				P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment				Modification Number / Title: 7 / CB070 TAS Tech Refresh					
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: NAS			Modification Type: Added Capability					Related RDT&E PEs: 0604504N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: CB070 TAS Tech Refresh													
B Kits													
Recurring													
2.1.1) End Item - NonOrganic ⁽¹⁷⁾ 26 / 1.5945 / 0.78018 / 2.8627 / 1.127- / -7 / 1.127- / - - / - - / - - / - - / -56 / 6.363													
Subtotal: Recurring- / 1.594- / 0.780- / 2.862- / 1.127- / - - / 1.127- / - - / - - / - - / - - / 0.000- / 6.363													
Subtotal: CB070 TAS Tech Refresh26 / 1.5945 / 0.78018 / 2.8627 / 1.127- / - - / 1.127- / - - / - - / - - / -56 / 6.363													
Subtotal: Procurement, All Modification Items- / 1.594- / 0.780- / 2.862- / 1.127- / - - / 1.127- / - - / - - / - - / - - / 0.000- / 6.363													
Support (All Modification Items)													
3.1) Integrated Logistics Support ⁽¹⁸⁾ - / 0.149- / 0.122- / 0.124- / 0.105- / - - / 0.105- / 0.106- / - - / - - - / - - / - - / 0.606													
3.2) Production Engineering- / 0.373- / 0.413- / 0.421- / 0.249- / - - / 0.249- / 0.248- / - - / - - - / - - / - - / 1.704													
Subtotal: Support- / 0.522- / 0.535- / 0.545- / 0.354- / - - / 0.354- / 0.354- / - - / - - - / - - / - - / 2.310													
Installation													
Modification Item 1 of 1: CB070 TAS Tech Refresh- / 1.939- / 1.200- / 0.940- / 3.235- / 0.000- / 3.235- / 1.313- / 0.000- / 0.000- / 0.000- / 0.000- / 8.627													
Subtotal: Installation- / 1.939- / 1.200- / 0.940- / 3.235- / - - / 3.235- / 1.313- / - - / - - - / - - / - - / 8.627													
Total													
Total Cost (Procurement + Support + Installation)4.0552.5154.3474.7160.0004.7161.6670.0000.0000.0000.00017.300													

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9					P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment										Modification Number / Title: 7 / CB070 TAS Tech Refresh																
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: CB070 TAS Tech Refresh																															
Manufacturer Information																															
Manufacturer Name: Pen-Tech															Manufacturer Location: Charleston, SC																
Administrative Leadtime <i>(in Months)</i> : 6															Production Leadtime <i>(in Months)</i> : 12																
Dates	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024						
Contract Dates	Mar 2018				Mar 2019				Mar 2020				Mar 2021				Mar 2022				Mar 2023				Mar 2024						
Delivery Dates	Mar 2019				Mar 2020				Mar 2021				Mar 2022				Mar 2023				Mar 2024				Mar 2025						
Installation Information																															
Method of Implementation: ALT:: Installation Name: End Item																															
Installation Cost		Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total																		
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																
Prior Years		16 / 1.939	10 / 1.200	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	26 / 3.139																		
FY 2018		- / -	- / -	5 / 0.940	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	5 / 0.940																		
FY 2019		- / -	- / -	- / -	18 / 3.235	0 / 0.000	18 / 3.235	- / -	- / -	- / -	- / -	0 / 0.000	18 / 3.235																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	7 / 1.313	- / -	- / -	- / -	0 / 0.000	7 / 1.313																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2024		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		16 / 1.939	10 / 1.200	5 / 0.940	18 / 3.235	0 / 0.000	18 / 3.235	7 / 1.313	- / -	- / -	- / -	0 / 0.000	56 / 8.627																		
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	16	-	5	5	-	-	2	3	-	-	9	9	-	-	4	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	56
Out	16	-	-	5	5	-	-	2	3	-	-	9	9	-	-	4	3	-	-	-	-	-	-	-	-	-	-	-	-	-	56
Footnotes:																															
⁽¹⁷⁾ Inventory objective is 63. 23 procurements and 7 installations were funded prior to FY2017 and are funded on BLI 2840. Installation of FY2016 End Item procurements (qty 16) will be funded with FY2017 funding. Increase in inventory objective due to addition of 5 outlying fields of parent facilities not included in initial inventory objective that require the TAS Tech Refresh. Inventory objective is 63. Installation cost fluctuation are due to variations in Naval Air Station / Fleet Area Control and Surveillance Facility, and Marine Corps Air Station Mission requirements.																															
⁽¹⁸⁾ Support cost fluctuations are due to variations in Naval Air Station / Fleet Area Control and Surveillance Facility requirements, and Marine Corps Air Station mission requirements.																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment	Modification Number / Title: 8 / CB080 NAS Voice System (NVS)

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	6.350	7.508	6.589	8.374	0.000	8.374	10.266	10.558	7.503	6.788	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	6.350	7.508	6.589	8.374	0.000	8.374	10.266	10.558	7.503	6.788	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	6.350	7.508	6.589	8.374	0.000	8.374	10.266	10.558	7.503	6.788	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

FAA NAS Voice System(NVS) is a forward-looking program to replace national airspace system (NAS) voice switches and radios with a new technology system capable of supporting future requirements for the NextGen. Many of these switches are experiencing increasing obsolescence and failures and are in need of replacement. They are not capable of supporting flexible reallocation of access to communications resources, and lack security needed for a network-based communications infrastructure, which is a key concept in modernization of the NAS. The NVS program will provide a key transitional element in the air traffic control voice communications infrastructure as it moves toward realizing the FAAs NextGen vision and a more operationally efficient and economic NAS.

Radios: There are 75 sites which will receive a total of 4,498 radios. The sites to receive radios include FACSFACs remote sites at Naval and Marine Corps Air Stations. The number of radios per site varies due to operational requirements and the number of aircraft serviced.

Voice Switches: There are two specific types of Voice Switches being procured: Operational Communication System (OCS) and Emergency Control System (ECS): 56 OCS Voice Switches, 42 ECS Voice Switches.

42 Sites will receive both an OCS Voice Switch and an ECS Voice Switch, 14 sites will receive only an OCS voice switch. While FACSFAC remote sites are equipped with radios, they are not equipped with Voice Switches.

Procurement of the Voice Switch Radios has been delayed until 2025. These items are procured through an FAA contract. The FAA has delayed procurement of these radios due to recent failures with prototype testing.

Procurements, installations and associated support costs for this effort prior to FY2017 were funded under BLI 2840.

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9			P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment					Modification Number / Title: 8 / CB080 NAS Voice System (NVS)				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Models of Systems Affected: NAS			Modification Type: Added Capability					Related RDT&E PEs: 0604504N				
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Procurement												
Modification Item 1 of 1: CB080 NAS Voice System (NVS)												
B Kits												
Recurring												
2.1.2) End Item: Radios - NonOrganic ⁽¹⁹⁾	926 / 5.173	618 / 5.509	497 / 4.519	574 / 5.314	- / -	574 / 5.314	669 / 6.543	650 / 6.500	291 / 3.201	291 / 3.201	- / -	4,516 / 39.960
2.1.3) End Item: OCS Voice Switch - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	56 / 82.343	56 / 82.343
2.1.4) End Item: ECS Voice Switch - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	42 / 16.106	42 / 16.106
Subtotal: Recurring	- / 5.173	- / 5.509	- / 4.519	- / 5.314	- / -	- / 5.314	- / 6.543	- / 6.500	- / 3.201	- / 3.201	- / 98.449	- / 138.409
Subtotal: CB080 NAS Voice System (NVS)	926 / 5.173	618 / 5.509	497 / 4.519	574 / 5.314	- / -	574 / 5.314	669 / 6.543	650 / 6.500	291 / 3.201	291 / 3.201	98 / 98.449	4,614 / 138.409
Subtotal: Procurement, All Modification Items	- / 5.173	- / 5.509	- / 4.519	- / 5.314	- / -	- / 5.314	- / 6.543	- / 6.500	- / 3.201	- / 3.201	- / 98.449	- / 138.409
Support (All Modification Items)												
3.1) Integrated Logistics Support	- / 0.180	- / 0.220	- / 0.200	- / 0.260	- / -	- / 0.260	- / 0.200	- / 0.220	- / 0.220	- / 0.218	Continuing	Continuing
3.2) Production Engineering ⁽²⁰⁾	- / 0.310	- / 0.443	- / 0.447	- / 0.642	- / -	- / 0.642	- / 0.706	- / 0.777	- / 0.855	- / 0.940	Continuing	Continuing
Subtotal: Support	- / 0.490	- / 0.663	- / 0.647	- / 0.902	- / -	- / 0.902	- / 0.906	- / 0.997	- / 1.075	- / 1.158	Continuing	Continuing
Installation												
Modification Item 1 of 1: CB080 NAS Voice System (NVS)	- / 0.687	- / 1.336	- / 1.423	- / 2.158	- / 0.000	- / 2.158	- / 2.817	- / 3.061	- / 3.227	- / 2.429	- / 60.228	- / 77.366
Subtotal: Installation	- / 0.687	- / 1.336	- / 1.423	- / 2.158	- / -	- / 2.158	- / 2.817	- / 3.061	- / 3.227	- / 2.429	- / 60.228	- / 77.366
Total												
Total Cost (Procurement + Support + Installation)	6.350	7.508	6.589	8.374	0.000	8.374	10.266	10.558	7.503	6.788	Continuing	Continuing

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Exhibit P-3a, Individual Modification: PB 2020 Navy											Date: March 2019																				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9										P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment										Modification Number / Title: 8 / CB080 NAS Voice System (NVS)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: CB080 NAS Voice System (NVS)																															
Manufacturer Information																															
Manufacturer Name: General Dynamics														Manufacturer Location: Scottsdale, Arizona																	
Administrative Leadtime (in Months): 6														Production Leadtime (in Months): 12																	
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates		Mar 2018				Mar 2019				Mar 2020				Mar 2021				Mar 2022				Mar 2023				Mar 2024					
Delivery Dates		Mar 2019				Mar 2020				Mar 2021				Mar 2022				Mar 2023				Mar 2024				Mar 2025					
Installation Information																															
Method of Implementation: AIT: Installation Name: End Item:: Installation Name: End Item: Radios																															
Installation Cost		Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete	Total									
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)									
Prior Years		334 / 0.687		592 / 0.959		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		926 / 1.646							
FY 2018		- / -		0 / 0.377		618 / 1.023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		618 / 1.400							
FY 2019		- / -		- / -		0 / 0.400		497 / 1.250		0 / 0.000		497 / 1.250		- / -		- / -		- / -		- / -		0 / 0.000		497 / 1.650							
FY 2020		- / -		- / -		- / -		0 / 0.908		0 / 0.000		0 / 0.908		574 / 1.262		- / -		- / -		- / -		0 / 0.000		574 / 2.170							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		0 / 1.555		669 / 1.606		- / -		- / -		0 / 0.000		669 / 3.161							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 1.455		650 / 1.606		- / -		0 / 0.000		650 / 3.061							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 1.621		291 / 0.727		0 / 0.000		291 / 2.348							
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 1.702		291 / 0.728		291 / 2.430							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		334 / 0.687		592 / 1.336		618 / 1.423		497 / 2.158		0 / 0.000		497 / 2.158		574 / 2.817		669 / 3.061		650 / 3.227		291 / 2.429		291 / 0.728		4,516 / 17.866							
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	334	-	198	197	197	-	206	206	206	-	167	166	164	-	192	192	190	-	223	223	223	-	222	223	205	-	97	97	97	291	4,516
Out	334	-	-	297	295	-	-	309	309	-	-	250	247	-	-	292	282	-	-	334	335	-	-	334	316	-	-	145	146	291	4,516
Method of Implementation: AIT: Installation Name: End Item:: Installation Name: End Item: OCS Voice Switch																															
Installation Cost		Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete	Total									
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)									
Prior Years		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000									

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9										P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment										Modification Number / Title: 8 / CB080 NAS Voice System (NVS)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: CB080 NAS Voice System (NVS)																															
Installation Information																															
Method of Implementation: AIT: Installation Name: End Item:: Installation Name: End Item: OCS Voice Switch																															
Installation Cost		Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total																		
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																		
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2024		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	56 / 52.000	56 / 52.000																		
Total		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	56 / 52.000	56 / 52.000																		
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	56	56
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	56	56
Method of Implementation: AIT: Installation Name: End Item:: Installation Name: End Item: ECS Voice Switch																															
Installation Cost		Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total																		
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																		
Prior Years		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000																		
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2024		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	42 / 7.500	42 / 7.500																		
Total		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	42 / 7.500	42 / 7.500																		

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Exhibit P-3a, Individual Modification: PB 2020 Navy																							Date: March 2019								
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9										P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment										Modification Number / Title: 8 / CB080 NAS Voice System (NVS)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: CB080 NAS Voice System (NVS)																															
Installation Information																															
Method of Implementation: AIT: Installation Name: End Item:: Installation Name: End Item: ECS Voice Switch																															
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	42
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	42

Footnotes:

- ⁽¹⁹⁾ End Item costs are based on current FAA contract pricing. Inventory objective is 4,516. Advanced Planning (AP) costs for installation occur 1 year prior to actual install and show as quantity zero
- ⁽²⁰⁾ FY2020 increase in production engineering is to account for increased costs anticipated for site prep design as the older sites receive the radio upgrades.

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9					P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment					Modification Number / Title: 9 / CB090 - DAAS Tech Refresh Upgrade II		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	0.000	0.000	0.000	0.000	0.000	0.652	3.514	7.273	6.879	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	0.000	0.000	0.000	0.000	0.000	0.652	3.514	7.273	6.879	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	0.000	0.000	0.000	0.000	0.000	0.652	3.514	7.273	6.879	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: The Standard Terminal Automation Replacement System (STARS) is a joint (DoD) and Department of Transportation Federal Aviation Administration (FAA) program to modernize terminal air traffic control systems. The DoD version of STARS, DoD Advanced Automation System (DAAS), must be upgraded to ensure continued compliance with FAA NextGen requirements in order to continue participation in the National Airspace System (NAS). Currently fielded STARS COTS equipment/software are experiencing obsolescence and information assurance (IA) issues. The DAAS Tech Refresh Upgrades will address these obsolescence and IA issues as well as maintain compatibility with the FAA's Next Generation (NextGen) Air Transportation System initiatives. Inventory objective is 40. The DAAS Tech Refresh Upgrade II efforts will implement Engineering Change Proposals (ECPs) defined under cost element CB010 (DoD Advanced Automation System (DAAS)) of this budget. The nature of this consolidation creates an interdependency between CB010 and CB090 that addresses obsolescence and IA issues that render the current hardware and software unsupportable. Both hardware and software for these two cost elements overlap requiring concurrent efforts. Delay or interruption to either CB010 and /or CB090 causes a break in fleet capability and negatively impacts both safety of flight and Air Traffic Controller workload. CB090 is a follow-on to CB050 (STARS Tech Refresh Upgrade) which will complete procurements in FY20.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy									Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9				P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment					Modification Number / Title: 9 / CB090 - DAAS Tech Refresh Upgrade II				
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: [No Model Specified]				Modification Type: TBD				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	
Procurement													
<i>Modification Item 1 of 1:</i> CB090 - DAAS Tech Refresh Upgrade II													
B Kits													
Recurring													
2.1.1) End Item - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 2.670	4 / 5.444	3 / 4.131	31 / 37.865	40 / 50.110	
<i>Subtotal: Recurring</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / 2.670	- / 5.444	- / 4.131	- / 37.865	- / 50.110	
<i>Subtotal: CB090 - DAAS Tech Refresh Upgrade II</i>	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 2.670	4 / 5.444	3 / 4.131	31 / 37.865	40 / 50.110	
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / 2.670	- / 5.444	- / 4.131	- / 37.865	- / 50.110	
Support (All Modification Items)													
3.1) Integrated Logistics Support	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.163	- / 0.166	- / 0.170	Continuing	Continuing	
3.2) Production Engineering	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.652	- / 0.681	- / 0.593	- / 0.398	Continuing	Continuing	
<i>Subtotal: Support</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / 0.652	- / 0.844	- / 0.759	- / 0.568	Continuing	Continuing	
Installation													
<i>Modification Item 1 of 1:</i> CB090 - DAAS Tech Refresh Upgrade II	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 1.070	- / 2.180	- / 20.285	- / 23.535	
<i>Subtotal: Installation</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.070	- / 2.180	- / 20.285	- / 23.535	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	0.000	0.000	0.000	0.000	0.652	3.514	7.273	6.879	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9				P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment				Modification Number / Title: 9 / CB090 - DAAS Tech Refresh Upgrade II				
ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Modification Item 1 of 1: CB090 - DAAS Tech Refresh Upgrade II												
Manufacturer Information												
Manufacturer Name: TBD						Manufacturer Location: TBD						
Administrative Leadtime (in Months): 4						Production Leadtime (in Months): 12						
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates					Jan 2022	Jan 2023	Jan 2024					
Delivery Dates					Jan 2023	Jan 2024	Jan 2025					
Manufacturer Name: TBD						Manufacturer Location: TBD						
Administrative Leadtime (in Months): 0						Production Leadtime (in Months): 0						
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates												
Delivery Dates												
Installation Information												
Method of Implementation: [none specified]:: Installation Name: End Item												
Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 1.070	- / -	0 / 0.000	2 / 1.070
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 2.180	0 / 0.000	4 / 2.180
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 1.799	3 / 1.799
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	31 / 18.486	31 / 18.486
Total	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 1.070	4 / 2.180	34 / 20.285	40 / 23.535

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019																																																																																																																						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment	Modification Number / Title: 9 / CB090 - DAAS Tech Refresh Upgrade II																																																																																																																						
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:																																																																																																																						
Modification Item 1 of 1: CB090 - DAAS Tech Refresh Upgrade II																																																																																																																								
Installation Information																																																																																																																								
Method of Implementation: [none specified]:: Installation Name: End Item																																																																																																																								
Installation Schedule																																																																																																																								
	PYS	<table><tr><th colspan="4">FY 2018</th><th colspan="4">FY 2019</th><th colspan="4">FY 2020</th><th colspan="4">FY 2021</th><th colspan="4">FY 2022</th><th colspan="4">FY 2023</th><th colspan="4">FY 2024</th><th rowspan="2">TC</th><th rowspan="2">Tot</th></tr><tr><th>Q1</th><th>Q2</th><th>Q3</th><th>Q4</th><th>Q1</th><th>Q2</th><th>Q3</th><th>Q4</th><th>Q1</th><th>Q2</th><th>Q3</th><th>Q4</th><th>Q1</th><th>Q2</th><th>Q3</th><th>Q4</th><th>Q1</th><th>Q2</th><th>Q3</th><th>Q4</th><th>Q1</th><th>Q2</th><th>Q3</th><th>Q4</th><th>Q1</th><th>Q2</th><th>Q3</th><th>Q4</th></tr><tr><td>In</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>1</td><td>1</td><td>-</td><td>-</td><td>2</td><td>2</td><td>-</td><td>34</td><td>40</td></tr><tr><td>Out</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>1</td><td>1</td><td>-</td><td>-</td><td>2</td><td>2</td><td>-</td><td>34</td><td>40</td></tr></table>	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	2	2	-	34	40	Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	2	2	-	34	40
FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot																																																																																											
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4																																																																																													
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	2	2	-	34	40																																																																																											
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	2	2	-	34	40																																																																																											

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Exhibit P-3a, Individual Modification: PB 2020 Navy							Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9				P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment				Modification Number / Title: 10 / CB100 TAS Tech Refresh Upgrade II			

ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	0.000	0.000	0.600	7.065	0.000	7.065	13.891	11.968	10.624	10.715	Continuing	Continuing
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	0.000	0.000	0.600	7.065	0.000	7.065	13.891	11.968	10.624	10.715	Continuing	Continuing
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	0.000	0.000	0.600	7.065	0.000	7.065	13.891	11.968	10.624	10.715	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The AN/FYC-22 Visual Information Display System (VIDS) is the Navy developed/owned system that meets the NAS Mod Tower Automation System (TAS) requirements. The Tower Automation System (TAS) COTS equipment is suffering from obsolescence and Information Assurance (IA) issues. The TAS Tech Refresh Upgrades will address these obsolescence and IA issues as well as maintain compatibility with the FAA's Next Generation (NextGen) Air Transportation System initiatives. In order to achieve the modernization of the National Airspace System envisioned by NextGen, the FAA is developing a Terminal Flight Data Management (TFDM) platform that integrates flight data systems and decision tools. The TFDM program is an integrated approach to maximize the efficient collection, distribution, and update of data and improve access to information necessary for the safe and efficient control of air traffic. The TAS will be upgraded to be consistent with the FAA TFDM. The inventory objective is 56.

The TAS Tech Refresh Upgrade II efforts will implement Engineering Change Proposals (ECPs) defined under cost element CB040 (Tower Automation System (TAS)) of this budget. The nature of this consolidation creates an interdependency between CB040 and CB100 that addresses obsolescence and IA issues that render the current hardware and software unsupportable. Both hardware and software for these two cost elements overlap requiring concurrent efforts. Delay or interruption to either CB040 and /or CB100 causes a break in fleet capability and negatively impacts both safety of flight and Air Traffic Controller workload. CB100 is a follow-on to CB070 (TAS Tech Refresh) which will complete procurements in FY20

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Exhibit P-3a, Individual Modification: PB 2020 Navy							Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9			P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment					Modification Number / Title: 10 / CB100 TAS Tech Refresh Upgrade II					
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: [No Model Specified]			Modification Type: TBD					Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: CB100 TAS Tech Refresh Upgrade II													
B Kits													
Recurring													
2.1.1) End Item - NonOrganic	- / -	- / -	- / -	9 / 5.715	- / -	9 / 5.715	16 / 10.240	10 / 6.520	10 / 6.600	10 / 6.650	1 / 0.732	56 / 36.457	
Subtotal: Recurring	- / 0.000	- / -	- / -	- / 5.715	- / -	- / 5.715	- / 10.240	- / 6.520	- / 6.600	- / 6.650	- / 0.732	- / 36.457	
Subtotal: CB100 TAS Tech Refresh Upgrade II	- / -	- / -	- / -	9 / 5.715	- / -	9 / 5.715	16 / 10.240	10 / 6.520	10 / 6.600	10 / 6.650	1 / 0.732	56 / 36.457	
Subtotal: Procurement, All Modification Items	- / 0.000	- / -	- / -	- / 5.715	- / -	- / 5.715	- / 10.240	- / 6.520	- / 6.600	- / 6.650	- / 0.732	- / 36.457	
Support (All Modification Items)													
3.1) Integrated Logistics Support	- / -	- / -	- / -	- / 0.325	- / -	- / 0.325	- / 0.355	- / 0.301	- / 0.286	- / 0.255	Continuing	Continuing	
3.2) Production Engineering	- / -	- / -	- / 0.600	- / 1.025	- / -	- / 1.025	- / 1.046	- / 1.067	- / 1.088	- / 1.110	Continuing	Continuing	
Subtotal: Support	- / 0.000	- / -	- / 0.600	- / 1.350	- / -	- / 1.350	- / 1.401	- / 1.368	- / 1.374	- / 1.365	Continuing	Continuing	
Installation													
Modification Item 1 of 1: CB100 TAS Tech Refresh Upgrade II	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 2.250	- / 4.080	- / 2.650	- / 2.700	- / 3.270	- / 14.950	
Subtotal: Installation	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / 2.250	- / 4.080	- / 2.650	- / 2.700	- / 3.270	- / 14.950	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	0.600	7.065	0.000	7.065	13.891	11.968	10.624	10.715	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9										P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment										Modification Number / Title: 10 / CB100 TAS Tech Refresh Upgrade II											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: CB100 TAS Tech Refresh Upgrade II																															
Manufacturer Information																															
Manufacturer Name: TBD															Manufacturer Location: TBD																
Administrative Leadtime <i>(in Months)</i> : 6															Production Leadtime <i>(in Months)</i> : 12																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates										Mar 2020				Mar 2021				Mar 2022				Mar 2023				Mar 2024					
Delivery Dates										Mar 2021				Mar 2022				Mar 2023				Mar 2024				Mar 2025					
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: End Item																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		9 / 2.250		- / -		- / -		- / -		0 / 0.000		9 / 2.250					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		16 / 4.080		- / -		- / -		0 / 0.000		16 / 4.080					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		10 / 2.650		- / -		0 / 0.000		10 / 2.650					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		10 / 2.700		0 / 0.000		10 / 2.700					
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		10 / 2.970		10 / 2.970					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 0.300		1 / 0.300					
Total		- / -		- / -		- / -		- / -		- / -		- / -		- / -		9 / 2.250		16 / 4.080		10 / 2.650		10 / 2.700		11 / 3.270		56 / 14.950					
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	4	-	-	8	8	-	-	5	5	-	-	5	5	11	56
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	4	-	-	8	8	-	-	5	5	-	-	5	5	11	56

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9					P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment					Modification Number / Title: 11 / CB110 DASR Tech Refresh Upgrade III		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	0.000	0.000	0.000	0.000	0.000	0.355	3.023	2.772	4.136	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	0.000	0.000	0.000	0.000	0.000	0.355	3.023	2.772	4.136	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	0.000	0.000	0.000	0.000	0.000	0.355	3.023	2.772	4.136	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: The AN/GPN-30 DASR was developed by the Air Force as part of a joint DoD/ FAA program to modernize and standardize ATC equipment in the National Airspace System. The DASR replaced aging, obsolete approach control radars and complies with joint DoD/FAA modernization program agreements. The DASR Tech Refresh Upgrade III efforts will implement Engineering Change Proposals (ECPs) developed by the Air Force /FAA that address urgent and critical obsolescence issues associated with DASR subassemblies (including Commercial Off-The-Shelf (COTS) interface and control assemblies) and closure of discrepancy items from DASR Tech Refresh Segment 2.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9				P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment					Modification Number / Title: 11 / CB110 DASR Tech Refresh Upgrade III			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:				
Models of Systems Affected: [No Model Specified]				Modification Type: TBD				Related RDT&E PEs:				
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>
Procurement												
<i>Modification Item 1 of 1:</i> CB110 DASR Tech Refresh Upgrade III												
B Kits												
Recurring												
2.1.1) End Item - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 2.375	2 / 0.969	7 / 3.462	14 / 7.746	28 / 14.552
<i>Subtotal: Recurring</i>	<i>- / 0.000</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 2.375</i>	<i>- / 0.969</i>	<i>- / 3.462</i>	<i>- / 7.746</i>	<i>- / 14.552</i>
<i>Subtotal: CB110 DASR Tech Refresh Upgrade III</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>5 / 2.375</i>	<i>2 / 0.969</i>	<i>7 / 3.462</i>	<i>14 / 7.746</i>	<i>28 / 14.552</i>
<i>Subtotal: Procurement, All Modification Items</i>	<i>- / 0.000</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 2.375</i>	<i>- / 0.969</i>	<i>- / 3.462</i>	<i>- / 7.746</i>	<i>- / 14.552</i>
Support (All Modification Items)												
3.1) Integrated Logistics Support	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.248	- / 0.260	- / 0.073	- / -	- / 0.581
3.2) Production Engineering	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.355	- / 0.400	- / 0.418	- / 0.131	Continuing	Continuing
<i>Subtotal: Support</i>	<i>- / 0.000</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 0.355</i>	<i>- / 0.648</i>	<i>- / 0.678</i>	<i>- / 0.204</i>	<i>Continuing</i>	<i>Continuing</i>
Installation												
<i>Modification Item 1 of 1:</i> CB110 DASR Tech Refresh Upgrade III	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 1.125	- / 0.470	- / 5.569	- / 17.164
<i>Subtotal: Installation</i>	<i>- / 0.000</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 1.125</i>	<i>- / 0.470</i>	<i>- / 5.569</i>	<i>- / 17.164</i>
Total												
Total Cost (Procurement + Support + Installation)	0.000	0.000	0.000	0.000	0.000	0.000	0.355	3.023	2.772	4.136	Continuing	Continuing

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment	Modification Number / Title: 11 / CB110 DASR Tech Refresh Upgrade III

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:

Modification Item 1 of 1: CB110 DASR Tech Refresh Upgrade III

Installation Information

Method of Implementation: [none specified]:: Installation Name: End Item

Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 1.125	- / -	0 / 0.000	5 / 1.125
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.470	0 / 0.000	2 / 0.470
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	7 / 1.820	7 / 1.820
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	14 / 3.749	14 / 3.749
Total	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 1.125	2 / 0.470	21 / 5.569	28 / 7.164

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2	-	-	1	1	21	28	
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2	-	-	1	1	21	28	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9					P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment					Modification Number / Title: 12 / X1036 AN/FPN-63 PAR TECH REFRESH		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	9.847	10.416	9.422	10.042	0.000	10.042	10.154	9.618	9.710	9.870	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	9.847	10.416	9.422	10.042	0.000	10.042	10.154	9.618	9.710	9.870	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	9.847	10.416	9.422	10.042	0.000	10.042	10.154	9.618	9.710	9.870	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: This Engineering Change Proposal (ECP) constitutes Block 2 and 3 of the Service Life Extension Program for the AN/FPN-63. It will extend the service life to at least 2025 by replacing obsolete receiver/transmitter assemblies, radar video processors, and controller displays with state-of-the-art assemblies/displays. This upgrade will also correct numerous human factors issues. This ECP will be accomplished on 36 deployed AN/FPN-63 Precision Approach Radar (PAR) Systems. Procurements, installations and associated support costs for this effort prior to FY2017 were funded under BLI 2846.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9				P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment				Modification Number / Title: 12 / X1036 AN/FPN-63 PAR TECH REFRESH					
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: Shore Sites				Modification Type: Reliability				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: X1036 AN/FPN-63 PAR TECH REFRESH													
B Kits													
Recurring													
1.1.1) X1036 - PAR Tech Refresh - NonOrganic ⁽²¹⁾		7 / 4.269	2 / 4.642	3 / 6.247	3 / 6.341	- / -	3 / 6.341	3 / 6.483	3 / 6.630	3 / 6.750	3 / 6.857	13 / 38.558	40 / 86.777
Subtotal: Recurring		- / 4.269	- / 4.642	- / 6.247	- / 6.341	- / -	- / 6.341	- / 6.483	- / 6.630	- / 6.750	- / 6.857	- / 38.558	- / 86.777
Subtotal: X1036 AN/FPN-63 PAR TECH REFRESH		7 / 4.269	2 / 4.642	3 / 6.247	3 / 6.341	- / -	3 / 6.341	3 / 6.483	3 / 6.630	3 / 6.750	3 / 6.857	13 / 38.558	40 / 86.777
Subtotal: Procurement, All Modification Items		- / 4.269	- / 4.642	- / 6.247	- / 6.341	- / -	- / 6.341	- / 6.483	- / 6.630	- / 6.750	- / 6.857	- / 38.558	- / 86.777
Support (All Modification Items)													
2.1) Integrated Logistics Support		- / 0.405	- / 0.411	- / 0.411	- / 0.400	- / -	- / 0.400	- / 0.400	- / 0.150	- / 0.075	- / 0.076	Continuing	Continuing
2.2) Production Engineering		- / 1.690	- / 1.722	- / 1.038	- / 0.677	- / -	- / 0.677	- / 0.599	- / 0.118	- / 0.118	- / 0.120	Continuing	Continuing
2.3) Quality Assurance		- / 0.030	- / 0.030	- / 0.030	- / 0.035	- / -	- / 0.035	- / 0.035	- / 0.035	- / 0.035	- / 0.036	Continuing	Continuing
Subtotal: Support		- / 2.125	- / 2.163	- / 1.479	- / 1.112	- / -	- / 1.112	- / 1.034	- / 0.303	- / 0.228	- / 0.232	Continuing	Continuing
Installation													
Modification Item 1 of 1: X1036 AN/FPN-63 PAR TECH REFRESH		- / 3.453	- / 3.611	- / 1.696	- / 2.589	- / 0.000	- / 2.589	- / 2.637	- / 2.685	- / 2.732	- / 2.781	- / 30.546	- / 52.730
Subtotal: Installation		- / 3.453	- / 3.611	- / 1.696	- / 2.589	- / -	- / 2.589	- / 2.637	- / 2.685	- / 2.732	- / 2.781	- / 30.546	- / 52.730
Total													
Total Cost (Procurement + Support + Installation)		9.847	10.416	9.422	10.042	0.000	10.042	10.154	9.618	9.710	9.870	Continuing	Continuing

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9										P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment										Modification Number / Title: 12 / X1036 AN/FPN-63 PAR TECH REFRESH											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: X1036 AN/FPN-63 PAR TECH REFRESH																															
Manufacturer Information																															
Manufacturer Name: MOOG															Manufacturer Location: Salt Lake City, UT																
Administrative Leadtime (in Months): 3															Production Leadtime (in Months): 13																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates		Dec 2017				Dec 2018				Dec 2019				Dec 2020				Dec 2021				Dec 2022				Dec 2023					
Delivery Dates		Jan 2019				Jan 2020				Jan 2021				Jan 2022				Jan 2023				Jan 2024				Jan 2025					
Installation Information																															
Method of Implementation: Alteration Installation Team:: Installation Name: X1036 - PAR Tech Refresh																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		5 / 3.453		2 / 2.966		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		7 / 6.419							
FY 2018		- / -		0 / 0.645		2 / 1.696		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 2.341							
FY 2019		- / -		- / -		- / -		3 / 2.589		0 / 0.000		3 / 2.589		- / -		- / -		- / -		- / -		0 / 0.000		3 / 2.589							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		3 / 2.637		- / -		- / -		- / -		0 / 0.000		3 / 2.637							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		3 / 2.685		- / -		- / -		0 / 0.000		3 / 2.685							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		3 / 2.732		- / -		0 / 0.000		3 / 2.732							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		3 / 2.781		0 / 0.000		3 / 2.781					
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		3 / 2.146		3 / 2.146					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		13 / 28.400		13 / 28.400					
Total		5 / 3.453		2 / 3.611		2 / 1.696		3 / 2.589		0 / 0.000		3 / 2.589		3 / 2.637		3 / 2.685		3 / 2.732		3 / 2.781		16 / 30.546		40 / 52.730							
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	5	-	1	1	-	-	1	1	-	-	1	1	1	-	1	1	1	-	1	1	1	-	1	1	1	-	1	1	1	16	40
Out	5	-	1	1	-	-	1	1	-	-	1	1	1	-	1	1	1	-	1	1	1	-	1	1	1	-	1	1	1	16	40
Footnotes:																															
⁽²¹⁾ \$645K in FY18 Installation is Advance Planning required for an FY19 Install.																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9				P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment						Modification Number / Title: 13 / X1037 Instrument Landing System Upgrade		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1.901	7.152	6.438	6.492	0.000	6.492	6.421	8.981	9.508	9.762	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1.901	7.152	6.438	6.492	0.000	6.492	6.421	8.981	9.508	9.762	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1.901	7.152	6.438	6.492	0.000	6.492	6.421	8.981	9.508	9.762	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: The Instrument Landing System AN/GRN-33(V) is an automated self-contained system providing precision approach to the air station runways for ILS equipped aircraft reducing manpower required for ground personnel. The First Article unit will have a higher installation cost because of the additional infrastructure to maintain a test bed for NAWCAD Patuxent River. Site surveys are required to be conducted at least three years ahead of system installation to allow for infrastructure upgrades required to install the systems at the air stations. Procurements, installations and associated support costs for this effort prior to FY2017 were funded under BLI 2846.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9				P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment						Modification Number / Title: 13 / X1037 Instrument Landing System Upgrade			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: [No Model Specified]				Modification Type: TBD				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
<i>Modification Item 1 of 1:</i> X1037 Instrument Landing System Upgrade													
B Kits													
Recurring													
1.1.1) Instrument Landing System Upgrades - NonOrganic ⁽²²⁾	1 / 0.392	2 / 0.737	2 / 0.750	2 / 0.750	- / -	2 / 0.750	3 / 1.128	3 / 1.134	3 / 1.237	3 / 1.259	12 / 5.119	31 / 12.506	
<i>Subtotal: Recurring</i>	- / 0.392	- / 0.737	- / 0.750	- / 0.750	- / -	- / 0.750	- / 1.128	- / 1.134	- / 1.237	- / 1.259	- / 5.119	- / 12.506	
<i>Subtotal: X1037 Instrument Landing System Upgrade</i>	1 / 0.392	2 / 0.737	2 / 0.750	2 / 0.750	- / -	2 / 0.750	3 / 1.128	3 / 1.134	3 / 1.237	3 / 1.259	12 / 5.119	31 / 12.506	
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.392	- / 0.737	- / 0.750	- / 0.750	- / -	- / 0.750	- / 1.128	- / 1.134	- / 1.237	- / 1.259	- / 5.119	- / 12.506	
Support (All Modification Items)													
2.1) Logistics	- / 0.424	- / 0.411	- / 0.399	- / 0.350	- / -	- / 0.350	- / 0.250	- / 0.248	- / 0.247	- / 0.251	Continuing	Continuing	
2.2) Production Engineering	- / 1.049	- / 1.072	- / 0.517	- / 0.392	- / -	- / 0.392	- / 0.200	- / 0.200	- / 0.100	- / 0.101	Continuing	Continuing	
2.4) Quality Assurance	- / 0.036	- / 0.037	- / 0.038	- / 0.039	- / -	- / 0.039	- / 0.039	- / 0.039	- / 0.040	- / 0.041	Continuing	Continuing	
<i>Subtotal: Support</i>	- / 1.509	- / 1.520	- / 0.954	- / 0.781	- / -	- / 0.781	- / 0.489	- / 0.487	- / 0.387	- / 0.393	Continuing	Continuing	
Installation													
<i>Modification Item 1 of 1:</i> X1037 Instrument Landing System Upgrade	- / 0.000	- / 4.895	- / 4.734	- / 4.961	- / 0.000	- / 4.961	- / 4.804	- / 7.360	- / 7.884	- / 8.110	- / 18.344	- / 61.092	
<i>Subtotal: Installation</i>	- / 0.000	- / 4.895	- / 4.734	- / 4.961	- / -	- / 4.961	- / 4.804	- / 7.360	- / 7.884	- / 8.110	- / 18.344	- / 61.092	
Total													
Total Cost (Procurement + Support + Installation)	1.901	7.152	6.438	6.492	0.000	6.492	6.421	8.981	9.508	9.762	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9										P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment										Modification Number / Title: 13 / X1037 Instrument Landing System Upgrade											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: X1037 Instrument Landing System Upgrade																															
Manufacturer Information																															
Manufacturer Name: Selex ES															Manufacturer Location: Overland Park, KS																
Administrative Leadtime (in Months): 3															Production Leadtime (in Months): 13																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates		Dec 2017				Dec 2018				Dec 2019				Dec 2020				Dec 2021				Dec 2022				Dec 2023					
Delivery Dates		Jan 2019				Jan 2020				Jan 2021				Jan 2022				Jan 2023				Jan 2024				Jan 2025					
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: Instrument Landing System Upgrades																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		- / -		1 / 4.895		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		1 / 4.895					
FY 2018		- / -		- / -		2 / 4.734		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 4.734					
FY 2019		- / -		- / -		- / -		2 / 4.961		0 / 0.000		2 / 4.961		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 4.961					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		2 / 4.804		- / -		- / -		- / -		- / -		0 / 0.000		2 / 4.804					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		3 / 7.360		- / -		- / -		- / -		0 / 0.000		3 / 7.360					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		3 / 7.884		- / -		- / -		0 / 0.000		3 / 7.884					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		3 / 8.110		0 / 0.000		3 / 8.110					
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		3 / 8.257		3 / 8.257					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		12 / 10.087		12 / 10.087					
Total		- / -		1 / 4.895		2 / 4.734		2 / 4.961		0 / 0.000		2 / 4.961		2 / 4.804		3 / 7.360		3 / 7.884		3 / 8.110		15 / 18.344		31 / 61.092							
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	1	-	-	-	-	2	-	-	1	1	-	-	1	1	-	-	1	1	1	1	1	1	-	1	1	1	-	15	31
Out	-	-	1	-	-	-	-	2	-	-	1	1	-	-	1	1	-	-	1	1	1	1	1	1	-	1	1	1	-	15	31
Footnotes:																															
⁽²²⁾ Inventory objective is 31. Each site (airfield, air station, etc.) will have an independent installation cost base on existing site configurations.																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9					P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment					Modification Number / Title: 14 / X1043 TACAN Antenna Upgrade		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	5.351	9.077	9.576	9.539	0.000	9.539	9.887	9.355	9.507	9.677	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	5.351	9.077	9.576	9.539	0.000	9.539	9.887	9.355	9.507	9.677	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	5.351	9.077	9.576	9.539	0.000	9.539	9.887	9.355	9.507	9.677	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: The TACAN Antenna Upgrade program will provide ships and shore installations with a new antenna for TACAN systems. Justification: TACAN is a dated systems with multiple obsolete parts. Modernization of the TACAN antenna is required to reduce maintenance and improve life span in order to meet needs of the Fleet, and provide a stand-alone recovery system for small combatants of the JPALS program restructure. Procurements, installations and associated support costs for this effort prior to FY2017 were funded under BLI 2846.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy									Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9				P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment					Modification Number / Title: 14 / X1043 TACAN Antenna Upgrade				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: Shore Sites				Modification Type: Modernization				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: X1043 TACAN Antenna Upgrade													
B Kits													
Recurring													
1.1.1) TACAN Antenna Upgrade - NonOrganic ⁽²³⁾	11 / 2.532	24 / 5.690	24 / 5.232	24 / 5.238	- / -	24 / 5.238	24 / 5.501	24 / 5.592	24 / 5.712	24 / 5.815	86 / 39.585	265 / 80.897	
Subtotal: Recurring	- / 2.532	- / 5.690	- / 5.232	- / 5.238	- / -	- / 5.238	- / 5.501	- / 5.592	- / 5.712	- / 5.815	- / 39.585	- / 80.897	
Subtotal: X1043 TACAN Antenna Upgrade	11 / 2.532	24 / 5.690	24 / 5.232	24 / 5.238	- / -	24 / 5.238	24 / 5.501	24 / 5.592	24 / 5.712	24 / 5.815	86 / 39.585	265 / 80.897	
Subtotal: Procurement, All Modification Items	- / 2.532	- / 5.690	- / 5.232	- / 5.238	- / -	- / 5.238	- / 5.501	- / 5.592	- / 5.712	- / 5.815	- / 39.585	- / 80.897	
Support (All Modification Items)													
2.1) Logistics	- / 1.931	- / 1.095	- / 0.561	- / 0.555	- / -	- / 0.555	- / 0.540	- / 0.299	- / 0.275	- / 0.280	Continuing	Continuing	
2.2) Production Engineering	- / 0.815	- / 0.785	- / 0.514	- / 0.523	- / -	- / 0.523	- / 0.618	- / 0.162	- / 0.150	- / 0.153	Continuing	Continuing	
2.3) Quality Assurance	- / 0.073	- / 0.064	- / 0.053	- / 0.042	- / -	- / 0.042	- / 0.040	- / 0.040	- / 0.040	- / 0.041	Continuing	Continuing	
Subtotal: Support	- / 2.819	- / 1.944	- / 1.128	- / 1.120	- / -	- / 1.120	- / 1.198	- / 0.501	- / 0.465	- / 0.474	Continuing	Continuing	
Installation													
Modification Item 1 of 1: X1043 TACAN Antenna Upgrade	- / 0.000	- / 1.443	- / 3.216	- / 3.181	- / 0.000	- / 3.181	- / 3.188	- / 3.262	- / 3.330	- / 3.388	- / 34.778	- / 55.786	
Subtotal: Installation	- / 0.000	- / 1.443	- / 3.216	- / 3.181	- / -	- / 3.181	- / 3.188	- / 3.262	- / 3.330	- / 3.388	- / 34.778	- / 55.786	
Total													
Total Cost (Procurement + Support + Installation)	5.351	9.077	9.576	9.539	0.000	9.539	9.887	9.355	9.507	9.677	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9					P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment										Modification Number / Title: 14 / X1043 TACAN Antenna Upgrade																
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:																					
Modification Item 1 of 1: X1043 TACAN Antenna Upgrade																															
Manufacturer Information																															
Manufacturer Name: MOOG										Manufacturer Location: Salt Lake City, UT																					
Administrative Leadtime (in Months): 3										Production Leadtime (in Months): 13																					
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024																								
Contract Dates	Dec 2017	Dec 2018	Dec 2019	Dec 2020	Dec 2021	Dec 2022	Dec 2023																								
Delivery Dates	Jan 2019	Jan 2020	Jan 2021	Jan 2022	Jan 2023	Jan 2024	Jan 2025																								
Installation Information																															
Method of Implementation: AIT Installation:: Installation Name: TACAN Antenna Upgrade																															
Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total																			
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																			
Prior Years	- / -	11 / 1.443	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	11 / 1.443																			
FY 2018	- / -	- / -	24 / 3.216	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	24 / 3.216																			
FY 2019	- / -	- / -	- / -	24 / 3.181	0 / 0.000	24 / 3.181	- / -	- / -	- / -	- / -	0 / 0.000	24 / 3.181																			
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	24 / 3.188	- / -	- / -	- / -	0 / 0.000	24 / 3.188																			
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	24 / 3.262	- / -	- / -	0 / 0.000	24 / 3.262																			
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	24 / 3.330	- / -	0 / 0.000	24 / 3.330																			
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	24 / 3.388	0 / 0.000	24 / 3.388																			
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	24 / 4.706	24 / 4.706																			
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	86 / 30.072	86 / 30.072																			
Total	- / -	11 / 1.443	24 / 3.216	24 / 3.181	0 / 0.000	24 / 3.181	24 / 3.188	24 / 3.262	24 / 3.330	24 / 3.388	110 / 34.778	265 / 55.786																			
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	5	4	2	-	8	8	8	-	8	8	8	-	8	8	8	-	8	8	8	-	8	8	8	-	8	8	8	110	265
Out	-	-	5	4	2	-	8	8	8	-	8	8	8	-	8	8	8	-	8	8	8	-	8	8	8	-	8	8	8	110	265
Footnotes: ⁽²³⁾ X1043: Inventory objective is 265.																															

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy	Date: March 2019

Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment	P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	27.890	37.278	47.890	67.410	0.000	67.410	83.145	87.128	106.934	110.075	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	27.890	37.278	47.890	67.410	0.000	67.410	83.145	87.128	106.934	110.075	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	27.890	37.278	47.890	67.410	0.000	67.410	83.145	87.128	106.934	110.075	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	1.642	0.546	1.767	-	1.767	4.723	5.222	9.870	9.156	Continuing	Continuing
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

In FY 2016 and prior years, efforts for Shipboard Air Traffic Control (SATC) and Automatic Carrier Landing System (ACLS) were previously funded under BLIs OPN 2831 and OPN 2832, respectively.

DESCRIPTION:

Shipboard Air Traffic Control (SATC):

SATC systems are responsible for safe and expeditious control of air traffic within 50 Nautical Miles of a ship. SATC systems include the air traffic surveillance radar (ASR), AN/SPN43 and the air traffic control processing and display system, AN/TPX-42A(V), which has three major configurations: AN/TPX-42A(V)14/15/16. v14 and v16 configurations comprise of Carrier Air Traffic Control Center - Direct Altitude and Identity Readout (CATCC-DAIR), Amphibious Air Traffic Control Center - Direct Altitude and Identity Readout (AATCC-DAIR); both (V)14 and (V)16 DAIR systems use AN/SPN-43 and Identification Friend or Foe (IFF) inputs to track and control aircraft. The third configuration, AN/TPX-42A(V)15 interfaces with next generation multipurpose radars and IFF to perform the same mission. Obsolescence problems are being addressed through various upgrades in a phased approach. The major upgrades include a series of AN/TPX-42A(V) modification kits requiring various combinations of OL-541 processor re-host, track processor upgrade, OD-220 console, audio/video recorder, flat panel display, embedded trainer, and other components to bring the AN/TPX-42A(V)14 system to AN/TPX-42A(V)16 configuration and eventually, through execution of the Air Traffic Control Multifunction Console Engineering Change Proposal (ECP), to the AN/SYY-1 configuration. The nomenclature AN/SYY-1 more accurately reflects the system attributes as a (S) water (Surface Ship), (Y) data processing, (Y) surveillance and control system. The ASR capability provided by the AN/SPN-43 radar system is required for NIMITZ Class CVNs and LHA/LHD class ships until the capability is replaced by the AN/SPN-50 Shipboard Air Traffic Radar. Obsolescence problems are being addressed through various upgrades in a phased approach until replaced.

Shipboard Air Traffic Radar (SATR) (SPN-50)

The "National Defense Strategy of the United States of America" calls for military forces to assure allies and friends, dissuade potential adversaries, deter aggression and counter coercion, and defeat adversaries in order to accomplish our national objectives. The Shipboard Air Traffic Radar (SATR) AN/SPN-50(V)1 (hereinafter referred to as AN/SPN-50(V)1) supports these objectives and will be the primary Air Traffic Control (ATC) surveillance radar onboard Nimitz Class Aircraft Carrier (CVN) and Amphibious (LHA and LHD (LH)) type ships. The launch and recovery of aircraft, to include, ATC is a primary function of aircraft carriers and amphibious landing platforms. The surveillance function provides weather and radar data to air traffic controllers supporting aviation operations of all Navy, Marine Corps, joint and allied aviation assets within the assigned airspace. This data is utilized by air traffic controllers to provide a variety of ATC services such as ATC radar approach and departure services, which includes aircraft separation, airspace monitoring, navigational assistance, emergency vectoring, traffic calls, and vectoring and sequencing to the final approach point. Reliable and accurate ATC surveillance radar enhances overall mission and training effectiveness, and safety for aircrews and aircraft alike. The SPN-50 CDD was signed March 2015 and Milestone B was held September 2015 where the Milestone Decision Authority (MDA) designated the SPN-50 Program as an ACAT 4(T). Milestone C is planned for 3rd Quarter 2020 and IOC is planned for 4thQuarter 2022. The AN/SPN-50(V) inventory objective is 25 systems (6 LRIPs, and 19 FRP).

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment		P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
Automatic Carrier Landing System (ACLS): ACLS program comprises three legacy systems (AN/SPN-46, AN/SPN-41, and AN/SPN-35C) that provide the primary and secondary precision electronic guidance for landing suitably equipped aircraft under all weather conditions on CVNs, LHA/LHD class ships, and selected Naval Air Stations. Many of the components in the system have been in service for more than twenty years. This program funds maintainability, reliability, modernization and supportability improvements to existing equipment components that can no longer be maintained, procured or supported, as well as items providing upgraded operational capability. Life Cycle Extension (LCE) sustainment efforts for ACLS systems will be completed to address obsolescence and supportability issues, leverage Commercial Off-The-Shelf (COTS) technology, address cyber-security updates and requirements, and support external system interface requirements. The LCE efforts by system are planned to be conducted in blocks, to address the most critical obsolescence, supportability, and emergent requirements first and to group remaining improvements into logical block upgrade packages that minimize multiple, duplicative repair efforts and reduce costs while delivering hardware in a time phased approach to meet ship maintenance availability schedules. This program includes a shore-based variant, installed at key airfields, that provides identical control signal indications (for pilot familiarization) as those provided by the afloat based systems on board CVN and L-Class vessels. AN/SPN-46 Automatic Carrier Landing System (ACLS) is a Precision Approach Landing System (PALS) on board CVN class ships that provides aircraft position information to the Final Control Workstation in Carrier Air Traffic Control Center (CATCC), and provides the pilot with the capability of selecting a fully automatic, instrument landing, or talk down approach. This system is certified to provide the carrier with an all-weather flight operational capability. Initial Operational Capability (IOC) of the AN/SPN-46 was in 1985, and the system has exceeded its design life. There are significant obsolescence issues. AN/SPN-46 Block IV upgrade is designed to correct known obsolescence issues in the antenna pedestal, 50KW Ka band modulator/transmitter, and various Circuit Card Assemblies (CCAs). If this effort is not accomplished, replacement parts will not be available to support the system, thereby, negatively affecting Operational Availability (Ao) and safety of flight on the aircraft carrier. AN/SPN-41 Transmitting set provides all weather instrument approach guidance from the ship to the aircraft equipped with AN/ARA-63 Receiver Group. It is a secondary precision electronic landing system and safety of flight back up to provide azimuth and elevation alignment information to suitably equipped aircraft aboard CVN and LHA/LHD class ships. Initial Operational Capability (IOC) of the AN/SPN-41 was in 1970 and the system has exceeded its design life. AN/SPN-41 LCE upgrades include the Transmitter, Coder, Electronics Drawer, and Radome hardware to ensure continued operational availability of and extended the service life of the AN/SPN-41, and is the Joint Precision Approach and Landing System (JPALS) back-up system. AN/SPN-35C is the Precision Approach Radar aboard LHA/LHD class ships and is used for Mode III aircraft recovery which ensures the safe approach and landing of AV-8B and various helicopters during adverse weather and night conditions. Initial Operational Capability (IOC) of the AN/SPN-35C was in 2004. The AN/SPN-35C Block I upgrade includes replacement of common failure items, obsolete components, and analog system components, including the Radar Processor Controller (RPC), the Main Input/Output Processor (MIOP), and replace obsolete Control-Indicator Displays to ensure continued operational availability of and extended the service life of the AN/SPN-35C. Procurement, installations and associated support costs with these efforts prior to FY2017 were funded under BLI 2832. Installing Agent: Shipyards and Alteration Installation Teams. When installation to be made: Selected Restricted Availability (SRA) / Restricted Availability (RAV). Ships or facilities to receive the equipment: CVNs, LHA/LHD class ships, Software Support Activity (NAWCAD, St Inigoes, MD) and various selected shore and training sites.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy							Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment					P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment					
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	1 / SATC Modernization Kit Summary (MP054, MP055, MP056, MP057, MP058, MP059) (Modernization)				- / 6.964	- / 8.657	- / 8.593	- / 8.509	- / 0.000	- / 8.509
P-3a	2 / ACLS MOD KITS SUMMARY PN408 (Modernization)				- / 7.028	- / 13.516	- / 15.745	- / 14.580	- / 0.000	- / 14.580
P-3a	3 / AN/SPN-46 (V)3 Radar Set Group PN413 (Reliability)				- / 6.219	- / 5.292	- / 3.384	- / 0.791	- / 0.000	- / 0.791
P-3a	4 / AN/SPN-41 Transmitter MOD (LCE) PN416 (Modernization)				- / 1.101	- / 0.499	- / 0.019	- / 0.000	- / 0.000	- / 0.000
P-3a	5 / AN/SPN-41 Coder Monitor (LCE) PN417 (Modernization)				- / 1.023	- / 0.981	- / 0.614	- / 0.000	- / 0.000	- / 0.000
P-3a	6 / AN/SPN-41 Electronic Drawer Assembly (LCE) PN418 (Modernization)				- / 2.534	- / 1.392	- / 1.581	- / 0.800	- / 0.000	- / 0.800
P-3a	7 / AN/SPN-41 Radome Hardware Upgrade (LCE) PN419 (Modernization)				- / 1.692	- / 0.121	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	8 / AN/SPN-46 Block IV (PN420) (TBD)				- / 1.329	- / 6.820	- / 16.479	- / 18.448	- / 0.000	- / 18.448
P-3a	9 / AN/SPN-35 Block I (PN421) (TBD)				- / 0.000	- / 0.000	- / 1.475	- / 5.942	- / 0.000	- / 5.942
P-3a	10 / AN/SPN-50(V)1 (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 18.340	- / 0.000	- / 18.340
P-40	Total Gross/Weapon System Cost				- / 27.890	- / 37.278	- / 47.890	- / 67.410	- / 0.000	- / 67.410
Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	1 / SATC Modernization Kit Summary (MP054, MP055, MP056, MP057, MP058, MP059) (Modernization)				- / 8.528	- / 8.685	- / 8.876	- / 8.058	Continuing	Continuing
P-3a	2 / ACLS MOD KITS SUMMARY PN408 (Modernization)				- / 15.992	- / 16.877	- / 22.627	- / 20.658	Continuing	Continuing
P-3a	3 / AN/SPN-46 (V)3 Radar Set Group PN413 (Reliability)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 15.686
P-3a	4 / AN/SPN-41 Transmitter MOD (LCE) PN416 (Modernization)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 1.619
P-3a	5 / AN/SPN-41 Coder Monitor (LCE) PN417 (Modernization)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 2.618
P-3a	6 / AN/SPN-41 Electronic Drawer Assembly (LCE) PN418 (Modernization)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 6.307
P-3a	7 / AN/SPN-41 Radome Hardware Upgrade (LCE) PN419 (Modernization)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 1.813
P-3a	8 / AN/SPN-46 Block IV (PN420) (TBD)				- / 18.550	- / 17.796	- / 12.828	- / 12.969	Continuing	Continuing
P-3a	9 / AN/SPN-35 Block I (PN421) (TBD)				- / 8.475	- / 8.362	- / 8.474	- / 12.180	Continuing	Continuing
P-3a	10 / AN/SPN-50(V)1 (TBD)				- / 31.600	- / 35.408	- / 54.129	- / 56.210	- / 123.425	- / 319.112
P-40	Total Gross/Weapon System Cost				- / 83.145	- / 87.128	- / 106.934	- / 110.075	Continuing	Continuing
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										
Justification:										

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment		P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
FY 2020 funds baseline programs to provide Automatic Carrier Landing System (ACLS) and Shipboard Air Traffic Control (SATC) systems.		

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Exhibit P-3a, Individual Modification: PB 2020 Navy						Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9				P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment				Modification Number / Title: 1 / SATC Modernization Kit Summary (MP054, MP055, MP056, MP057, MP058, MP059)			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	6.964	8.657	8.593	8.509	0.000	8.509	8.528	8.685	8.876	8.058	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	6.964	8.657	8.593	8.509	0.000	8.509	8.528	8.685	8.876	8.058	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	6.964	8.657	8.593	8.509	0.000	8.509	8.528	8.685	8.876	8.058	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

This equipment and installation costs on this P-3a are for individual modification programs. This exhibit summarizes procurement and installation for Cost Codes MP054, MP055, MP056, MP057, MP058, and MP059. Line item Engineering Changes to Correct Deficiencies captures unanticipated emergent engineering changes.

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9				P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment				Modification Number / Title: 1 / SATC Modernization Kit Summary (MP054, MP055, MP056, MP057, MP058, MP059)					
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: CVNs, LHA/LHD class ships				Modification Type: Modernization				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: SATC Modernization Kit Summary (MP054, MP055, MP056, MP057, MP058, MP059)													
B Kits													
Recurring													
1.1.4) (MP054)TPX-42 UPG, FC4 (Recorders) - NonOrganic ⁽¹⁾	12 / 0.306	2 / 0.104	6 / 0.318	5 / 0.117	- / -	5 / 0.117	- / -	- / -	- / -	- / -	- / -	25 / 0.845	
1.1.5) (MP055) TPX-42 UPG, FC5 - NonOrganic ⁽²⁾	6 / 1.470	2 / 1.078	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	8 / 2.548	
1.1.6) (MP056) TPX-42 Embedded Trainer - NonOrganic ⁽³⁾	11 / 0.536	3 / 1.557	1 / 0.527	2 / 1.069	- / -	2 / 1.069	- / -	- / -	- / -	- / -	- / -	17 / 3.689	
1.1.7) (MP057) TPX-42 Embedded Trainer Final Control - NonOrganic ⁽⁴⁾	- / -	- / -	7 / 0.310	6 / 0.268	- / -	6 / 0.268	5 / 0.278	7 / 0.398	- / -	- / -	- / -	25 / 1.254	
1.1.8) (MP058) TPX-42 Multi-Function Console - NonOrganic ⁽⁵⁾	- / -	1 / 1.555	3 / 3.783	3 / 3.840	- / -	3 / 3.840	2 / 2.598	4 / 5.274	3 / 4.015	2 / 2.717	7 / 9.652	25 / 33.434	
1.1.9) (MP059) TPX-42 ECP Upgrades - NonOrganic ⁽⁶⁾	6 / 1.140	1 / 1.525	- / -	1 / 0.042	- / -	1 / 0.042	1 / 0.060	- / -	- / -	6 / 1.431	Continuing	Continuing	
Subtotal: Recurring	- / 3.452	- / 5.819	- / 4.938	- / 5.336	- / -	- / 5.336	- / 2.936	- / 5.672	- / 4.015	- / 4.148	Continuing	Continuing	
Subtotal: SATC Modernization Kit Summary (MP054, MP055, MP056, MP057, MP058, MP059)	35 / 3.452	9 / 5.819	17 / 4.938	17 / 5.336	- / -	17 / 5.336	8 / 2.936	11 / 5.672	3 / 4.015	8 / 4.148	Continuing	Continuing	
Subtotal: Procurement, All Modification Items	- / 3.452	- / 5.819	- / 4.938	- / 5.336	- / -	- / 5.336	- / 2.936	- / 5.672	- / 4.015	- / 4.148	Continuing	Continuing	
Support (All Modification Items)													
2.1) Engineering Changes to Correct Deficiencies	- / 0.352	- / 0.657	- / 0.625	- / 0.417	- / -	- / 0.417	- / 0.609	- / 0.398	- / 0.521	- / 0.535	Continuing	Continuing	
2.2) Integrated Logistics Support	- / 0.281	- / 0.285	- / 0.289	- / 0.294	- / -	- / 0.294	- / 0.298	- / 0.303	- / 0.307	- / 0.312	Continuing	Continuing	
2.3) Production Engineering	- / 0.270	- / 0.274	- / 0.278	- / 0.282	- / -	- / 0.282	- / 0.287	- / 0.291	- / 0.295	- / 0.300	Continuing	Continuing	
2.4) Quality Assurance	- / 0.050	- / 0.051	- / 0.052	- / 0.052	- / -	- / 0.052	- / 0.053	- / 0.054	- / 0.055	- / 0.055	Continuing	Continuing	
Subtotal: Support	- / 0.953	- / 1.267	- / 1.244	- / 1.045	- / -	- / 1.045	- / 1.247	- / 1.046	- / 1.178	- / 1.202	Continuing	Continuing	
Installation													
Modification Item 1 of 1: SATC Modernization Kit Summary (MP054, MP055, MP056, MP057, MP058, MP059)	- / 2.559	- / 1.571	- / 2.411	- / 2.128	- / 0.000	- / 2.128	- / 4.345	- / 1.967	- / 3.683	- / 2.708	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9										P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment										Modification Number / Title: 1 / SATC Modernization Kit Summary (MP054, MP055, MP056, MP057, MP058, MP059)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: SATC Modernization Kit Summary (MP054, MP055, MP056, MP057, MP058, MP059)																															
Manufacturer Information																															
Manufacturer Name: NAWCAD															Manufacturer Location: Patuxent River, MD																
Administrative Leadtime (in Months): 7															Production Leadtime (in Months): 6																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates		Apr 2018				Apr 2019				Apr 2020				Apr 2021				Apr 2022				Apr 2023				Apr 2024					
Delivery Dates		Oct 2018				Oct 2019				Oct 2020				Oct 2021				Oct 2022				Oct 2023				Oct 2024					
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: (MP054)TPX-42 UPG, FC4 (Recorders)																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		6 / 0.300		6 / 0.317		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		12 / 0.617							
FY 2018		- / -		- / -		2 / 0.115		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 0.115							
FY 2019		- / -		- / -		- / -		6 / 0.675		0 / 0.000		6 / 0.675		- / -		- / -		- / -		- / -		0 / 0.000		6 / 0.675							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		5 / 0.574		- / -		- / -		- / -		0 / 0.000		5 / 0.574							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		6 / 0.300		6 / 0.317		2 / 0.115		6 / 0.675		0 / 0.000		6 / 0.675		5 / 0.574		- / -		- / -		- / -		0 / 0.000		25 / 1.981							
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	6	-	2	2	2	-	1	1	-	2	2	2	-	2	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-		
Out	6	-	2	2	2	-	1	1	-	2	2	2	-	2	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-		

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment	Modification Number / Title: 1 / SATC Modernization Kit Summary (MP054, MP055, MP056, MP057, MP058, MP059)

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:

Modification Item 1 of 1: SATC Modernization Kit Summary (MP054, MP055, MP056, MP057, MP058, MP059)

Installation Information

Method of Implementation: AIT:: Installation Name: (MP055) TPX-42 UPG, FC5

Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	3 / 0.274	3 / 0.289	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	6 / 0.563
FY 2018	- / -	- / -	2 / 0.196	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 0.196
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	3 / 0.274	3 / 0.289	2 / 0.196	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	8 / 0.759

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	3	1	1	1	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
Out	3	1	1	1	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8

Method of Implementation: [none specified]:: Installation Name: (MP056) TPX-42 Embedded Trainer

Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	5 / 0.845	6 / 0.965	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	11 / 1.810
FY 2018	- / -	- / -	3 / 1.300	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 1.300
FY 2019	- / -	- / -	- / -	1 / 0.442	0 / 0.000	1 / 0.442	- / -	- / -	- / -	- / -	0 / 0.000	1 / 0.442
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.897	- / -	- / -	- / -	0 / 0.000	2 / 0.897
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment	Modification Number / Title: 1 / SATC Modernization Kit Summary (MP054, MP055, MP056, MP057, MP058, MP059)

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:

Modification Item 1 of 1: SATC Modernization Kit Summary (MP054, MP055, MP056, MP057, MP058, MP059)

Installation Information

Method of Implementation: [none specified]:: Installation Name: (MP056) TPX-42 Embedded Trainer

Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	5 / 0.845	6 / 0.965	3 / 1.300	1 / 0.442	0 / 0.000	1 / 0.442	2 / 0.897	- / -	- / -	- / -	0 / 0.000	17 / 4.449

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	5	-	2	2	2	-	1	1	1	-	-	1	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17
Out	5	-	2	2	2	-	1	1	1	-	-	1	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17

Method of Implementation: [none specified]:: Installation Name: (MP057) TPX-42 Embedded Trainer Final Control

Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	7 / 0.378	0 / 0.000	7 / 0.378	- / -	- / -	- / -	- / -	0 / 0.000	7 / 0.378
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	6 / 0.329	- / -	- / -	- / -	0 / 0.000	6 / 0.329
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.712	- / -	- / -	0 / 0.000	5 / 0.712
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	7 / 1.135	- / -	0 / 0.000	7 / 1.135
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	- / -	7 / 0.378	0 / 0.000	7 / 0.378	6 / 0.329	5 / 0.712	7 / 1.135	- / -	0 / 0.000	25 / 2.554

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Exhibit P-3a, Individual Modification: PB 2020 Navy																						Date: March 2019											
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9											P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment											Modification Number / Title: 1 / SATC Modernization Kit Summary (MP054, MP055, MP056, MP057, MP058, MP059)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																		
Modification Item 1 of 1: SATC Modernization Kit Summary (MP054, MP055, MP056, MP057, MP058, MP059)																																	
Installation Information																																	
Method of Implementation: [none specified]:: Installation Name: (MP057) TPX-42 Embedded Trainer Final Control																																	
Installation Schedule																																	
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024							
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot		
In	-	-	-	-	-	-	-	-	-	2	3	2	-	2	2	2	-	-	-	1	2	2	-	2	2	3	-	-	-	-	-	-	25
Out	-	-	-	-	-	-	-	-	-	2	3	2	-	2	2	2	-	-	-	1	2	2	-	2	2	3	-	-	-	-	-	-	25
Method of Implementation: AIT:: Installation Name: (MP058) TPX-42 Multi-Function Console																																	
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total									
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)									
Prior Years		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2018		- / -		- / -		1 / 0.500		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		1 / 0.500							
FY 2019		- / -		- / -		- / -		1 / 0.609		0 / 0.000		1 / 0.609		2 / 1.236		- / -		- / -		- / -		- / -		0 / 0.000		3 / 1.845							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		2 / 1.236		1 / 0.627		- / -		- / -		- / -		0 / 0.000		3 / 1.863							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 0.628		1 / 0.637		- / -		- / -		0 / 0.000		2 / 1.265							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		3 / 1.911		1 / 0.646		0 / 0.000		4 / 2.557									
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		3 / 1.939		0 / 0.000		3 / 1.939							
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		2 / 1.604		2 / 1.604							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		7 / 5.075		7 / 5.075							
Total		- / -		- / -		1 / 0.500		1 / 0.609		0 / 0.000		1 / 0.609		4 / 2.472		2 / 1.255		4 / 2.548		4 / 2.585		9 / 6.679		25 / 16.648									
Installation Schedule																																	
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024							
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot		
In	-	-	-	-	-	-	-	1	-	-	1	-	-	2	2	-	-	1	1	-	-	1	1	1	1	1	1	1	1	9	25		
Out	-	-	-	-	-	-	-	1	-	-	1	-	-	2	2	-	-	1	1	-	-	1	1	1	1	1	1	1	1	9	25		

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment	Modification Number / Title: 1 / SATC Modernization Kit Summary (MP054, MP055, MP056, MP057, MP058, MP059)

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:

Modification Item 1 of 1: SATC Modernization Kit Summary (MP054, MP055, MP056, MP057, MP058, MP059)

Installation Information

Method of Implementation: AIT:: Installation Name: (MP059) TPX-42 ECP Upgrades

Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	6 / 1.140	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	6 / 1.140
FY 2018	- / -	- / -	1 / 0.300	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	1 / 0.300
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	1 / 0.024	0 / 0.000	1 / 0.024	- / -	- / -	- / -	- / -	0 / 0.000	1 / 0.024
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.073	- / -	- / -	- / -	0 / 0.000	1 / 0.073
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.123	Continuing	Continuing
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	- / -
Total	6 / 1.140	- / -	1 / 0.300	1 / 0.024	0 / 0.000	1 / 0.024	1 / 0.073	- / -	- / -	1 / 0.123	Continuing	Continuing

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	6	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	5	15	
Out	6	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	5	15	

Footnotes:

- (1) MP054 TPX-42 UPG, FC4: Inventory Objective is 25. 4 procurements and 4 installations were funded prior to FY17 and are reflected in BLI 2831.
- (2) MP055 TPX-42 UPG, FC5 Inventory objective is 8. 14 procurements and 14 installations were funded prior to FY17 and are reflected in BLI 2831.
- (3) MP056 TPX-42 Embedded Trainer: Inventory Objective is 17. 8 procurements and 8 installations were funded prior to FY17 and are reflected in BLI 2831.
- (4) MP057 TPX-42 Embedded Trainer Final Control: Inventory Objective is 25.
- (5) MP058 TPX-42 Multi-Function Console: Inventory Objective is 25. The Multi-Function Console (MFC) provides a common human interface for all ATC workstations that includes complete upgrades of software and hardware to support new radar sensors that will reduce operational costs and improve reliability. This item is currently in development and is reflected in the RDT&E Budget (PE 0604504N Air Control/Project Unit 0993). FY2018 will be the first procurement and the government will own the software. Many of the other items in this P-3a are Engineering Change Proposals to resolve obsolescence issues. One system consists of OD/220 controller consoles, OL/541 racks and MT7326 power distribution racks. The OL/541 and MT7326 are common between CVNs and LHD/LHAs, OD/220s however vary between the type of ship, there are 5 OD/220s on CVNs and 8 OD/220s on LHA/Ds. The increased install cost from FY19 to FY20 is due to FY19 going to the schoolhouse and therefore costing less.
- (6) MP059 TPX-42 ECP Upgrades: 4 procurements and 4 installations were funded prior to FY17 and are reflected in BLI 2831. Each ECP will have unique unit cost and install cost associated with it.

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9				P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment						Modification Number / Title: 2 / ACLS MOD KITS SUMMARY PN408		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	7.028	13.516	15.745	14.580	0.000	14.580	15.992	16.877	22.627	20.658	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	7.028	13.516	15.745	14.580	0.000	14.580	15.992	16.877	22.627	20.658	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	7.028	13.516	15.745	14.580	0.000	14.580	15.992	16.877	22.627	20.658	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: The equipment and installation costs on this P-3a are for individual modification programs for AN/SPN-35/41/46 and FRN-49 systems. Funding has also been provided for upgrades addressing broadened cyber-security requirements to remain compliant with software cyber-security directives and Information Assurance mandates. Line item "Engineering Changes to Correct Deficiencies" captures anticipated emergent engineering changes. PMA213 configuration control board approves inventory objectives. Contract and Delivery dates are various.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy									Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9				P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment					Modification Number / Title: 2 / ACLS MOD KITS SUMMARY PN408				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: CVNs, LHA/LHD class ship, and selected shore sites				Modification Type: Modernization					Related RDT&E PEs:				
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: ACLS MOD KITS SUMMARY PN408													
B Kits													
Non-Recurring													
1.1.1) AN/SPN-46 TS-4176 - NonOrganic		8 / 0.800	1 / 0.200	3 / 0.600	- / -	- / -	- / -	- / -	- / -	- / -	- / -	12 / 1.600	
1.1.3) AN/SPN-46 COTS Refresh - NonOrganic ⁽⁷⁾		2 / 0.510	18 / 4.108	10 / 2.370	10 / 2.417	- / -	10 / 2.417	6 / 1.470	6 / 1.500	6 / 1.530	7 / 1.555	65 / 15.460	
1.1.4) AN/SPN-46 Obsolescence - NonOrganic		4 / 0.876	10 / 2.743	10 / 2.964	5 / 1.543	- / -	5 / 1.543	12 / 4.397	12 / 4.246	- / -	- / -	53 / 16.769	
1.1.14) AN/SPN-35 Receiver Transmitter Mod - NonOrganic		4 / 0.056	1 / 0.028	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.084	
1.1.16) AN/SPN-46 Unit 16 Power Supply - NonOrganic		- / -	- / -	3 / 0.552	3 / 0.561	- / -	3 / 0.561	4 / 0.764	3 / 0.582	3 / 0.585	- / -	16 / 3.044	
1.1.17) AN/SPN-46 Block V - NonOrganic		- / -	- / -	- / -	- / -	- / -	- / -	2 / 2.500	6 / 7.539	3 / 3.843	5 / 6.406	16 / 20.288	
1.1.18) AN/SPN-35 Block II - NonOrganic		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 9.197	15 / 91.226	16 / 100.423	
1.1.19) AN/FRN-49 Instrument Carrier Landing Systems (ICLS) - NonOrganic		1 / 1.640	1 / 1.670	2 / 3.368	2 / 3.469	- / -	2 / 3.469	- / -	- / -	- / -	- / -	6 / 10.147	
Subtotal: Non-Recurring		- / 3.882	- / 8.749	- / 9.854	- / 7.990	- / -	- / 7.990	- / 6.631	- / 8.828	- / 9.654	- / 14.595	- / 97.632	
Subtotal: ACLS MOD KITS SUMMARY PN408		19 / 3.882	31 / 8.749	28 / 9.854	20 / 7.990	- / -	20 / 7.990	22 / 6.631	23 / 8.828	15 / 9.654	11 / 14.595	189 / 167.815	
Subtotal: Procurement, All Modification Items		- / 3.882	- / 8.749	- / 9.854	- / 7.990	- / -	- / 7.990	- / 6.631	- / 8.828	- / 9.654	- / 14.595	- / 97.632	
Support (All Modification Items)													
2.1) Engineering Changes to Correct Deficiencies ECO SPN-46 ⁽⁸⁾		- / 0.400	- / 0.469	- / 1.069	- / -	- / -	- / -	- / 2.971	- / 1.198	- / 1.166	- / 1.189	Continuing	
2.2) Engineering Changes to Correct Deficiencies ECO SPN-35/41		- / 0.589	- / 0.736	- / -	- / -	- / -	- / -	- / 0.594	- / 1.039	- / 2.971	- / -	Continuing	
2.3) Integrated Logistics Support ⁽⁹⁾		- / 0.457	- / 0.780	- / 0.568	- / 0.459	- / -	- / 0.459	- / 0.473	- / 0.482	- / 1.413	- / 0.958	Continuing	
2.4) Production Engineering ⁽¹⁰⁾		- / 0.607	- / 1.840	- / 1.878	- / 2.131	- / -	- / 2.131	- / 2.060	- / 1.948	- / 5.300	- / 1.951	Continuing	
2.5) Quality Assurance		- / 0.102	- / -	- / 0.106	- / 0.178	- / -	- / 0.178	- / 0.109	- / 0.111	- / 0.111	- / -	Continuing	
2.6) Acceptance, Test and Evaluation		- / 0.030	- / -	- / -	- / 0.030	- / -	- / 0.030	- / 0.029	- / -	- / -	- / -	- / 0.089	
Subtotal: Support		- / 2.185	- / 3.825	- / 3.621	- / 2.798	- / -	- / 2.798	- / 6.236	- / 4.778	- / 10.961	- / 4.098	Continuing	
Installation													
Modification Item 1 of 1: ACLS MOD KITS SUMMARY PN408		- / 0.961	- / 0.942	- / 2.270	- / 3.792	- / 0.000	- / 3.792	- / 3.125	- / 3.271	- / 2.012	- / 1.965	- / 13.284	
Subtotal: Installation		- / 0.961	- / 0.942	- / 2.270	- / 3.792	- / -	- / 3.792	- / 3.125	- / 3.271	- / 2.012	- / 1.965	- / 13.284	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9				P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment						Modification Number / Title: 2 / ACLS MOD KITS SUMMARY PN408			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: CVNs, LHA/LHD class ship, and selected shore sites				Modification Type: Modernization					Related RDT&E PEs:				
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Total													
Total Cost (Procurement + Support + Installation)	7.028	13.516	15.745	14.580	0.000	14.580	15.992	16.877	22.627	20.658	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy											Date: March 2019																								
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9											P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment											Modification Number / Title: 2 / ACLS MOD KITS SUMMARY PN408													
ID Code (A=Service Ready, B=Not Service Ready) :											MDAP/MAIS Code:																								
Modification Item 1 of 1: ACLS MOD KITS SUMMARY PN408																																			
Manufacturer Information																																			
Manufacturer Name: NAWCAD											Manufacturer Location: Patuxent River, MD																								
Administrative Leadtime (in Months): 3											Production Leadtime (in Months): 12																								
Dates	FY 2018					FY 2019					FY 2020					FY 2021					FY 2022					FY 2023					FY 2024				
Contract Dates	Dec 2017					Dec 2018					Dec 2019					Dec 2020					Dec 2021					Dec 2022					Dec 2023				
Delivery Dates	Dec 2018					Dec 2019					Dec 2020					Dec 2021					Dec 2022					Dec 2023					Dec 2024				
Installation Information																																			
Method of Implementation: AIT (Alteration Installation Team):: Installation Name: ACLS Mod Kits																																			
Installation Cost		Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total																						
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																						
Prior Years		6 / 0.961	12 / 0.942	- / -	1 / 0.570	0 / 0.000	1 / 0.570	- / -	- / -	- / -	- / -	0 / 0.000	19 / 2.473																						
FY 2018		- / -	- / -	30 / 2.270	1 / 0.570	0 / 0.000	1 / 0.570	- / -	- / -	- / -	- / -	0 / 0.000	31 / 2.840																						
FY 2019		- / -	- / -	- / -	26 / 2.652	0 / 0.000	26 / 2.652	2 / 1.708	- / -	- / -	- / -	0 / 0.000	28 / 4.360																						
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	18 / 1.417	2 / 1.210	- / -	- / -	0 / 0.000	20 / 2.627																						
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	22 / 2.061	- / -	- / -	0 / 0.000	22 / 2.061																						
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	23 / 2.012	- / -	0 / 0.000	23 / 2.012																						
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	9 / 1.965	6 / 1.753	15 / 3.718																						
FY 2024		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 2.636	10 / 2.636																						
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 2.303	5 / 2.303																						
Total		6 / 0.961	12 / 0.942	30 / 2.270	28 / 3.792	0 / 0.000	28 / 3.792	20 / 3.125	24 / 3.271	23 / 2.012	9 / 1.965	21 / 6.692	173 / 25.030																						
Installation Schedule																																			
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot				
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4						
In	6	-	6	6	-	-	13	14	3	1	16	10	1	1	8	7	4	1	12	11	-	1	10	11	1	-	-	5	4	21	173				
Out	6	-	6	6	-	-	13	14	3	1	16	10	1	1	8	7	4	1	12	11	-	1	10	11	1	-	-	5	4	21	173				
Method of Implementation: [none specified]:: Installation Name: AN/SPN-35 Block II																																			
Installation Cost		Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total																						
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																						
Prior Years		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																						

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9										P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment										Modification Number / Title: 2 / ACLS MOD KITS SUMMARY PN408											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: ACLS MOD KITS SUMMARY PN408																															
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: AN/SPN-35 Block II																															
Installation Cost		Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total																		
		<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>																	
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Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	16
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	16
Footnotes: ⁽⁷⁾ The variance in kit costs from year to year is due to the makeup of the different equipment being installed each year, the different hull types receiving modifications, and the different Design Services Allocation (DSA) and install costs from different locations depending on where modifications are performed. ⁽⁸⁾ Increased funding in FY21 is required to correct anticipated deficiencies leading up to the Block V Upgrade beginning in FY22. Several SPN-46 subassemblies are rapidly becoming unsustainable and this will mitigate risk until the next upgrade is introduced. ⁽⁹⁾ ILS increase in FY23 accounts for SPN-46 Block V support. ⁽¹⁰⁾ Several SPN-46 subassemblies are rapidly becoming unsustainable due primarily to component obsolescence. Increased production engineering will be required in support of future, approved ECP efforts to mitigate these issues and keep the SPN-46 viable to support Warfighter ACLS operations. PE increase in FY23 accounts for SPN-46 Block V support.																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9					P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment					Modification Number / Title: 3 / AN/SPN-46 (V)3 Radar Set Group PN413		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	6.219	5.292	3.384	0.791	0.000	0.791	0.000	0.000	0.000	0.000	0.000	15.686
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	6.219	5.292	3.384	0.791	0.000	0.791	0.000	0.000	0.000	0.000	0.000	15.686
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	6.219	5.292	3.384	0.791	0.000	0.791	0.000	0.000	0.000	0.000	0.000	15.686
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Description: The equipment and installation costs are for individual modifications as part of the AN/SPN-46 Life Cycle Extension program. The current AN/SPN-46 receiver houses both Ka and X-band components that are densely packaged and RF components that are obsolete technology and are no longer manufactured. The Radar Set Group re-packages the RF components using more modern and smaller components making the unit able to be supported and maintained. The inventory objective for this item is 13, of which 11 are OPN-funded and 2 SCN-funded.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9					P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment					Modification Number / Title: 3 / AN/SPN-46 (V)3 Radar Set Group PN413			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: CVNs and selected shore sites				Modification Type: Reliability				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: AN/SPN-46 (V)3 Radar Set Group PN413													
B Kits													
Recurring													
2.1.1) AN/SPN-46 (V)3 Radar Set Group PN413 - NonOrganic ⁽¹¹⁾	5 / 2.641	2 / 2.695	1 / 1.372	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	8 / 6.708	
Subtotal: Recurring	- / 2.641	- / 2.695	- / 1.372	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 6.708	
Subtotal: AN/SPN-46 (V)3 Radar Set Group PN413	5 / 2.641	2 / 2.695	1 / 1.372	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	8 / 6.708	
Subtotal: Procurement, All Modification Items	- / 2.641	- / 2.695	- / 1.372	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 6.708	
Support (All Modification Items)													
3.1) Integrated Logistic Support	- / 0.063	- / 0.005	- / 0.048	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.116	
3.2) Production Engineering	- / 1.502	- / 0.027	- / 0.385	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.914	
3.3) Acceptance Test & Evaluation	- / 0.214	- / 0.300	- / 0.025	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.539	
Subtotal: Support	- / 1.779	- / 0.332	- / 0.458	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 2.569	
Installation													
Modification Item 1 of 1: AN/SPN-46 (V)3 Radar Set Group PN413	- / 1.799	- / 2.265	- / 1.554	- / 0.791	- / 0.000	- / 0.791	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 6.409	
Subtotal: Installation	- / 1.799	- / 2.265	- / 1.554	- / 0.791	- / -	- / 0.791	- / -	- / -	- / -	- / -	- / 0.000	- / 6.409	
Total													
Total Cost (Procurement + Support + Installation)	6.219	5.292	3.384	0.791	0.000	0.791	0.000	0.000	0.000	0.000	0.000	15.686	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9										P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment										Modification Number / Title: 3 / AN/SPN-46 (V)3 Radar Set Group PN413											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: AN/SPN-46 (V)3 Radar Set Group PN413																															
Manufacturer Information																															
Manufacturer Name: NAWCAD															Manufacturer Location: Patuxent River, MD																
Administrative Leadtime (in Months): 3															Production Leadtime (in Months): 12																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates		Dec 2017				Dec 2018																									
Delivery Dates		Dec 2018				Dec 2019																									
Installation Information																															
Method of Implementation: Alteration Installation Team (AIT):: Installation Name: AN/SPN-46 (V)3 Radar Set Group PN413																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		3 / 1.799		2 / 2.265		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		5 / 4.064					
FY 2018		- / -		- / -		2 / 1.554		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 1.554					
FY 2019		- / -		- / -		- / -		1 / 0.791		0 / 0.000		1 / 0.791		- / -		- / -		- / -		- / -		- / -		0 / 0.000		1 / 0.791					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
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Total		3 / 1.799		2 / 2.265		2 / 1.554		1 / 0.791		0 / 0.000		1 / 0.791		- / -		- / -		- / -		- / -		- / -		0 / 0.000		8 / 6.409					
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	3	-	1	1	-	-	1	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
Out	3	-	1	1	-	-	1	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
Footnotes:																															
⁽¹¹⁾ Inventory objective is 13, of which 11 are OPN-funded and 2 SCN-funded. Note - The auxiliary hardware required varies slightly depending on what past modifications have already been incorporated into the old chassis being upgraded to the new RSG. 6 of the 11 OPN funded were procured prior to FY2017 under BLI 2832 and 3 of those 6 were installed prior to FY2017 under BLI 2832.																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9					P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment					Modification Number / Title: 4 / AN/SPN-41 Transmitter MOD (LCE) PN416		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	1.101	0.499	0.019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.619
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	1.101	0.499	0.019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.619
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	1.101	0.499	0.019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.619
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Description: AN/SPN-41 Transmitter MOD (LCE) PN416. The equipment and installation costs are for individual modification programs though it must be installed in conjunction with ECP SPN41-030 and SPN41-034 in order to be fully functional as part of the AN/SPN-41 Life Cycle Extension (LCE) program. The existing transmitter is an older technology two-channel Silicon Controlled Rectifier (SCR) line type modulator that is experiencing maintainability and obsolescence issues. The transmitter is the number one maintenance cost driver and system performance degrader. This change will improve logistic supportability and system maintainability. Line Repairable Units (LRUs) Circuit Card Assemblies (CCAs) and Built-In Test (BIT) capabilities will be incorporated in the transmitter thus reducing cost for shipboard repairs and maintenance.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9					P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment					Modification Number / Title: 4 / AN/SPN-41 Transmitter MOD (LCE) PN416			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: CVNs, LHA/LHD class ships, and selected shore sites					Modification Type: Modernization					Related RDT&E PEs:			
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: AN/SPN-41 Transmitter MOD (LCE) PN416													
B Kits													
Recurring													
2.1.1) AN/SPN-41 Transmitter Replacement (LCE) - NonOrganic ⁽¹²⁾	5 / 0.903	1 / 0.255	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 1.158	
Subtotal: Recurring	- / 0.903	- / 0.255	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 1.158	
Subtotal: AN/SPN-41 Transmitter MOD (LCE) PN416	5 / 0.903	1 / 0.255	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 1.158	
Subtotal: Procurement, All Modification Items	- / 0.903	- / 0.255	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 1.158	
Support (All Modification Items)													
3.1) Integrated Logistics	- / 0.031	- / 0.030	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.061	
3.2) Production Engineering	- / 0.142	- / 0.138	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.280	
Subtotal: Support	- / 0.173	- / 0.168	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 0.341	
Installation													
Modification Item 1 of 1: AN/SPN-41 Transmitter MOD (LCE) PN416	- / 0.025	- / 0.076	- / 0.019	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.120	
Subtotal: Installation	- / 0.025	- / 0.076	- / 0.019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 0.120	
Total													
Total Cost (Procurement + Support + Installation)	1.101	0.499	0.019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.619	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9										P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment										Modification Number / Title: 4 / AN/SPN-41 Transmitter MOD (LCE) PN416											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: AN/SPN-41 Transmitter MOD (LCE) PN416																															
Manufacturer Information																															
Manufacturer Name: NAWCAD															Manufacturer Location: Webster Field, St. Inigoes, MD																
Administrative Leadtime (in Months): 3															Production Leadtime (in Months): 12																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates		Dec 2017																													
Delivery Dates		Dec 2018																													
Installation Information																															
Method of Implementation: Alteration Installation Team:: Installation Name: AN/SPN-41 Transmitter Replacement (LCE)																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		1 / 0.025		4 / 0.076		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		5 / 0.101					
FY 2018		- / -		- / -		1 / 0.019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		1 / 0.019					
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
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FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
Total		1 / 0.025		4 / 0.076		1 / 0.019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		6 / 0.120					
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	1	4	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
Out	1	-	4	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
Footnotes:																															
⁽¹²⁾ AN/SPN-41 Transmitter MOD (LCE) inventory objective is 19. 14 procurements and 13 installations were funded through FY2016 on BLI 2832.																															

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9				P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment						Modification Number / Title: 5 / AN/SPN-41 Coder Monitor (LCE) PN417		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	1.023	0.981	0.614	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.618
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	1.023	0.981	0.614	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.618
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	1.023	0.981	0.614	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.618
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Description: AN/SPN-41 Coder Monitor (LCE) PN417. The equipment and installation costs are for individual modification programs though it must be installed in conjunction with ECP SPN41-030 and SPN41-031 in order to be fully functional as part of the AN/SPN-41/41A Life Cycle Extension program. This change will provide upgrades to AN/SPN-41/41A to improve Operational Availability (Ao) by addressing numerous part obsolescence issues germane to the current aging system. The change will also provide digital interfaces with other shipboard systems including the Joint Precision Approach Landing System (JPALS), and extend the service life of the AN/SPN-41/41A.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9				P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment						Modification Number / Title: 5 / AN/SPN-41 Coder Monitor (LCE) PN417			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: CVNs, LHA/LHD class ships, and selected shore sites				Modification Type: Modernization				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	
Procurement													
<i>Modification Item 1 of 1:</i> AN/SPN-41 Coder Monitor (LCE) PN417													
B Kits													
Recurring													
2.1.1) AN/SPN-41 Coder Monitor (LCE) - NonOrganic	2 / 0.207	1 / 0.207	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 0.414	
<i>Subtotal: Recurring</i>	- / 0.207	- / 0.207	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 0.414	
<i>Subtotal: AN/SPN-41 Coder Monitor (LCE) PN417</i>	2 / 0.207	1 / 0.207	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 0.414	
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.207	- / 0.207	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 0.414	
Support (All Modification Items)													
3.1) Integrated Logistic Support	- / 0.047	- / 0.032	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.079	
3.2) Production Engineering	- / 0.177	- / 0.140	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.317	
<i>Subtotal: Support</i>	- / 0.224	- / 0.172	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 0.396	
Installation													
<i>Modification Item 1 of 1:</i> AN/SPN-41 Coder Monitor (LCE) PN417	- / 0.592	- / 0.602	- / 0.614	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 1.808	
<i>Subtotal: Installation</i>	- / 0.592	- / 0.602	- / 0.614	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 1.808	
Total													
Total Cost (Procurement + Support + Installation)	1.023	0.981	0.614	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.618	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9										P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment										Modification Number / Title: 5 / AN/SPN-41 Coder Monitor (LCE) PN417											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: AN/SPN-41 Coder Monitor (LCE) PN417																															
Manufacturer Information																															
Manufacturer Name: NAWCAD															Manufacturer Location: St. Inigoes, MD																
Administrative Leadtime <i>(in Months)</i> : 3															Production Leadtime <i>(in Months)</i> : 12																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates		Dec 2017																													
Delivery Dates		Dec 2018																													
Installation Information																															
Method of Implementation: Alteration Installation Team AIT:: Installation Name: AN/SPN-41 Coder Monitor (LCE)																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		1 / 0.592		1 / 0.602		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 1.194					
FY 2018		- / -		- / -		1 / 0.614		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		1 / 0.614					
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
Total		1 / 0.592		1 / 0.602		1 / 0.614		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		3 / 1.808					
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	1	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
Out	1	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9					P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment					Modification Number / Title: 6 / AN/SPN-41 Electronic Drawer Assembly (LCE) PN418		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	2.534	1.392	1.581	0.800	0.000	0.800	0.000	0.000	0.000	0.000	0.000	6.307
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	2.534	1.392	1.581	0.800	0.000	0.800	0.000	0.000	0.000	0.000	0.000	6.307
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	2.534	1.392	1.581	0.800	0.000	0.800	0.000	0.000	0.000	0.000	0.000	6.307
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Description: AN/SPN-41 Electronic Drawer Assembly (LCE) PN418. The equipment and installation costs are for individual modification programs though it must be installed in conjunction with ECP SPN41-031 and SPN41-034 in order to be fully functional as part of the AN/SPN-41 Life Cycle Extension program. This change replaces obsolete analog interfaces with required digital interfaces to connect with other shipboard systems including the Joint Precision Approach Landing System (JPALS).												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9					P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment					Modification Number / Title: 6 / AN/SPN-41 Electronic Drawer Assembly (LCE) PN418			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: CVNs, LHA/LHD class ships, and selected shore sites					Modification Type: Modernization					Related RDT&E PEs:			
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: AN/SPN-41 Electronic Drawer Assembly (LCE) PN418													
B Kits													
Recurring													
2.1.1) AN/SPN-41 Electronic Drawer Assembly (LCE) - NonOrganic ⁽¹³⁾	6 / 1.712	- / -	2 / 1.289	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	8 / 3.001	
<i>Subtotal: Recurring</i>	- / 1.712	- / -	- / 1.289	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 3.001	
<i>Subtotal: AN/SPN-41 Electronic Drawer Assembly (LCE) PN418</i>	6 / 1.712	- / -	2 / 1.289	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	8 / 3.001	
<i>Subtotal: Procurement, All Modification Items</i>	- / 1.712	- / -	- / 1.289	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 3.001	
Support (All Modification Items)													
3.1) Integrated Logistics	- / 0.086	- / -	- / 0.086	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.172	
3.2) Production Engineering	- / 0.388	- / -	- / 0.206	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.594	
<i>Subtotal: Support</i>	- / 0.474	- / -	- / 0.292	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 0.766	
Installation													
Modification Item 1 of 1: AN/SPN-41 Electronic Drawer Assembly (LCE) PN418	- / 0.348	- / 1.392	- / 0.000	- / 0.800	- / 0.000	- / 0.800	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 2.540	
<i>Subtotal: Installation</i>	- / 0.348	- / 1.392	- / -	- / 0.800	- / -	- / 0.800	- / -	- / -	- / -	- / -	- / 0.000	- / 2.540	
Total													
Total Cost (Procurement + Support + Installation)	2.534	1.392	1.581	0.800	0.000	0.800	0.000	0.000	0.000	0.000	0.000	6.307	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9										P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment										Modification Number / Title: 6 / AN/SPN-41 Electronic Drawer Assembly (LCE) PN418											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: AN/SPN-41 Electronic Drawer Assembly (LCE) PN418																															
Manufacturer Information																															
Manufacturer Name: NAWCAD															Manufacturer Location: Webster Field, St. Inigoes, MD																
Administrative Leadtime (<i>in Months</i>): 3															Production Leadtime (<i>in Months</i>): 12																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates						Jan 2019																									
Delivery Dates						Dec 2019																									
Installation Information																															
Method of Implementation: Alteration Installation Team AIT:: Installation Name: AN/SPN-41 Electronic Drawer Assembly (LCE)																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (<i>Each</i>) / Total Cost (\$ <i>M</i>)		Qty (<i>Each</i>) / Total Cost (\$ <i>M</i>)		Qty (<i>Each</i>) / Total Cost (\$ <i>M</i>)		Qty (<i>Each</i>) / Total Cost (\$ <i>M</i>)		Qty (<i>Each</i>) / Total Cost (\$ <i>M</i>)		Qty (<i>Each</i>) / Total Cost (\$ <i>M</i>)		Qty (<i>Each</i>) / Total Cost (\$ <i>M</i>)		Qty (<i>Each</i>) / Total Cost (\$ <i>M</i>)		Qty (<i>Each</i>) / Total Cost (\$ <i>M</i>)		Qty (<i>Each</i>) / Total Cost (\$ <i>M</i>)		Qty (<i>Each</i>) / Total Cost (\$ <i>M</i>)									
Prior Years		2 / 0.348		4 / 1.392		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		6 / 1.740					
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2019		- / -		- / -		- / -		2 / 0.800		0 / 0.000		2 / 0.800		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 0.800					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
Total		2 / 0.348		4 / 1.392		- / -		2 / 0.800		0 / 0.000		2 / 0.800		- / -		- / -		- / -		- / -		- / -		0 / 0.000		8 / 2.540					
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	2	4	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
Out	2	-	-	4	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
Footnotes: ⁽¹³⁾ AN/SPN-41 Electronic Drawer Assembly (LCE) inventory objective is (20) with 14 procurements and 12 installations occurring in PY - FY16 are funded in BLI 2832. Inventory objective changed from 19 to 20 due to one of the original EDA units that was used, as intended, for initial system testing (including shock and vibe). When completed this type testing usually results in a unit that is damaged beyond acceptable repair. It should not have been counted as an End Item for installation in the Fleet once testing was completed.																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9				P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment						Modification Number / Title: 7 / AN/SPN-41 Radome Hardware Upgrade (LCE) PN419		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	1.692	0.121	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.813
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	1.692	0.121	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.813
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	1.692	0.121	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.813
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Description: AN/SPN-41 Radome Hardware Upgrade (LCE) PN419. The equipment and installation costs are for individual modification programs. This is part of the AN/SPN-41 Life Cycle Extension program. This change will improve overall AN/SPN-41/41A Operational Availability (Ao) by addressing extreme environmental issues currently being experienced by the systems in the field. This change increases overall thermal resistance while decreasing solar absorptivity thereby reducing the ambient operating temperature for the equipment inside the radome, prolonging component life and reducing failure rates.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9					P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment					Modification Number / Title: 7 / AN/SPN-41 Radome Hardware Upgrade (LCE) PN419			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: CVNs, LHA/LHD class ships, and selected shore sites					Modification Type: Modernization					Related RDT&E PEs:			
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
<i>Modification Item 1 of 1:</i> AN/SPN-41 Radome Hardware Upgrade (LCE) PN419													
B Kits													
Recurring													
2.1.1) AN/SPN-41 Radome Hardware Upgrade - NonOrganic	6 / 1.260	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 1.260	
<i>Subtotal: Recurring</i>	- / 1.260	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 1.260	
<i>Subtotal: AN/SPN-41 Radome Hardware Upgrade (LCE) PN419</i>	6 / 1.260	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 1.260	
<i>Subtotal: Procurement, All Modification Items</i>	- / 1.260	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 1.260	
Support (All Modification Items)													
3.1) Production Engineering	- / 0.278	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.278	
3.2) Logistics	- / 0.034	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.034	
<i>Subtotal: Support</i>	- / 0.312	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 0.312	
Installation													
<i>Modification Item 1 of 1:</i> AN/SPN-41 Radome Hardware Upgrade (LCE) PN419	- / 0.120	- / 0.121	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.241	
<i>Subtotal: Installation</i>	- / 0.120	- / 0.121	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 0.241	
Total													
Total Cost (Procurement + Support + Installation)	1.692	0.121	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.813	

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Exhibit P-3a, Individual Modification: PB 2020 Navy											Date: March 2019																				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9										P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment										Modification Number / Title: 7 / AN/SPN-41 Radome Hardware Upgrade (LCE) PN419											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: AN/SPN-41 Radome Hardware Upgrade (LCE) PN419																															
Manufacturer Information																															
Manufacturer Name: NAWCAD														Manufacturer Location: St. Inigoes, MD																	
Administrative Leadtime (in Months): 3														Production Leadtime (in Months): 12																	
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates																															
Delivery Dates																															
Installation Information																															
Method of Implementation: Alteration Installation Team AIT:: Installation Name: AN/SPN-41 Radome Hardware Upgrade																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		3 / 0.120		3 / 0.121		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		6 / 0.241					
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
Total		3 / 0.120		3 / 0.121		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		6 / 0.241					
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	3	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
Out	3	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment	Modification Number / Title: 8 / AN/SPN-46 Block IV (PN420)

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	1.329	6.820	16.479	18.448	0.000	18.448	18.550	17.796	12.828	12.969	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	1.329	6.820	16.479	18.448	0.000	18.448	18.550	17.796	12.828	12.969	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	1.329	6.820	16.479	18.448	0.000	18.448	18.550	17.796	12.828	12.969	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The AN/SPN-46 Block IV Precision Approach Landing System (PALS) Block IV upgrade is designed to correct known obsolescence issues in the antenna pedestal, 50KW Ka band modulator/transmitter, and various Circuit Card Assemblies (CCAs). This effort is designed to extend the supportability of the AN/SPN-46 beyond its current design life that has been exceeded. If this effort is not accomplished, replacement parts will not be available to support the fielded AN/SPN-46 systems, thereby, negatively affecting Operational Availability (Ao) and safety of flight on the aircraft carrier. Each BLK IV will be comprised of the upgraded ACIO CCA, 2500 CCA, Transmitter, and Pedestal.

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9					P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment					Modification Number / Title: 8 / AN/SPN-46 Block IV (PN420)			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: CVNs and selected shore sites				Modification Type: TBD				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
<i>Modification Item 1 of 1:</i> AN/SPN-46 Block IV (PN420)													
B Kits													
Recurring													
1.1.1) AN/SPN-46 Block IV - NonOrganic	- / -	1 / 5.017	3 / 12.897	3 / 13.155	- / -	3 / 13.155	3 / 13.419	3 / 13.686	2 / 9.393	2 / 10.250	- / -	17 / 77.817	
<i>Subtotal: Recurring</i>	- / 0.000	- / 5.017	- / 12.897	- / 13.155	- / -	- / 13.155	- / 13.419	- / 13.686	- / 9.393	- / 10.250	- / 0.000	- / 77.817	
<i>Subtotal: AN/SPN-46 Block IV (PN420)</i>	- / -	1 / 5.017	3 / 12.897	3 / 13.155	- / -	3 / 13.155	3 / 13.419	3 / 13.686	2 / 9.393	2 / 10.250	- / -	17 / 77.817	
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.000	- / 5.017	- / 12.897	- / 13.155	- / -	- / 13.155	- / 13.419	- / 13.686	- / 9.393	- / 10.250	- / 0.000	- / 77.817	
Support (All Modification Items)													
2.1) Integrated Logistics Support ⁽¹⁴⁾	- / 0.514	- / 0.700	- / 1.050	- / 1.340	- / -	- / 1.340	- / 1.022	- / 0.854	- / 0.599	- / 0.572	Continuing	Continuing	
2.2) Production Engineering	- / 0.815	- / 0.853	- / 1.176	- / 1.200	- / -	- / 1.200	- / 1.227	- / 0.937	- / 0.676	- / 0.690	Continuing	Continuing	
2.3) Quality Assurance	- / -	- / 0.250	- / 0.255	- / 0.260	- / -	- / 0.260	- / 0.265	- / 0.270	- / 0.142	- / -	Continuing	Continuing	
2.4) Acceptance Test and Evaluation	- / -	- / -	- / -	- / 0.254	- / -	- / 0.254	- / 0.256	- / 0.265	- / 0.203	- / 0.207	Continuing	Continuing	
<i>Subtotal: Support</i>	- / 1.329	- / 1.803	- / 2.481	- / 3.054	- / -	- / 3.054	- / 2.770	- / 2.326	- / 1.620	- / 1.469	Continuing	Continuing	
Installation													
<i>Modification Item 1 of 1:</i> AN/SPN-46 Block IV (PN420)	- / 0.000	- / 0.000	- / 1.101	- / 2.239	- / 0.000	- / 2.239	- / 2.361	- / 1.784	- / 1.815	- / 1.250	- / 1.300	- / 11.850	
<i>Subtotal: Installation</i>	- / 0.000	- / -	- / 1.101	- / 2.239	- / -	- / 2.239	- / 2.361	- / 1.784	- / 1.815	- / 1.250	- / 1.300	- / 11.850	
Total													
Total Cost (Procurement + Support + Installation)	1.329	6.820	16.479	18.448	0.000	18.448	18.550	17.796	12.828	12.969	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy											Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9											P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment											Modification Number / Title: 8 / AN/SPN-46 Block IV (PN420)										
ID Code (A=Service Ready, B=Not Service Ready) :											MDAP/MAIS Code:																					
Modification Item 1 of 1: AN/SPN-46 Block IV (PN420)																																
Manufacturer Information																																
Manufacturer Name: Sierra Nevada Corporation													Manufacturer Location: Sierra, Nevada																			
Administrative Leadtime <i>(in Months)</i> : 4													Production Leadtime <i>(in Months)</i> : 12																			
Dates		FY 2018			FY 2019			FY 2020			FY 2021			FY 2022			FY 2023			FY 2024												
Contract Dates		Jan 2018			Jan 2019			Jan 2020			Jan 2021			Jan 2022			Jan 2023			Jan 2024												
Delivery Dates		Jan 2019			Jan 2020			Jan 2021			Jan 2022			Jan 2023			Jan 2024			Jan 2025												
Installation Information																																
Method of Implementation: Method:: Installation Name: Installation Group Name																																
Installation Cost		Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total									
		<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>									
Prior Years		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2018		- / -	- / -		1 / 1.101		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		1 / 1.101							
FY 2019		- / -	- / -		- / -		3 / 2.239		0 / 0.000		3 / 2.239		- / -		- / -		- / -		- / -		- / -		0 / 0.000		3 / 2.239							
FY 2020		- / -	- / -		- / -		- / -		- / -		- / -		3 / 2.361		- / -		- / -		- / -		- / -		0 / 0.000		3 / 2.361							
FY 2021		- / -	- / -		- / -		- / -		- / -		- / -		- / -		3 / 1.784		- / -		- / -		- / -		0 / 0.000		3 / 1.784							
FY 2022		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		3 / 1.815		- / -		- / -		0 / 0.000		3 / 1.815							
FY 2023		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		2 / 1.250		0 / 0.000		2 / 1.250							
FY 2024		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		2 / 1.300		2 / 1.300							
To Complete		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		- / -	- / -		1 / 1.101		3 / 2.239		0 / 0.000		3 / 2.239		3 / 2.361		3 / 1.784		3 / 1.815		2 / 1.250		2 / 1.300		17 / 11.850									
Installation Schedule																																
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot	
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
In	-	-	-	-	-	-	1	-	-	-	2	1	-	-	2	1	-	-	1	1	1	-	1	2	-	-	-	2	-	2	17	
Out	-	-	-	-	-	-	1	-	-	-	2	1	-	-	2	1	-	-	1	1	1	-	1	2	-	-	-	2	-	2	17	
Footnotes: ⁽¹⁴⁾ ILS increase in FY20 is due to identifying projected system installation requirements, modification adjustments, preparation for integration planning, and drawing support efforts for increased number of installations.																																

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Exhibit P-3a, Individual Modification: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9				P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment					Modification Number / Title: 9 / AN/SPN-35 Block I (PN421)			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	0.000	1.475	5.942	0.000	5.942	8.475	8.362	8.474	12.180	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	0.000	1.475	5.942	0.000	5.942	8.475	8.362	8.474	12.180	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	0.000	1.475	5.942	0.000	5.942	8.475	8.362	8.474	12.180	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

This modification upgrades the AN/SPN-35C to Block 1. AN/SPN-35C is the Precision Approach Radar aboard LHA/LHD class ships and is used for Mode III aircraft recovery which ensures the safe approach and landing of fixed-wing aircraft and various helicopters during adverse weather & night conditions. The AN/SPN-35C Block I upgrade includes replacement of common failure items, obsolete components, and analog system components. Block I will ensure the availability of, and extend the service life of the AN/SPN-35. The inventory objective for this item is 16. PMA-213 configuration control board approves inventory objectives.

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9				P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment				Modification Number / Title: 9 / AN/SPN-35 Block I (PN421)					
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: LHA/LHD class ships				Modification Type: TBD				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: AN/SPN-35 Block I (PN421)													
B Kits													
Recurring													
2.1.1) AN/SPN-35 Block I - NonOrganic	- / -	- / -	- / -	2 / 3.153	- / -	2 / 3.153	3 / 4.831	3 / 4.932	3 / 5.036	5 / 8.569	- / -	16 / 26.521	
Subtotal: Recurring	- / 0.000	- / -	- / -	- / 3.153	- / -	- / 3.153	- / 4.831	- / 4.932	- / 5.036	- / 8.569	- / 0.000	- / 26.521	
Subtotal: AN/SPN-35 Block I (PN421)	- / -	- / -	- / -	2 / 3.153	- / -	2 / 3.153	3 / 4.831	3 / 4.932	3 / 5.036	5 / 8.569	- / -	16 / 26.521	
Subtotal: Procurement, All Modification Items	- / 0.000	- / -	- / -	- / 3.153	- / -	- / 3.153	- / 4.831	- / 4.932	- / 5.036	- / 8.569	- / 0.000	- / 26.521	
Support (All Modification Items)													
3.1) Integrated Logistics ⁽¹⁵⁾	- / -	- / -	- / 0.450	- / 1.106	- / -	- / 1.106	- / 1.129	- / 0.397	- / 0.406	- / 0.414	- / 0.423	- / 4.325	
3.2) Production Engineering ⁽¹⁶⁾	- / -	- / -	- / 1.025	- / 1.658	- / -	- / 1.658	- / 1.666	- / 1.672	- / 1.706	- / 1.778	Continuing	Continuing	
3.3) Quality Assurance	- / -	- / -	- / -	- / 0.025	- / -	- / 0.025	- / 0.065	- / 0.066	- / 0.068	- / 0.069	Continuing	Continuing	
Subtotal: Support	- / 0.000	- / -	- / 1.475	- / 2.789	- / -	- / 2.789	- / 2.860	- / 2.135	- / 2.180	- / 2.261	Continuing	Continuing	
Installation													
Modification Item 1 of 1: AN/SPN-35 Block I (PN421)	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.784	- / 1.295	- / 1.258	- / 1.350	- / 2.316	- / 7.003	
Subtotal: Installation	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / 0.784	- / 1.295	- / 1.258	- / 1.350	- / 2.316	- / 7.003	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	1.475	5.942	0.000	5.942	8.475	8.362	8.474	12.180	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9										P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment										Modification Number / Title: 9 / AN/SPN-35 Block I (PN421)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: AN/SPN-35 Block I (PN421)																															
Manufacturer Information																															
Manufacturer Name: NAWCAD															Manufacturer Location: St. Inigoes, MD																
Administrative Leadtime <i>(in Months)</i> : 3															Production Leadtime <i>(in Months)</i> : 12																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates										Dec 2019				Dec 2020				Dec 2021				Dec 2022				Dec 2023					
Delivery Dates										Dec 2020				Dec 2021				Dec 2022				Dec 2023				Dec 2024					
Installation Information																															
Method of Implementation: Alteration Installation Team AIT:: Installation Name: AN/SPN-35 Block I																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		2 / 0.784		- / -		- / -		- / -		- / -		0 / 0.000		2 / 0.784					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		3 / 1.295		- / -		- / -		- / -		0 / 0.000		3 / 1.295					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		3 / 1.258		- / -		- / -		0 / 0.000		3 / 1.258					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		3 / 1.350		0 / 0.000		3 / 1.350					
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		5 / 2.316		5 / 2.316					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
Total		- / -		- / -		- / -		- / -		- / -		- / -		- / -		2 / 0.784		3 / 1.295		3 / 1.258		3 / 1.350		5 / 2.316		16 / 7.003					
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	1	1	1	-	1	1	1	-	1	1	1	5	16
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	1	1	1	-	1	1	1	-	1	1	1	5	16
Footnotes: ⁽¹⁵⁾ Integrated Logistic support (ILS) costs beginning in FY19 include identifying projected system installation requirements, modification adjustments, preparation for integration planning, and drawing support efforts. Preparing for the receipt, integration, and installation of future, identified equipment often requires significant planning. The FY19 PE/ILS funding was required to prepare for the FY20 procurements; the FY20 PE/ILS budget request is the required funding to support the associated FY20 procurements, thus setting the baseline for the necessary support funding for FY20 and future years.																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment	Modification Number / Title: 9 / AN/SPN-35 Block I (PN421)
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
⁽¹⁶⁾ Production engineering costs beginning in FY19 include identifying projected system installation requirements, modification adjustments, preparation for integration planning, and drawing support efforts. Preparing for the receipt, integration, and installation of future, identified equipment often requires significant planning.		

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Exhibit P-3a, Individual Modification: PB 2020 Navy						Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9				P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment				Modification Number / Title: 10 / AN/SPN-50(V)1			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	0.000	0.000	0.000	18.340	0.000	18.340	31.600	35.408	54.129	56.210	123.425	319.112
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	0.000	0.000	0.000	18.340	0.000	18.340	31.600	35.408	54.129	56.210	123.425	319.112
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	0.000	0.000	0.000	18.340	0.000	18.340	31.600	35.408	54.129	56.210	123.425	319.112
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Shipboard Air Traffic Radar (SATR) (AN/SPN-50(V)1)

The "National Defense Strategy of the United States of America" calls for military forces to assure allies and friends, dissuade potential adversaries, deter aggression and counter coercion, and defeat adversaries in order to accomplish our national objectives. The Shipboard Air Traffic Radar (SATR) AN/SPN-50(V)1 (hereinafter referred to as AN/SPN-50(V)1) supports these objectives and will be the primary Air Traffic Control (ATC) surveillance radar onboard Nimitz Class Aircraft Carrier (CVN) and Amphibious (LHA and LHD (LH)) type ships. The launch and recovery of aircraft, to include ATC, is a primary function of aircraft carriers and amphibious landing platforms. The surveillance function provides weather and radar data to air traffic controllers supporting aviation operations of all Navy, Marine Corps, joint and allied aviation assets within the assigned airspace. This data is utilized by air traffic controllers to provide a variety of ATC services such as ATC radar approach and departure services (which includes aircraft separation), airspace monitoring, navigational assistance, emergency vectoring, traffic calls, and vectoring and sequencing to the final approach point. Reliable and accurate ATC surveillance radar enhances overall mission and training effectiveness and safety for aircrews and aircraft alike. The AN/SPN-50(V)1 Capability D Document was signed March 2015 and Milestone B was achieved September 2015, at which time the Milestone Decision Authority (MDA) designated the AN/SPN-50(V)1 program as an ACAT IV(T). Milestone C is planned for 3rd quarter FY 2020 and IOC is planned for 4th quarter FY 2022. The AN/SPN-50(V)1 inventory objective is 25 systems (6 LRIPs, and 19 FRP). Twenty-one systems are schedule to be procured with Other Procurement, Navy, funding and 4 are scheduled to be procured with Ship Conversion, Navy, funding.

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9				P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment				Modification Number / Title: 10 / AN/SPN-50(V)1					
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: [No Model Specified]				Modification Type: TBD				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
<i>Modification Item 1 of 1:</i> AN/SPN-50(V)1													
B Kits													
Recurring													
2.1.1) SATR (SPN-50) - NonOrganic	- / -	- / -	- / -	1 / 10.756	- / -	1 / 10.756	2 / 20.926	2 / 21.344	4 / 39.712	4 / 38.505	8 / 79.336	21 / 210.579	
<i>Subtotal: Recurring</i>	- / 0.000	- / -	- / -	- / 10.756	- / -	- / 10.756	- / 20.926	- / 21.344	- / 39.712	- / 38.505	- / 79.336	- / 210.579	
<i>Subtotal: AN/SPN-50(V)1</i>	- / -	- / -	- / -	1 / 10.756	- / -	1 / 10.756	2 / 20.926	2 / 21.344	4 / 39.712	4 / 38.505	8 / 79.336	21 / 210.579	
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.000	- / -	- / -	- / 10.756	- / -	- / 10.756	- / 20.926	- / 21.344	- / 39.712	- / 38.505	- / 79.336	- / 210.579	
Support (All Modification Items)													
3.1) Support Equipment	- / -	- / -	- / -	- / 0.161	- / -	- / 0.161	- / 0.328	- / 0.335	- / 0.683	- / 0.697	- / 1.435	- / 3.639	
3.2) Integrated Logistics Support ⁽¹⁷⁾	- / -	- / -	- / -	- / 1.698	- / -	- / 1.698	- / 1.930	- / 2.166	- / 2.154	- / 0.564	- / 1.369	- / 9.881	
3.3) Production Engineering ⁽¹⁸⁾	- / -	- / -	- / -	- / 5.725	- / -	- / 5.725	- / 6.901	- / 8.473	- / 9.782	- / 7.953	- / 19.908	- / 58.742	
<i>Subtotal: Support</i>	- / 0.000	- / -	- / -	- / 7.584	- / -	- / 7.584	- / 9.159	- / 10.974	- / 12.619	- / 9.214	- / 22.712	- / 72.262	
Installation													
<i>Modification Item 1 of 1:</i> AN/SPN-50(V)1	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 1.515	- / 3.090	- / 1.798	- / 8.491	- / 21.377	- / 36.271	
<i>Subtotal: Installation</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / 1.515	- / 3.090	- / 1.798	- / 8.491	- / 21.377	- / 36.271	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	0.000	18.340	0.000	18.340	31.600	35.408	54.129	56.210	123.425	319.112	

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Exhibit P-3a, Individual Modification: PB 2020 Navy											Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9											P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment											Modification Number / Title: 10 / AN/SPN-50(V)1										
ID Code (A=Service Ready, B=Not Service Ready) :																MDAP/MAIS Code:																
Modification Item 1 of 1: AN/SPN-50(V)1																																
Manufacturer Information																																
Manufacturer Name: TBD														Manufacturer Location: TBD 6																		
Administrative Leadtime (in Months): 8														Production Leadtime (in Months): 12																		
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024						
Contract Dates										May 2020				May 2021				May 2022				May 2023				May 2024						
Delivery Dates										May 2021				May 2022				May 2023				May 2024				May 2025						
Installation Information																																
Method of Implementation: [none specified]:: Installation Name: SATR (SPN-50)																																
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total								
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)								
Prior Years		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 1.515		- / -		- / -		- / -		0 / 0.000		1 / 1.515						
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		2 / 3.090		- / -		- / -		0 / 0.000		2 / 3.090						
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 1.798		1 / 1.659		0 / 0.000		2 / 3.457						
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		4 / 6.832		0 / 0.000		4 / 6.832						
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		4 / 7.126		4 / 7.126						
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		8 / 14.251		8 / 14.251						
Total		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 1.515		2 / 3.090		1 / 1.798		5 / 8.491		12 / 21.377		21 / 36.271						
Installation Schedule																																
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot	
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	2	-	-	-	1	-	1	-	2	2	12	21	
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	2	-	-	-	1	-	1	-	2	2	12	21	
Footnotes:																																
(17) ILS efforts include training courses, courseware management, tech pub management, and supply support planning. These efforts are planned to significantly reduce once the program reaches Material Support Date in FY24.																																
(18) FY 2020 production engineering is based on the first production lot cost estimate, which will require full support to include: SW support of production required changes, engineering support of the production effort, and ongoing installation support. PE increase from FY22 to FY23 is due to the award of the award of the follow-on Full Rate Production (FRP) contract.																																

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment						P-1 Line Item Number / Title: 2851 / ID Systems						
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A					Other Related Program Elements: 0604777N				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	293.103	21.239	22.777	26.059	0.000	26.059	25.232	49.464	57.259	58.402	297.625	851.160
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	293.103	21.239	22.777	26.059	0.000	26.059	25.232	49.464	57.259	58.402	297.625	851.160
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	293.103	21.239	22.777	26.059	0.000	26.059	25.232	49.464	57.259	58.402	297.625	851.160
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: The Identification Systems program funds procurements, installations, and certifications for the following Mark XII / Mark XIIA systems: AN/UPX-37, AN/UPX-41, and AN/UPX-45 Digital Interrogators (DIs), AN/APX-118 and AN/APX-123 Common Digital Transponders (CXPs), AN/UPX-29 Interrogator System (comprised of Interrogator Set AN/UPX-24, OE-120()/UPX Antenna Group, and Mark XII or Mark XIIA equipment), AN/UPX-46 Interrogator System (comprised of CP-2819/UPX Processor and Mark XIIA equipment), Identification Friend or Foe (IFF) support equipment, AN/UPX-34A Radar Track Discriminator System (RTDS), and AN/URN-25 Ship Tactical Air Navigation (TACAN). TACAN moves out of BLI 2851 to BLI 2820 in FY 2019. The OE-120()/UPX Antenna is a new start in FY 2019. The Air Traffic Control Radio Beacon System, IFF, Mark XII/XIIA System (AIMS) is a DoD directed tri-service program designed to provide a universal air traffic control radar beacon system compatible with the National Airspace System program. It provides a secure identification system for military use on all combatant ships, selected auxiliaries, patrol craft, and selected Coast Guard ships by allowing all friendly forces to identify each other and neutral forces. The Mark XII/XIIA system supports several missions such as anti-air warfare, aerial bombardment, and naval attack. The OE-120()/UPX antenna is a new start in FY 2019. The antenna radiates Identification Friend or Foe (IFF) encoded radio frequency (RF) challenge pulses into space and receives the resultant IFF encoded RF transponder replies from space. Current surface ship OE-120()/UPX antenna systems will receive upgrade kits to improve system R&M. The upgrade kits will use open architecture and current technology that allows for continued production and future growth Inventory Objective of 61 is derived from the Naval Data Environment database, the Ships & Aircraft Supplemental Data Table, and procurement plans and schedules. An Engineering Change Proposal has been awarded using RDT&E (PU 0676) funds for the Original Equipment Manufacturer to deliver an Engineering Design Model for shipboard test and evaluation in fiscal year 2018.												

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy				Date: March 2019	
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment				P-1 Line Item Number / Title: 2851 / ID Systems	
ID Code (A=Service Ready, B=Not Service Ready): A		Program Elements for Code B Items: N/A		Other Related Program Elements: 0604777N	
Line Item MDAP/MAIS Code: N/A					

Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	1 / Mark XII/ Mark XIIA Common Digital Transponder (MT032) (Reliability)				- / 58.682	- / 3.024	- / 2.969	- / 1.181	- / 0.000	- / 1.181
P-3a	2 / AN/UPX 24 (V) Mode S (MT035) (Capability Improvement)				- / 36.917	- / 5.219	- / 5.734	- / 6.516	- / 0.000	- / 6.516
P-3a	3 / Mark XII Mode 5 (MT037) (Capability Improvement)				- / 163.163	- / 9.554	- / 4.137	- / 2.418	- / 0.000	- / 2.418
P-3a	4 / Mode S Digital Interrogator (MT040) (Capability Improvement)				- / 34.341	- / 3.442	- / 4.945	- / 5.349	- / 0.000	- / 5.349
P-3a	5 / OE-120/UPX Antenna (MT041) (Reliability)				- / 0.000	- / 0.000	- / 4.992	- / 10.595	- / 0.000	- / 10.595
P-3a	6 / UPX-29/UPX29A/UPX-46 Processor System (MT042) (Reliability)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	7 / Radar Track Discriminator System (RTDS) AN/UPX-34A (MT043) (Reliability)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	8 / AN/UPX-36 (MT044) (Reliability)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-40	Total Gross/Weapon System Cost				- / 293.103	- / 21.239	- / 22.777	- / 26.059	- / 0.000	- / 26.059

Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	1 / Mark XII/ Mark XIIA Common Digital Transponder (MT032) (Reliability)				- / 0.762	- / 0.777	- / 0.793	- / 0.000	- / 0.000	- / 68.188
P-3a	2 / AN/UPX 24 (V) Mode S (MT035) (Capability Improvement)				- / 7.480	- / 8.424	- / 10.952	- / 9.534	- / 19.354	- / 110.130
P-3a	3 / Mark XII Mode 5 (MT037) (Capability Improvement)				- / 0.594	- / 0.890	- / 0.618	- / 0.631	- / 2.187	- / 184.192
P-3a	4 / Mode S Digital Interrogator (MT040) (Capability Improvement)				- / 5.938	- / 7.618	- / 6.493	- / 7.834	- / 18.618	- / 94.578
P-3a	5 / OE-120/UPX Antenna (MT041) (Reliability)				- / 10.458	- / 14.549	- / 15.170	- / 16.061	- / 176.851	- / 248.676
P-3a	6 / UPX-29/UPX29A/UPX-46 Processor System (MT042) (Reliability)				- / 0.000	- / 17.206	- / 12.380	- / 11.495	- / 42.856	- / 83.937
P-3a	7 / Radar Track Discriminator System (RTDS) AN/UPX-34A (MT043) (Reliability)				- / 0.000	- / 0.000	- / 3.082	- / 3.784	- / 11.636	- / 18.502
P-3a	8 / AN/UPX-36 (MT044) (Reliability)				- / 0.000	- / 0.000	- / 7.771	- / 9.063	- / 26.123	- / 42.957
P-40	Total Gross/Weapon System Cost				- / 25.232	- / 49.464	- / 57.259	- / 58.402	- / 297.625	- / 851.160

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
The purpose of the AN/UPX-37 and AN/UPX-41(C) Digital Interrogators (DI) and AN/APX-118 and AN/APX-123 Common Digital Transponder (CXP) program is to replace 20-25 year old hardware and software with reliability and maintenance enhancements through the use of Commercial Off The Shelf / Non Developmental Item COTS/NDI form/fit/function improvements. Incorporation of the Mark XIIA (Mode 5) capability occurred in FY08 and changes nomenclatures from AN/UPX-37 and AN/APX-118(V) to AN/UPX-41(C) and AN/APX-123(V), respectively. Incorporation of the Mark XIIA (Mode S) capability into the AN/UPX-41(C) DI is currently ongoing and will change the DI nomenclature from AN/UPX-41(C) to AN/UPX-45(C).

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment		P-1 Line Item Number / Title: 2851 / ID Systems
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0604777N
Line Item MDAP/MAIS Code: N/A		
AN/UPX-24(V) Field Changes will provide hardware updates to accommodate Mode 5 and Mode S functionality in fielded systems. AN/UPX-24(V) Mode S upgrades will provide improved shipboard combat identification by increasing the probability of identification of commercial and neutral aircraft. The AN/UPX-29(V) Interrogator System is deployed on high capability, state of the art surface platforms that require IFF operational performance beyond that provided by a standard Mark XII system for combat identification. Mark XIIA Mode 5 and Mode S provide improved secure cooperative combat identification throughout IFF. Mode 5 and Mode S are product improvements designed to be installed through engineering changes to digital Mark XII interrogators and transponders including AN/APX-118/123(V), AN/UPX-37/41(C), and AN/UPX-24(V). AN/UPX-46 field changes will provide hardware updates to IFF Interrogator Systems fielded on LCS 1 and LCS 2 ship class variants, and LSD 41 and LSD 49 ship classes. The hardware updates will reduce unique IFF Interrogator Systems by installing common hardware configurations with Mark XIIA capability. AN/UPX-34A Radar Track Discriminator System (RTDS) field changes will provide hardware and software upgrades to fielded systems that will increase system performance and incorporate "other service" target libraries into the system's target database. The RTDS is a Non-Cooperative Target Recognition (NCTR) system.		

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9					P-1 Line Item Number / Title: 2851 / ID Systems					Modification Number / Title: 1 / Mark XII/ Mark XIIA Common Digital Transponder (MT032)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	58.682	3.024	2.969	1.181	0.000	1.181	0.762	0.777	0.793	0.000	0.000	68.188
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	58.682	3.024	2.969	1.181	0.000	1.181	0.762	0.777	0.793	0.000	0.000	68.188
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	58.682	3.024	2.969	1.181	0.000	1.181	0.762	0.777	0.793	0.000	0.000	68.188
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Current Mark XII transponder systems no longer meet operational reliability and maintainability (R&M) requirements due to use beyond their intended life cycle and they suffer a high cost of ownership due to parts obsolescence. Current surface ship Mark XII transponders will be replaced to continue incremental digital and R&M upgrades to the Mark XII IFF system. The common digital transponder uses an open architecture that allows for future growth, including Mode 5 (AN/APX-123(V)) and Mode S which was incorporated into the production line beginning with the FY 2005 procurement. Inventory Objective of 521 is derived from the Naval Data Environment (NDE) database, the Ships & Aircraft Supplemental Data Table (SASDT) and ship/submarine Ship Program Manager (SPM) procurement plans and schedules. Incorporation of the Mark XIIA (Mode 5) capability occurred in FY08 and changed the nomenclature from AN/APX-118(V) to AN/APX-123(V). LRIP AN/APX-123(V) units were installed and operated in legacy-only modes until successful completion of the Mode 5 OPEVAL (MT037) and Full Rate Production decision. Full Rate Production was approved July 2012.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9					P-1 Line Item Number / Title: 2851 / ID Systems					Modification Number / Title: 1 / Mark XII/ Mark XIIA Common Digital Transponder (MT032)			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: AN/APX-118/AN/APX-123(V)					Modification Type: Reliability					Related RDT&E PEs: 0604777N			
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: Mark XII/ Mark XIIA Common Digital Transponder (MT032)													
B Kits													
Recurring													
1.1.1) Equipment - NonOrganic ⁽¹⁾	362 / 20.069	53 / 1.960	46 / 2.107	15 / 0.748	- / -	15 / 0.748	15 / 0.762	15 / 0.777	15 / 0.793	- / -	- / -	521 / 27.216	
Subtotal: Recurring	- / 20.069	- / 1.960	- / 2.107	- / 0.748	- / -	- / 0.748	- / 0.762	- / 0.777	- / 0.793	- / -	- / 0.000	- / 27.216	
Subtotal: Mark XII/ Mark XIIA Common Digital Transponder (MT032)	362 / 20.069	53 / 1.960	46 / 2.107	15 / 0.748	- / -	15 / 0.748	15 / 0.762	15 / 0.777	15 / 0.793	- / -	- / -	521 / 27.216	
Subtotal: Procurement, All Modification Items	- / 20.069	- / 1.960	- / 2.107	- / 0.748	- / -	- / 0.748	- / 0.762	- / 0.777	- / 0.793	- / -	- / 0.000	- / 27.216	
Support (All Modification Items)													
2.1) ILS	- / 2.960	- / 0.030	- / 0.013	- / 0.005	- / -	- / 0.005	- / -	- / -	- / -	- / -	- / -	- / 3.008	
2.2) PE ⁽²⁾	- / 15.817	- / 0.456	- / 0.627	- / 0.284	- / -	- / 0.284	- / -	- / -	- / -	- / -	- / -	- / 17.184	
2.3) Product Improvement	- / 4.632	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 4.632	
2.4) Acceptance, Test & Evaluation	- / 2.761	- / 0.045	- / 0.020	- / 0.008	- / -	- / 0.008	- / -	- / -	- / -	- / -	- / -	- / 2.834	
2.5) Depot	- / 0.010	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.010	
2.6) Initial Training	- / 0.822	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.822	
Subtotal: Support	- / 27.002	- / 0.531	- / 0.660	- / 0.297	- / -	- / 0.297	- / -	- / -	- / -	- / -	- / 0.000	- / 28.490	
Installation													
Modification Item 1 of 1: Mark XII/ Mark XIIA Common Digital Transponder (MT032)	- / 11.611	- / 0.533	- / 0.202	- / 0.136	- / 0.000	- / 0.136	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 12.482	
Subtotal: Installation	- / 11.611	- / 0.533	- / 0.202	- / 0.136	- / -	- / 0.136	- / -	- / -	- / -	- / -	- / 0.000	- / 12.482	
Total													
Total Cost (Procurement + Support + Installation)	58.682	3.024	2.969	1.181	0.000	1.181	0.762	0.777	0.793	0.000	0.000	68.188	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9										P-1 Line Item Number / Title: 2851 / ID Systems										Modification Number / Title: 1 / Mark XII/ Mark XIIA Common Digital Transponder (MT032)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: Mark XII/ Mark XIIA Common Digital Transponder (MT032)																															
Manufacturer Information																															
Manufacturer Name: BAE Systems LP															Manufacturer Location: Greenlawn, NY																
Administrative Leadtime (<i>in Months</i>): 3															Production Leadtime (<i>in Months</i>): 6																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates		Dec 2017				Dec 2018				Dec 2019				Dec 2020				Dec 2021				Dec 2022									
Delivery Dates		Jun 2018				Jun 2019				Jun 2020				Jun 2021				Jun 2022				Jun 2023									
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: Equipment																															
Installation Cost		Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total								
		Qty (<i>Each</i>) / Total Cost (\$ <i>M</i>)	Qty (<i>Each</i>) / Total Cost (\$ <i>M</i>)		Qty (<i>Each</i>) / Total Cost (\$ <i>M</i>)		Qty (<i>Each</i>) / Total Cost (\$ <i>M</i>)		Qty (<i>Each</i>) / Total Cost (\$ <i>M</i>)		Qty (<i>Each</i>) / Total Cost (\$ <i>M</i>)		Qty (<i>Each</i>) / Total Cost (\$ <i>M</i>)		Qty (<i>Each</i>) / Total Cost (\$ <i>M</i>)		Qty (<i>Each</i>) / Total Cost (\$ <i>M</i>)		Qty (<i>Each</i>) / Total Cost (\$ <i>M</i>)		Qty (<i>Each</i>) / Total Cost (\$ <i>M</i>)										
Prior Years		353 / 11.611		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		353 / 11.611							
FY 2018		- / -		8 / 0.533		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		8 / 0.533							
FY 2019		- / -		- / -		3 / 0.202		2 / 0.136		0 / 0.000		2 / 0.136		- / -		- / -		- / -		- / -		0 / 0.000		5 / 0.338							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		- / -							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		- / -							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		- / -							
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		353 / 11.611		8 / 0.533		3 / 0.202		2 / 0.136		0 / 0.000		2 / 0.136		- / -		- / -		- / -		- / -		0 / 0.000		366 / 12.482							
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	353	-	-	4	4	-	-	1	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	366
Out	353	-	-	4	4	-	-	1	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	366
Footnotes:																															
⁽¹⁾ Due to prioritization of this modification, procurement of B-kits was accelerated in order to more quickly outfit the fleet and obtain economies of scale in pricing. As a result, the quantities reflected in FY16-19 are for the ancillary hardware kits required to be provided with the previously purchased B-kits in the year the installations take place. Ancillary hardware procurements only require a 6 month production lead																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy			Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	P-1 Line Item Number / Title: 2851 / ID Systems	Modification Number / Title: 1 / Mark XII/ Mark XIIA Common Digital Transponder (MT032)	
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:	
time. Current inventory objective is 521, which includes 9 additional units purchased in the prior years to provide to the Mode 5 program contractor as GFE and 146 purchased for Naval Surface Warfare Forces beginning in FY18 (45), FY19 (41), FY20 and out all solely Naval Surface Warfare procurements and these are part of the 146 units that will not be installed. (2) Class and Baselines of ships are a significant contributor to the amount required for Production Engineering (PE) to accomplish the IFF capability.			

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9				P-1 Line Item Number / Title: 2851 / ID Systems						Modification Number / Title: 2 / AN/UPX 24 (V) Mode S (MT035)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	36.917	5.219	5.734	6.516	0.000	6.516	7.480	8.424	10.952	9.534	19.354	110.130
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	36.917	5.219	5.734	6.516	0.000	6.516	7.480	8.424	10.952	9.534	19.354	110.130
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	36.917	5.219	5.734	6.516	0.000	6.516	7.480	8.424	10.952	9.534	19.354	110.130
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Incorporation of a Mode S capability in the AN/UPX-24(V) to include an interface with a ship's Combat Systems. Inventory Objective of 123 is derived from the Naval Data Environment database, the Ships & Aircraft Supplemental Data Table and ship/submarine Ship Program Manager procurement plans and schedules.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9				P-1 Line Item Number / Title: 2851 / ID Systems				Modification Number / Title: 2 / AN/UPX 24 (V) Mode S (MT035)				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Models of Systems Affected: AN/UPX-24(V)			Modification Type: Capability Improvement					Related RDT&E PEs: 0604777N				
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Procurement												
Modification Item 1 of 1: AN/UPX 24 (V) Mode S (MT035)												
B Kits												
Non-Recurring												
1.1.1) Equipment - NonOrganic ⁽³⁾	18 / 1.862	4 / 0.686	8 / 1.426	8 / 1.427	- / -	8 / 1.427	18 / 3.276	16 / 2.970	25 / 4.731	16 / 3.807	10 / 2.426	123 / 22.611
Subtotal: Non-Recurring	- / 1.862	- / 0.686	- / 1.426	- / 1.427	- / -	- / 1.427	- / 3.276	- / 2.970	- / 4.731	- / 3.807	- / 2.426	- / 22.611
Subtotal: AN/UPX 24 (V) Mode S (MT035)	18 / 1.862	4 / 0.686	8 / 1.426	8 / 1.427	- / -	8 / 1.427	18 / 3.276	16 / 2.970	25 / 4.731	16 / 3.807	10 / 2.426	123 / 22.611
Subtotal: Procurement, All Modification Items	- / 1.862	- / 0.686	- / 1.426	- / 1.427	- / -	- / 1.427	- / 3.276	- / 2.970	- / 4.731	- / 3.807	- / 2.426	- / 22.611
Support (All Modification Items)												
2.1) ILS	- / 2.697	- / 0.518	- / 0.617	- / 0.618	- / -	- / 0.618	- / 0.677	- / 0.786	- / 1.006	- / 0.845	- / 2.276	- / 10.040
2.2) PE ⁽⁴⁾	- / 7.903	- / 1.837	- / 1.506	- / 2.169	- / -	- / 2.169	- / 2.636	- / 3.141	- / 3.632	- / 3.111	- / 10.588	- / 36.523
2.3) Product Improvement ⁽⁵⁾	- / 22.441	- / 1.933	- / 1.919	- / 1.677	- / -	- / 1.677	- / 0.200	- / -	- / -	- / -	- / -	- / 28.170
2.4) Acceptance, Test & Evaluation	- / 1.215	- / 0.020	- / 0.040	- / 0.041	- / -	- / 0.041	- / 0.042	- / 0.091	- / 0.092	- / 0.105	- / 0.241	- / 1.887
2.5) Depot	- / 0.046	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.046
2.6) Initial Training	- / 0.274	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.274
Subtotal: Support	- / 34.576	- / 4.308	- / 4.082	- / 4.505	- / -	- / 4.505	- / 3.555	- / 4.018	- / 4.730	- / 4.061	- / 13.105	- / 76.940
Installation												
Modification Item 1 of 1: AN/UPX 24 (V) Mode S (MT035)	- / 0.479	- / 0.225	- / 0.226	- / 0.584	- / 0.000	- / 0.584	- / 0.649	- / 1.436	- / 1.491	- / 1.666	- / 3.823	- / 10.579
Subtotal: Installation	- / 0.479	- / 0.225	- / 0.226	- / 0.584	- / -	- / 0.584	- / 0.649	- / 1.436	- / 1.491	- / 1.666	- / 3.823	- / 10.579
Total												
Total Cost (Procurement + Support + Installation)	36.917	5.219	5.734	6.516	0.000	6.516	7.480	8.424	10.952	9.534	19.354	110.130

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9										P-1 Line Item Number / Title: 2851 / ID Systems										Modification Number / Title: 2 / AN/UPX 24 (V) Mode S (MT035)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: AN/UPX 24 (V) Mode S (MT035)																															
Manufacturer Information																															
Manufacturer Name: NAWCAD 4.11.2.1															Manufacturer Location: St. Inigoes, MD																
Administrative Leadtime (<i>in Months</i>): 3															Production Leadtime (<i>in Months</i>): 12																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates		Dec 2017				Dec 2018				Dec 2019				Dec 2020				Dec 2021				Dec 2022				Dec 2023					
Delivery Dates		Dec 2018				Dec 2019				Dec 2020				Dec 2021				Dec 2022				Dec 2023				Dec 2024					
Installation Information																															
Method of Implementation: ALT:: Installation Name: Equipment																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		11 / 0.479		4 / 0.225		- / -		- / -		- / -		- / -		- / -		- / -		2 / 0.106		- / -		1 / 0.050		18 / 0.860							
FY 2018		- / -		- / -		4 / 0.226		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		4 / 0.226							
FY 2019		- / -		- / -		- / -		8 / 0.584		0 / 0.000		8 / 0.584		- / -		- / -		- / -		- / -		0 / 0.000		8 / 0.584							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		8 / 0.649		- / -		- / -		- / -		0 / 0.000		8 / 0.649							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		18 / 1.436		- / -		- / -		0 / 0.000		18 / 1.436							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		16 / 1.385		- / -		0 / 0.000		16 / 1.385							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		20 / 1.666		5 / 1.258		25 / 2.924							
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		16 / 1.258		16 / 1.258							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		10 / 1.257		10 / 1.257							
Total		11 / 0.479		4 / 0.225		4 / 0.226		8 / 0.584		0 / 0.000		8 / 0.584		8 / 0.649		18 / 1.436		18 / 1.491		20 / 1.666		32 / 3.823		123 / 10.579							
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	11	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	5	5	5	3	6	4	4	4	5	5	5	5	32	123
Out	11	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	5	5	5	3	6	4	4	4	5	5	5	5	32	123
Footnotes: ⁽³⁾ Increase procurements and installs based on shift in ship availabilities and to meet PEO IWS and Aegis Modernization schedules. Current Inventory Objective is 123. ⁽⁴⁾ Production Engineering fluctuates throughout the FYDP as the program transitions from less complex installs on small number of ship classes with limited combat system configurations some years to installs on multiple ship classes with various additional combat system configurations other years. Increase from FY19 to FY20 due to increase of installs being performed, and introducing new ship classes, CVN-68, LHD-1 and LSD-49.																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	P-1 Line Item Number / Title: 2851 / ID Systems	Modification Number / Title: 2 / AN/UPX 24 (V) Mode S (MT035)
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
⁽⁵⁾ PI for the FYDP is in support of fleet modernization engineering change proposal (ECP) that supports the improvements in space, weight and power (SWAP), network hardening, and cyber security.		

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	P-1 Line Item Number / Title: 2851 / ID Systems	Modification Number / Title: 3 / Mark XII Mode 5 (MT037)

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	163.163	9.554	4.137	2.418	0.000	2.418	0.594	0.890	0.618	0.631	2.187	184.192
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	163.163	9.554	4.137	2.418	0.000	2.418	0.594	0.890	0.618	0.631	2.187	184.192
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	163.163	9.554	4.137	2.418	0.000	2.418	0.594	0.890	0.618	0.631	2.187	184.192
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Mark XIIA Mode 5 provides improved secure cooperative combat identification throughout Identification Friend or Foe (IFF). Mode 5 is a product improvement which is designed to be installed via engineering changes to digital MarkXII interrogators and transponders including, AN/APX-118/123(V) Common Digital Transponder (CXP), AN/UPX-37/41/45 Digital Interrogator (DI), and AN/UPX-24(V). Procurements will include Cryptography, Long Lead Items, Low-Rate Initial Production (LRIP) Units, Full Rate Production units, Support/Test Equipment, and associated hardware and software changes for Fleet Modernization Plan (FMP) and non-FMP installations. Mode 5 is designed to be installed in all Navy ships which are currently Mode 4 IFF capable. Milestone C and LRIP was approved in July 2006 and Full Rate Production was approved in July 2012. In March 2007, Joint Requirements Oversight Council Memorandum (JROCM 047-07) endorsed a Mode 5 Joint Full Operational Capability in FY2020.

Procurement and installs differ by 108 units due to Naval Special Warfare Forces, which will be installing their own units.

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9				P-1 Line Item Number / Title: 2851 / ID Systems				Modification Number / Title: 3 / Mark XII Mode 5 (MT037)					
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: AN/APX-118/123(V), AN/UPX-37/41(C), AN/UPX-24(V)				Modification Type: Capability Improvement				Related RDT&E PEs: 0604777N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: Mark XII Mode 5 (MT037)													
B Kits													
Non-Recurring													
1.1.1) Equipment - Organic - Organic	- / 3.775	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 3.775	
1.1.2) Mode 5 CXP Systems/Kits - NonOrganic ⁽⁶⁾	380 / 14.379	47 / 0.311	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	427 / 14.690	
1.1.3) Mode 5 UPX-24(V) Kits - NonOrganic	110 / 7.970	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	110 / 7.970	
1.1.4) Mode 5 DI Systems/ Kits - NonOrganic ⁽⁷⁾	293 / 11.970	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	293 / 11.970	
Subtotal: Non-Recurring	- / 38.094	- / 0.311	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 38.405	
Subtotal: Mark XII Mode 5 (MT037)	783 / 38.094	47 / 0.311	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	830 / 38.405	
Subtotal: Procurement, All Modification Items	- / 38.094	- / 0.311	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 38.405	
Support (All Modification Items)													
2.1) Support Equipment	- / 9.559	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 9.559	
2.2) ILS ⁽⁸⁾	- / 7.549	- / 0.413	- / 0.183	- / 0.160	- / -	- / 0.160	- / 0.058	- / 0.070	- / 0.061	- / 0.062	- / 0.197	- / 8.753	
2.3) PE ⁽⁹⁾	- / 50.792	- / 3.115	- / 1.910	- / 1.618	- / -	- / 1.618	- / 0.536	- / 0.604	- / 0.557	- / 0.569	- / 1.756	- / 61.457	
2.4) Product Improvement	- / 13.364	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 13.364	
2.5) Acceptance, Test & Evaluation ⁽¹⁰⁾	- / 6.178	- / 0.252	- / 0.201	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 6.631	
2.6) Initial Training	- / 0.517	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.517	
Subtotal: Support	- / 87.959	- / 3.780	- / 2.294	- / 1.778	- / -	- / 1.778	- / 0.594	- / 0.674	- / 0.618	- / 0.631	- / 1.953	- / 100.281	
Installation													
Modification Item 1 of 1: Mark XII Mode 5 (MT037)	- / 37.110	- / 5.463	- / 1.843	- / 0.640	- / 0.000	- / 0.640	- / 0.000	- / 0.216	- / 0.000	- / 0.000	- / 0.234	- / 45.506	
Subtotal: Installation	- / 37.110	- / 5.463	- / 1.843	- / 0.640	- / -	- / 0.640	- / -	- / 0.216	- / -	- / -	- / 0.234	- / 45.506	
Total													
Total Cost (Procurement + Support + Installation)	163.163	9.554	4.137	2.418	0.000	2.418	0.594	0.890	0.618	0.631	2.187	184.192	

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Exhibit P-3a, Individual Modification: PB 2020 Navy											Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9										P-1 Line Item Number / Title: 2851 / ID Systems										Modification Number / Title: 3 / Mark XII Mode 5 (MT037)												
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																	
Modification Item 1 of 1: Mark XII Mode 5 (MT037)																																
Manufacturer Information																																
Manufacturer Name: BAE Systems LP ⁽¹¹⁾															Manufacturer Location: Greenlawn, NY																	
Administrative Leadtime <i>(in Months)</i> : 3															Production Leadtime <i>(in Months)</i> : 24																	
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024						
Contract Dates		Dec 2017																														
Delivery Dates		Dec 2019																														
Installation Information																																
Method of Implementation: [none specified]:: Installation Name: Mode 5 CXP Systems/Kits																																
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total								
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)								
Prior Years		271 / 12.233		1 / 0.050		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		272 / 12.283						
FY 2018		- / -		25 / 1.187		16 / 0.776		4 / 0.198		0 / 0.000		4 / 0.198		- / -		1 / 0.010		- / -		- / -		- / -		1 / 0.100		47 / 2.271						
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
Total		271 / 12.233		26 / 1.237		16 / 0.776		4 / 0.198		0 / 0.000		4 / 0.198		- / -		1 / 0.010		- / -		- / -		- / -		1 / 0.100		319 / 14.554						
Installation Schedule																																
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot	
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
In	271	7	6	6	7	4	4	4	4	1	1	1	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	319
Out	271	7	6	6	7	4	4	4	4	1	1	1	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	319
Method of Implementation: [none specified]:: Installation Name: Mode 5 UPX-24(V) Kits																																
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total								
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)								
Prior Years		93 / 5.988		13 / 1.183		3 / 0.603		1 / 0.205		0 / 0.000		1 / 0.205		- / -		- / -		- / -		- / -		0 / 0.000		110 / 7.979								

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9					P-1 Line Item Number / Title: 2851 / ID Systems										Modification Number / Title: 3 / Mark XII Mode 5 (MT037)																
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: Mark XII Mode 5 (MT037)																															
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: Mode 5 UPX-24(V) Kits																															
Installation Cost		Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total																		
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																		
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2024		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		93 / 5.988	13 / 1.183	3 / 0.603	1 / 0.205	0 / 0.000	1 / 0.205	- / -	- / -	- / -	- / -	0 / 0.000	110 / 7.979																		
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	93	4	3	3	3	3	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	110
Out	93	4	3	3	3	3	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	110
Method of Implementation: [none specified]:: Installation Name: Mode 5 DI Systems/ Kits																															
Installation Cost		Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total																		
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																		
Prior Years		220 / 18.889	45 / 3.043	16 / 0.464	8 / 0.237	0 / 0.000	8 / 0.237	- / -	2 / 0.206	- / -	- / -	2 / 0.134	293 / 22.973																		
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2024		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		220 / 18.889	45 / 3.043	16 / 0.464	8 / 0.237	0 / 0.000	8 / 0.237	- / -	2 / 0.206	- / -	- / -	2 / 0.134	293 / 22.973																		

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Exhibit P-3a, Individual Modification: PB 2020 Navy																					Date: March 2019										
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9										P-1 Line Item Number / Title: 2851 / ID Systems										Modification Number / Title: 3 / Mark XII Mode 5 (MT037)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: Mark XII Mode 5 (MT037)																															
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: Mode 5 DI Systems/ Kits																															
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	220	12	11	11	11	4	4	4	4	2	2	2	2	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	2	293
Out	220	12	11	11	11	4	4	4	4	2	2	2	2	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	2	293

Footnotes:

(6) Procurement of Mode 5 has been prioritized to meet the mandate to field the system prior to FY2020. Hardware unit costs include ancillary equipment throughout the FYDP. The number of kits and necessary ancillary hardware required is dependent upon the class of ship; therefore unit costs fluctuate from year to year based on the number of installs planned for the following year(s). Delta between procurements and installations is due to the (procurement only) Naval Special Warfare units. The Support Equipment (SE) line consists of buying USM-719 (Test Sets) and KIV-78 (crypto appliques). Deliveries occur on a sliding basis, beginning 12 months after contract award and completing 24 months. Install of equipment can not occur until receipt of all 3 pieces of equipment have been delivered from manufacturer. Install costs vary from year to year due to ship availability, ship classification and location of the install. Hardware requirements vary based ship classifications. Inventory Objectives are as follows: Mode 5 Common Digital Transponder (CXP) kits is 427, Mode 5 UPX-24(V) Kits is 110, and Mode 5 Digital Interrogator (DI)Kits is 293. Reschedule of ship procurement and installations to meet fleet request for earliest fielding of Mode 5 capability.

(7) Reschedule of ship procurement and installations to meet fleet request for earliest fielding of Mode 5 capability.

(8) This cost element is impacted by the amount of documentation and logistics work needed because of the differences between ship classes.

(9) Fluctuation in Production Engineering (PE) is due to the reschedule of ship procurement and installations to meet fleet request for earliest fielding of Mode 5 capability.

(10) Acceptance Test & Evaluation (AT&E) costs fluctuate between fiscal years because they are not solely determined by number of procurements. This cost element is impacted by the amount of documentation and logistics work needed because of the differences of complexity between ship classes.

(11) Production lead time ranges from 12 -24 months. Deliveries from the Original Equipment Manufacturer (OEM) commence 12 months after contract award and conclude 24 months after award (i.e. the delivery date on the P-3a is the date of the first delivery, not the date when all items are delivered); installations then occur within the allotted 12 months from when each kit is delivered. Once delivered, additional efforts are required by the In-Service Engineering Activity to produce ready for issue units from kits, and build and test complete systems with ancillary hardware prior to fleet installs.

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Exhibit P-3a, Individual Modification: PB 2020 Navy						Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9				P-1 Line Item Number / Title: 2851 / ID Systems				Modification Number / Title: 4 / Mode S Digital Interrogator (MT040)			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	34.341	3.442	4.945	5.349	0.000	5.349	5.938	7.618	6.493	7.834	18.618	94.578
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	34.341	3.442	4.945	5.349	0.000	5.349	5.938	7.618	6.493	7.834	18.618	94.578
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	34.341	3.442	4.945	5.349	0.000	5.349	5.938	7.618	6.493	7.834	18.618	94.578
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Adds Mode Select (S) Beacon System commercial aircraft interrogation capability to shipboard IFF Digital Interrogators (DIs). Incorporation of a Mode S capability in the AN/UPX-41(C) will result in a nomenclature change to AN/UPX-45(C). In some installations, such as Aircraft Carriers, incorporation of the Mode S capability in the DI will include an interface with a ship's Air Traffic Control System. Mode S provides improved aircraft surveillance and communications necessary to support air traffic control automation in the dense traffic environments. Mode S provides more accurate aircraft positional information and minimizes interference by discrete interrogation of each Mode S transponder-equipped aircraft and improved processing of aircraft replies. In addition, Mode S provides the medium for a digital data link, which can be used to exchange information between aircraft and various air traffic control functions and weather databases. Inventory Objective of 321 is derived from the Naval Data Environment database, the Ships & Aircraft Supplemental Data Table and ship/submarine Ship Program Manager procurement plans and schedules.

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9					P-1 Line Item Number / Title: 2851 / ID Systems					Modification Number / Title: 4 / Mode S Digital Interrogator (MT040)			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: AN/UPX-37/ ANUPX-41(V)				Modification Type: Capability Improvement				Related RDT&E PEs: 0604777N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: Mode S Digital Interrogator (MT040)													
B Kits													
Non-Recurring													
1.1.1) Equipment - NonOrganic ⁽¹²⁾	22 / 0.152	8 / 0.091	28 / 0.325	26 / 0.308	- / -	26 / 0.308	53 / 0.640	40 / 0.493	62 / 0.773	41 / 0.522	41 / 0.802	321 / 4.106	
Subtotal: Non-Recurring	- / 0.152	- / 0.091	- / 0.325	- / 0.308	- / -	- / 0.308	- / 0.640	- / 0.493	- / 0.773	- / 0.522	- / 0.802	- / 4.106	
Subtotal: Mode S Digital Interrogator (MT040)	22 / 0.152	8 / 0.091	28 / 0.325	26 / 0.308	- / -	26 / 0.308	53 / 0.640	40 / 0.493	62 / 0.773	41 / 0.522	41 / 0.802	321 / 4.106	
Subtotal: Procurement, All Modification Items	- / 0.152	- / 0.091	- / 0.325	- / 0.308	- / -	- / 0.308	- / 0.640	- / 0.493	- / 0.773	- / 0.522	- / 0.802	- / 4.106	
Support (All Modification Items)													
2.1) Support Equipment	- / 0.688	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.688	
2.2) ILS	- / 2.464	- / 0.471	- / 0.410	- / 0.569	- / -	- / 0.569	- / 0.703	- / 0.707	- / 0.762	- / 1.021	- / 2.512	- / 9.619	
2.3) PE ⁽¹³⁾	- / 19.072	- / 2.569	- / 3.684	- / 3.556	- / -	- / 3.556	- / 3.536	- / 4.359	- / 2.787	- / 3.662	- / 10.146	- / 53.371	
2.4) Product Improvement	- / 9.007	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 9.007	
2.5) Acceptance, Test & Evaluation	- / 1.995	- / 0.086	- / 0.300	- / 0.252	- / -	- / 0.252	- / 0.238	- / 0.458	- / 0.416	- / 0.502	- / 1.034	- / 5.281	
2.6) Depot	- / 0.200	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.200	
2.7) Initial Training	- / 0.423	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.423	
Subtotal: Support	- / 33.849	- / 3.126	- / 4.394	- / 4.377	- / -	- / 4.377	- / 4.477	- / 5.524	- / 3.965	- / 5.185	- / 13.692	- / 78.589	
Installation													
Modification Item 1 of 1: Mode S Digital Interrogator (MT040)	- / 0.340	- / 0.225	- / 0.226	- / 0.664	- / 0.000	- / 0.664	- / 0.821	- / 1.601	- / 1.755	- / 2.127	- / 4.124	- / 11.883	
Subtotal: Installation	- / 0.340	- / 0.225	- / 0.226	- / 0.664	- / -	- / 0.664	- / 0.821	- / 1.601	- / 1.755	- / 2.127	- / 4.124	- / 11.883	
Total													
Total Cost (Procurement + Support + Installation)	34.341	3.442	4.945	5.349	0.000	5.349	5.938	7.618	6.493	7.834	18.618	94.578	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9										P-1 Line Item Number / Title: 2851 / ID Systems										Modification Number / Title: 4 / Mode S Digital Interrogator (MT040)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: Mode S Digital Interrogator (MT040)																															
Manufacturer Information																															
Manufacturer Name: BAE Systems LP															Manufacturer Location: Greenlawn, NY																
Administrative Leadtime (<i>in Months</i>): 3															Production Leadtime (<i>in Months</i>): 12																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates		Dec 2017				Dec 2018				Dec 2019				Dec 2020				Dec 2021				Dec 2022				Dec 2023					
Delivery Dates		Dec 2018				Dec 2019				Dec 2020				Dec 2021				Dec 2022				Dec 2023				Dec 2024					
Installation Information																															
Method of Implementation: ALT:: Installation Name: Equipment																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		14 / 0.340		8 / 0.225		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		22 / 0.565					
FY 2018		- / -		- / -		8 / 0.226		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		8 / 0.226					
FY 2019		- / -		- / -		- / -		28 / 0.664		0 / 0.000		28 / 0.664		- / -		- / -		- / -		- / -		- / -		0 / 0.000		28 / 0.664					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		26 / 0.821		- / -		- / -		- / -		- / -		0 / 0.000		26 / 0.821					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		49 / 1.601		- / -		- / -		- / -		4 / 0.000		53 / 1.601					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		40 / 1.755		- / -		- / -		0 / 0.000		40 / 1.755					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		60 / 2.127		2 / 0.071		62 / 2.198					
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		41 / 1.991		41 / 1.991					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		41 / 2.062		41 / 2.062					
Total		14 / 0.340		8 / 0.225		8 / 0.226		28 / 0.664		0 / 0.000		28 / 0.664		26 / 0.821		49 / 1.601		40 / 1.755		60 / 2.127		88 / 4.124		321 / 11.883							
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	14	2	2	2	2	2	2	2	2	7	7	7	7	7	7	6	6	13	12	12	12	10	10	10	10	15	15	15	15	88	321
Out	14	2	2	2	2	2	2	2	2	7	7	7	7	7	7	6	6	13	12	12	12	10	10	10	10	15	15	15	15	88	321
Footnotes: ⁽¹²⁾ Increase procurements and installs based on shift in ship availabilities and to meet PEO IWS and Aegis Modernization schedules. 8 units being installed in FY18 were procured with PY funds in FY17. FY18 and out install cost have increased as several are no longer Mode 5 concurrent. ⁽¹³⁾ Production Engineering fluctuates throughout the FYDP as the program transitions from installs on small number of ship classes with limited combat system configurations some years to installs on multiple ship classes with various additional combat system configurations other years.																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9					P-1 Line Item Number / Title: 2851 / ID Systems					Modification Number / Title: 5 / OE-120/UPX Antenna (MT041)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	0.000	4.992	10.595	0.000	10.595	10.458	14.549	15.170	16.061	176.851	248.676
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	0.000	4.992	10.595	0.000	10.595	10.458	14.549	15.170	16.061	176.851	248.676
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	0.000	4.992	10.595	0.000	10.595	10.458	14.549	15.170	16.061	176.851	248.676
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: The OE-120()/UPX antenna is a new start in FY 2019. The antenna radiates Identification Friend or Foe (IFF) encoded radio frequency (RF) challenge pulses into space and receives the resultant IFF encoded RF transponder replies from space. Current surface ship OE-120()/UPX antenna systems will receive upgrade kits to improve system R&M. The upgrade kits will use open architecture and current technology that allows for continued production and future growth Inventory Objective of 61 is derived from the Naval Data Environment database, the Ships & Aircraft Supplemental Data Table, and procurement plans and schedules. An Engineering Change Proposal has been awarded using RDT&E (PU 0676) funds for the Original Equipment Manufacturer to deliver an Engineering Design Model for shipboard test and evaluation in fiscal year 2018.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9				P-1 Line Item Number / Title: 2851 / ID Systems				Modification Number / Title: 5 / OE-120/UPX Antenna (MT041)					
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: OE-120()/UPX Antenna Group				Modification Type: Reliability				Related RDT&E PEs: 0604777N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: OE-120/UPX Antenna (MT041)													
B Kits													
Non-Recurring													
1.1.1) Equipment - NonOrganic ⁽¹⁴⁾		- / -	- / -	1 / 2.078	3 / 6.358	- / -	3 / 6.358	3 / 6.485	4 / 8.820	5 / 11.246	5 / 11.430	40 / 103.173	61 / 149.590
Subtotal: Non-Recurring		- / 0.000	- / -	- / 2.078	- / 6.358	- / -	- / 6.358	- / 6.485	- / 8.820	- / 11.246	- / 11.430	- / 103.173	- / 149.590
Subtotal: OE-120/UPX Antenna (MT041)		- / -	- / -	1 / 2.078	3 / 6.358	- / -	3 / 6.358	3 / 6.485	4 / 8.820	5 / 11.246	5 / 11.430	40 / 103.173	61 / 149.590
Subtotal: Procurement, All Modification Items		- / 0.000	- / -	- / 2.078	- / 6.358	- / -	- / 6.358	- / 6.485	- / 8.820	- / 11.246	- / 11.430	- / 103.173	- / 149.590
Support (All Modification Items)													
2.1) ILS		- / -	- / -	- / 0.732	- / 0.747	- / -	- / 0.747	- / 0.564	- / 0.384	- / 0.196	- / 0.200	- / 2.759	- / 5.582
2.2) PE		- / -	- / -	- / 1.283	- / 2.319	- / -	- / 2.319	- / 2.575	- / 2.328	- / 2.257	- / 2.937	- / 26.815	- / 40.514
2.3) Product Improvement ⁽¹⁵⁾		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.395	- / -	- / -	- / 17.839	- / 19.234
2.4) Acceptance, Test & Evaluation ⁽¹⁶⁾		- / -	- / -	- / 0.899	- / 1.171	- / -	- / 1.171	- / 0.553	- / 0.630	- / 0.439	- / 0.439	- / 8.763	- / 12.894
Subtotal: Support		- / 0.000	- / -	- / 2.914	- / 4.237	- / -	- / 4.237	- / 3.692	- / 4.737	- / 2.892	- / 3.576	- / 56.176	- / 78.224
Installation													
Modification Item 1 of 1: OE-120/UPX Antenna (MT041)		- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.281	- / 0.992	- / 1.032	- / 1.055	- / 17.502	- / 20.862
Subtotal: Installation		- / 0.000	- / -	- / -	- / -	- / -	- / -	- / 0.281	- / 0.992	- / 1.032	- / 1.055	- / 17.502	- / 20.862
Total													
Total Cost (Procurement + Support + Installation)		0.000	0.000	4.992	10.595	0.000	10.595	10.458	14.549	15.170	16.061	176.851	248.676

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9										P-1 Line Item Number / Title: 2851 / ID Systems										Modification Number / Title: 5 / OE-120/UPX Antenna (MT041)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: OE-120/UPX Antenna (MT041)																															
Manufacturer Information																															
Manufacturer Name: TBD															Manufacturer Location: TBD																
Administrative Leadtime <i>(in Months)</i> : 3															Production Leadtime <i>(in Months)</i> : 22																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates						Jan 2019				Jan 2020				Jan 2021				Jan 2022				Jan 2023				Jan 2024					
Delivery Dates						Nov 2021				Nov 2022				Nov 2023				Nov 2024				Nov 2025				Nov 2026					
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: Equipment																															
Installation Cost		Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total								
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)								
Prior Years		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2018		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2019		- / -	- / -		- / -		- / -		- / -		- / -		1 / 0.281		- / -		- / -		- / -		- / -		0 / 0.000		1 / 0.281						
FY 2020		- / -	- / -		- / -		- / -		- / -		- / -		- / -		3 / 0.992		- / -		- / -		- / -		0 / 0.000		3 / 0.992						
FY 2021		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		3 / 1.032		- / -		- / -		0 / 0.000		3 / 1.032						
FY 2022		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		4 / 1.055		- / -		0 / 0.000		4 / 1.055						
FY 2023		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		5 / 1.658		5 / 1.658						
FY 2024		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		5 / 1.158		5 / 1.158						
To Complete		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		52 / 14.686		52 / 14.686						
Total		- / -	- / -		- / -		- / -		- / -		- / -		- / -		1 / 0.281		3 / 0.992		3 / 1.032		4 / 1.055		62 / 17.502		73 / 20.862						
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	3	-	-	-	-	3	-	-	1	1	1	1	50	61
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	3	-	-	-	-	3	-	-	1	1	1	1	50	61
Footnotes: ⁽¹⁴⁾ Commence Naval Modernization Process planning, Ship Change Document (SCD) development and approval in FY18 required for LPD17, LHD1, LHA6, CVN68, CVN78, DDG51, and CG47 ship classes. ⁽¹⁵⁾ Product improvement funds planned in FY22 for projected engineering and software changes to the production line ⁽¹⁶⁾ Acceptance, Test & Evaluation funding is required to start testing various ship baselines before actual installations can occur in the out years.																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9					P-1 Line Item Number / Title: 2851 / ID Systems					Modification Number / Title: 6 / UPX-29/UPX29A/UPX-46 Processor System (MT042)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	17.206	12.380	11.495	42.856	83.937
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	17.206	12.380	11.495	42.856	83.937
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	17.206	12.380	11.495	42.856	83.937
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Replace or upgrade unique Shipboard IFF Interrogator Systems with common hardware configurations including the CP-2819/UPX processor, AN/APX-123(V) Common Digital Transponder (CXP), and Mark XIIA Digital Interrogator (DI) equipment. Unique interrogator systems will not meet Mode 5 requirements per Mark XIIA Cooperative IFF Operational Requirements Document 595-61-02 - dated 27 Apr 2001. Inventory Objective is 68.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy									Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9				P-1 Line Item Number / Title: 2851 / ID Systems					Modification Number / Title: 6 / UPX-29/UPX29A/UPX-46 Processor System (MT042)				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: UPX-29/UPX29A/UPX-46 Processor System				Modification Type: Reliability					Related RDT&E PEs: 0604777N				
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: UPX-29/UPX29A/UPX-46 Processor System (MT042)													
B Kits													
Non-Recurring													
1.1.1) Mode 5 UPX-46 Systems/Kits - NonOrganic ⁽¹⁷⁾		- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 2.760	5 / 2.998	3 / 2.250	16 / 12.321	28 / 20.329
1.1.2) Mode 5 CXP Systems/Kits - NonOrganic		- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.113	3 / 0.137	2 / 0.117	13 / 0.465	20 / 0.832
1.1.3) Mode 5 DI Systems/Kits - NonOrganic		- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.721	3 / 0.858	2 / 0.747	13 / 3.048	20 / 5.374
Subtotal: Non-Recurring		- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / 3.594	- / 3.993	- / 3.114	- / 15.834	- / 26.535
Subtotal: UPX-29/UPX29A/UPX-46 Processor System (MT042)		- / -	- / -	- / -	- / -	- / -	- / -	- / -	8 / 3.594	11 / 3.993	7 / 3.114	42 / 15.834	68 / 26.535
Subtotal: Procurement, All Modification Items		- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / 3.594	- / 3.993	- / 3.114	- / 15.834	- / 26.535
Support (All Modification Items)													
2.1) Support Equipment		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 6.442	- / 1.662	- / 1.298	- / 0.913	- / 10.315
2.2) ILS		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.402	- / 0.418	- / 0.435	- / 1.421	- / 2.676
2.3) PE		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 5.174	- / 4.564	- / 4.257	- / 18.319	- / 32.314
2.4) Product Improvement		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.040	- / 0.781	- / 0.437	- / -	- / 2.258
2.5) Acceptance Test & Evaluation		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.554	- / 0.384	- / -	- / -	- / 0.938
Subtotal: Support		- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / 13.612	- / 7.809	- / 6.427	- / 20.653	- / 48.501
Installation													
Modification Item 1 of 1: UPX-29/UPX29A/UPX-46 Processor System (MT042)		- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.578	- / 1.954	- / 6.369	- / 8.901
Subtotal: Installation		- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.578	- / 1.954	- / 6.369	- / 8.901
Total													
Total Cost (Procurement + Support + Installation)		0.000	0.000	0.000	0.000	0.000	0.000	0.000	17.206	12.380	11.495	42.856	83.937

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9				P-1 Line Item Number / Title: 2851 / ID Systems				Modification Number / Title: 6 / UPX-29/UPX29A/UPX-46 Processor System (MT042)				
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:				
Modification Item 1 of 1: UPX-29/UPX29A/UPX-46 Processor System (MT042)												
Manufacturer Information												
Manufacturer Name: NAWCAD						Manufacturer Location: St. Inigoes, MD						
Administrative Leadtime (in Months): 0						Production Leadtime (in Months): 12						
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates												
Delivery Dates												
Manufacturer Name: BAE Systems LP						Manufacturer Location: Greenlawn, NY						
Administrative Leadtime (in Months): 0						Production Leadtime (in Months): 12						
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates												
Delivery Dates												
Manufacturer Name: BAE Systems						Manufacturer Location: Greenlawn, NY						
Administrative Leadtime (in Months): 0						Production Leadtime (in Months): 12						
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates												
Delivery Dates												
Installation Information												
Method of Implementation: AIT:: Installation Name: Mode 5 UPX-46 Systems/Kits												
Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.578	- / -	2 / 0.578	4 / 1.156
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 1.430	0 / 0.000	5 / 1.430
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 0.308	3 / 0.308
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	16 / 3.142	16 / 3.142
Total	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.578	5 / 1.430	21 / 4.028	28 / 6.036

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Exhibit P-3a, Individual Modification: PB 2020 Navy																						Date: March 2019									
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9											P-1 Line Item Number / Title: 2851 / ID Systems											Modification Number / Title: 6 / UPX-29/UPX29A/UPX-46 Processor System (MT042)									
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: UPX-29/UPX29A/UPX-46 Processor System (MT042)																															
Installation Information																															
Method of Implementation: AIT:: Installation Name: Mode 5 UPX-46 Systems/Kits																															
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2	1	1	1	21	28
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2	1	1	1	21	28
Method of Implementation: AIT:: Installation Name: Mode 5 CXP Systems/Kits																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		2 / 0.289		2 / 0.289					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		3 / 0.315		0 / 0.000		3 / 0.315			
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		2 / 0.134		2 / 0.134			
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		13 / 0.870		13 / 0.870			
Total		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		3 / 0.315		17 / 1.293		20 / 1.608			
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	17	20
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	17	20

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	P-1 Line Item Number / Title: 2851 / ID Systems	Modification Number / Title: 6 / UPX-29/UPX29A/UPX-46 Processor System (MT042)

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:

Modification Item 1 of 1: UPX-29/UPX29A/UPX-46 Processor System (MT042)

Installation Information

Method of Implementation: AIT:: Installation Name: Mode 5 DI Systems/Kits

Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.165	2 / 0.165
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 0.209	0 / 0.000	3 / 0.209
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.083	2 / 0.083
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	13 / 0.800	13 / 0.800
Total	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 0.209	17 / 1.048	20 / 1.257

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	17	20	
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	17	20	

Footnotes:

(17) Will provide the Mode 5 Capability to (3) Ship Classes . The UPX-46 system require a 24 month lead time, and a UPX-46 kit requires a 12 month lead time. Install of equipment can not occur until receipt of all 3 pieces of equipment have been delivered from manufacturer. Install costs vary from year to year due to ship availability, ship classification and location of the install. Hardware requirements vary based on ship classifications. Initial spares are included in overall hardware cost.

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9					P-1 Line Item Number / Title: 2851 / ID Systems					Modification Number / Title: 7 / Radar Track Discriminator System (RTDS) AN/UPX-34A (MT043)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.082	3.784	11.636	18.502
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.082	3.784	11.636	18.502
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.082	3.784	11.636	18.502
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Description: AN/UPX-34A Radar Track Discriminator System (RTDS) is installed on CG47 Class Aegis Cruisers and provides high fidelity, long range, Non-Cooperative Target Recognition (NCTR) capability to support the Air-Sea battle by providing timely tactical engagement decisions by Aegis action officers. Upgrades to the system will reduce Rules of Engagement (ROE) concerns, incorporate "other services" target libraries into the RTDS database, and increase the system's range performance. These enhancements are critical to the Aegis Cruiser's primary Anti-Air warfare (AAW) role. These enhancements also provide critical capability to accurately identify and discern civilian versus military aircraft. Inventory objective 11.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy									Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9				P-1 Line Item Number / Title: 2851 / ID Systems					Modification Number / Title: 7 / Radar Track Discriminator System (RTDS) AN/UPX-34A (MT043)				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: Radar Track Discriminator System (RTDS) AN/UPX-34A				Modification Type: Reliability				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: Radar Track Discriminator System (RTDS) AN/UPX-34A (MT043)													
B Kits													
Non-Recurring													
1.1.1) AN/UPX-34A Kit - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.267	2 / 0.236	7 / 1.040	11 / 1.543	
Subtotal: Non-Recurring	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.267	- / 0.236	- / 1.040	- / 1.543	
Subtotal: Radar Track Discriminator System (RTDS) AN/UPX-34A (MT043)	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.267	2 / 0.236	7 / 1.040	11 / 1.543	
Subtotal: Procurement, All Modification Items	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.267	- / 0.236	- / 1.040	- / 1.543	
Support (All Modification Items)													
2.1) ILS	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.206	- / 0.210	- / 0.953	- / 1.369	
2.2) PE	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.637	- / 1.937	- / 5.538	- / 9.112	
2.3) Product Improvement	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.700	- / 0.761	- / -	- / 1.461	
2.4) Acceptance Test and Evaluation	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.198	- / 0.211	- / -	- / 0.409	
2.5) Initial Training	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.074	- / 0.077	- / 0.233	- / 0.384	
Subtotal: Support	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 2.815	- / 3.196	- / 6.724	- / 12.735	
Installation													
Modification Item 1 of 1: Radar Track Discriminator System (RTDS) AN/UPX-34A (MT043)	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.352	- / 3.872	- / 4.224	
Subtotal: Installation	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.352	- / 3.872	- / 4.224	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.082	3.784	11.636	18.502	

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	P-1 Line Item Number / Title: 2851 / ID Systems	Modification Number / Title: 7 / Radar Track Discriminator System (RTDS) AN/UPX-34A (MT043)

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:

Modification Item 1 of 1: Radar Track Discriminator System (RTDS) AN/UPX-34A (MT043)

Installation Information

Method of Implementation: [none specified]:: Installation Name: AN/UPX-34A Kit

Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.352	0 / 0.000	2 / 0.352
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.352	2 / 0.352
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	7 / 3.520	7 / 3.520
Total	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.352	9 / 3.872	11 / 4.224

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	9	11	
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	9	11	

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	P-1 Line Item Number / Title: 2851 / ID Systems	Modification Number / Title: 8 / AN/UPX-36 (MT044)

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.771	9.063	26.123	42.957
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.771	9.063	26.123	42.957
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.771	9.063	26.123	42.957
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Replace or upgrade unique Shipboard IFF Interrogator Systems with common hardware configurations including the CP-2819/UPX processor and Mark XIIA Digital Interrogator (DI) equipment. Unique AN/UPX-36 interrogator systems currently installed on LSD 41 and LSD 49 ship classes will not meet Mode 5 requirements per Mark XIIA Cooperative IFF Operational Requirements Document 595-61-02 - dated 27 Apr 2001. Inventory Objective is 12.

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9				P-1 Line Item Number / Title: 2851 / ID Systems						Modification Number / Title: 8 / AN/UPX-36 (MT044)			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: AN/UPX-36				Modification Type: Reliability				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: AN/UPX-36 (MT044)													
B Kits													
Non-Recurring													
1.1.1) AN/UPX-36A Kit - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 3.724	4 / 5.164	5 / 6.820	12 / 15.708
Subtotal: Non-Recurring	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 3.724	- / 5.164	- / 6.820	- / 15.708
Subtotal: AN/UPX-36 (MT044)	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 3.724	4 / 5.164	5 / 6.820	12 / 15.708
Subtotal: Procurement, All Modification Items	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 3.724	- / 5.164	- / 6.820	- / 15.708
Support (All Modification Items)													
2.1) Support Equipment	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.600	- / 0.373	- / 1.286	- / 2.259
2.2) ILS	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.564	- / 0.293	- / 1.296	- / 2.153
2.3) PE	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 2.710	- / 3.233	- / 11.617	- / 17.560
2.4) Product Improvement	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.406	- / 1.406
2.5) Acceptance Test & Evaluation	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.173	- / -	- / -	- / 0.173
Subtotal: Support	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 4.047	- / 3.899	- / 15.605	- / 23.551
Installation													
Modification Item 1 of 1: AN/UPX-36 (MT044)	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 3.698	- / 3.698
Subtotal: Installation	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 3.698	- / 3.698
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.771	9.063	26.123	42.957

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9										P-1 Line Item Number / Title: 2851 / ID Systems										Modification Number / Title: 8 / AN/UPX-36 (MT044)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: AN/UPX-36 (MT044)																															
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: AN/UPX-36A Kit																															
Installation Cost		Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total																		
		<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>																	
Prior Years		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 0.927	3 / 0.927																		
FY 2024		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	9 / 2.771	9 / 2.771																		
Total		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	12 / 3.698	12 / 3.698																		
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment							P-1 Line Item Number / Title: 2867 / Joint Precision Approach and Landing System(JPALS)					
ID Code (A=Service Ready, B=Not Service Ready): B				Program Elements for Code B Items: 0603860N				Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: 238												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	2	2
Gross/Weapon System Cost <i>(\$ in Millions)</i>	0.000	0.000	38.094	92.695	0.000	92.695	100.243	46.728	12.193	5.575	5.808	301.336
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	0.000	0.000	38.094	92.695	0.000	92.695	100.243	46.728	12.193	5.575	5.808	301.336
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	0.000	0.000	38.094	92.695	0.000	92.695	100.243	46.728	12.193	5.575	5.808	301.336
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares <i>(\$ in Millions)</i>	-	-	4.137	12.274	-	12.274	11.969	4.026	-	1.503	Continuing	Continuing
Flyaway Unit Cost <i>(\$ in Dollars)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Description: The Joint Precision Approach and Landing System (JPALS) is the primary precision approach and landing system for CVN and LHA/D ships to support aircraft without SPN-46 Automatic Carrier Landing Systems (ACLS) capability, which include F-35B, F-35C, MQ-25 and future platforms. JPALS ship systems are required to provide CVN and LHA/D ships a primary precision approach capability during night and instrument flight conditions, including coupled approach capability to a hover transition point for LHA/D ships, and coupled approach to the deck (auto-land) capability aboard CVN ships. JPALS also provides over-the-air inertial alignment capability for CVN and LHA/D ships to support aircraft platforms without Link-4A capability, including F-35, MQ-25 and future platforms. JPALS MS B occurred June 2016 and MS C is scheduled for second quarter FY 2019.												

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment						P-1 Line Item Number / Title: 2867 / Joint Precision Approach and Landing System(JPALS)				
ID Code (A=Service Ready, B=Not Service Ready): B			Program Elements for Code B Items: 0603860N			Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: 238										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	1 / CR001 AN/USN-3 (V)1 (Modernization)				- / 0.000	- / 0.000	- / 38.094	- / 92.695	- / 0.000	- / 92.695
P-40	Total Gross/Weapon System Cost				- / 0.000	- / 0.000	- / 38.094	- / 92.695	- / 0.000	- / 92.695
Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	1 / CR001 AN/USN-3 (V)1 (Modernization)				- / 100.243	- / 46.728	- / 12.193	- / 5.575	Continuing	Continuing
P-40	Total Gross/Weapon System Cost				- / 100.243	- / 46.728	- / 12.193	- / 5.575	2 / 5.808	2 / 301.336
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										

Justification:
 FY 2020 funds the procurement of eight JPALS Systems and other support necessary to field the JPALS ship systems onboard CVN and LHA/D ships that are required to provide the primary precision approach, landing, on-deck inertial alignment, surveillance, and auto-land capability for F-35B/C and all future low observable manned and unmanned platforms. Acceleration supports earlier installs and certifications giving the warfighter greater flexibility with F-35 deployments.

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9					P-1 Line Item Number / Title: 2867 / Joint Precision Approach and Landing System(JPALS)					Modification Number / Title: 1 / CR001 AN/USN-3 (V)1		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	0.000	38.094	92.695	0.000	92.695	100.243	46.728	12.193	5.575	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	0.000	38.094	92.695	0.000	92.695	100.243	46.728	12.193	5.575	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	0.000	38.094	92.695	0.000	92.695	100.243	46.728	12.193	5.575	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: JPALS ship systems are required to provide CVN and LH ships a primary precision approach capability during night and instrument flight conditions, including coupled approach capability to a hover transition point for LHA/D ships, and coupled approach to the deck (auto-land) capability aboard CVN ships. JPALS also provides over-the-air inertial alignment capability for CVN and LHA/D ships to support aircraft platforms without Link-4A capability, including F-35, MQ-25 and future platforms. Procurements will start third quarter FY 2019 after completion of MS C.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9				P-1 Line Item Number / Title: 2867 / Joint Precision Approach and Landing System(JPALS)				Modification Number / Title: 1 / CR001 AN/USN-3 (V)1					
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: CVN, L-class ships.			Modification Type: Modernization					Related RDT&E PEs: 0603860N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: CR001 AN/USN-3 (V)1													
B Kits													
Recurring													
1.1.1) AN/USN-3 (V)1 - NonOrganic ⁽¹⁾ - / - - / - 3 / 30.295 8 / 57.862 - / - 8 / 57.862 7 / 53.964 2 / 16.269 - / - - / - - / - 20 / 158.390													
1.1.2) ECP/OCIR - Organic - / - - / - - / - - / - - / - - / - - / 3.760 - / 3.835 Continuing Continuing													
Subtotal: Recurring - / 0.000 - / - - / 30.295 - / 57.862 - / - - / 57.862 - / 53.964 - / 16.269 - / 3.760 - / 3.835 Continuing Continuing													
Subtotal: CR001 AN/USN-3 (V)1 - / - - / - 3 / 30.295 8 / 57.862 - / - 8 / 57.862 7 / 53.964 2 / 16.269 - / 3.760 - / 3.835 Continuing Continuing													
Subtotal: Procurement, All Modification Items - / 0.000 - / - - / 30.295 - / 57.862 - / - - / 57.862 - / 53.964 - / 16.269 - / 3.760 - / 3.835 Continuing Continuing													
Support (All Modification Items)													
2.1) Integrated Logistics Support ⁽²⁾ - / - - / - - / 1.180 - / 5.742 - / - - / 5.742 - / 5.777 - / 3.856 - / 1.500 - / 0.771 Continuing Continuing													
2.2) Production Engineering ⁽³⁾ - / - - / - - / 6.619 - / 22.413 - / - - / 22.413 - / 21.618 - / 10.225 - / 2.538 - / 0.969 Continuing Continuing													
Subtotal: Support - / 0.000 - / - - / 7.799 - / 28.155 - / - - / 28.155 - / 27.395 - / 14.081 - / 4.038 - / 1.740 Continuing Continuing													
Installation													
Modification Item 1 of 1: CR001 AN/USN-3 (V)1 - / 0.000 - / 0.000 - / 0.000 - / 6.678 - / 0.000 - / 6.678 - / 18.884 - / 16.378 - / 4.395 - / 0.000 - / 0.000 - / 46.335													
Subtotal: Installation - / 0.000 - / - - / - - / 6.678 - / - - / 6.678 - / 18.884 - / 16.378 - / 4.395 - / - - / 0.000 - / 46.335													
Total													
Total Cost (Procurement + Support + Installation) 0.000 0.000 38.094 92.695 0.000 92.695 100.243 46.728 12.193 5.575 Continuing Continuing													

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9										P-1 Line Item Number / Title: 2867 / Joint Precision Approach and Landing System(JPALS)										Modification Number / Title: 1 / CR001 AN/USN-3 (V)1											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: CR001 AN/USN-3 (V)1																															
Manufacturer Information																															
Manufacturer Name: Raytheon															Manufacturer Location: Fullerton, CA																
Administrative Leadtime (in Months): 0															Production Leadtime (in Months): 12																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates						May 2019				Oct 2019				Feb 2021				Feb 2022													
Delivery Dates						May 2020				Oct 2020				Feb 2022				Feb 2023													
Installation Information																															
Method of Implementation: TBD:: Installation Name: FMP																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2019		- / -		- / -		- / -		3 / 6.678		0 / 0.000		3 / 6.678		- / -		- / -		- / -		- / -		- / -		0 / 0.000		3 / 6.678					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		8 / 18.884		- / -		- / -		- / -		- / -		0 / 0.000		8 / 18.884					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		7 / 16.378		- / -		- / -		- / -		0 / 0.000		7 / 16.378					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		2 / 4.395		- / -		- / -		0 / 0.000		2 / 4.395					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
Total		- / -		- / -		- / -		3 / 6.678		0 / 0.000		3 / 6.678		8 / 18.884		7 / 16.378		2 / 4.395		- / -		0 / 0.000		20 / 46.335							
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	2	1	3	3	1	1	-	2	2	3	-	1	-	1	-	-	-	-	-	20
Out	-	-	-	-	-	-	-	-	-	-	-	2	1	3	3	1	1	-	2	2	3	-	1	-	1	-	-	-	-	-	20
Footnotes:																															
(1) Procurement of Low Rate Initial Production (LRIP) JPALS ship systems begins in FY 2019 following MS C to support the US Navy Master Aviation Plan and US Navy ship availability schedules.																															
(2) Most of the program ILS efforts in FY 2019 are initial production costs (FCA, PCA), with the exception of minimal support to new contract efforts in the last quarter after contract award. In FY 2020, major production ILS efforts begin to include: Interim sustainment (contractor engineering technical services) Repair of Repairables (ROR), support to initial delivery of sparring and training packages, and production phase ILS planning.																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	P-1 Line Item Number / Title: 2867 / Joint Precision Approach and Landing System(JPALS)	Modification Number / Title: 1 / CR001 AN/USN-3 (V)1
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
⁽³⁾ The increase from FY 2019 to FY 2020 is due to the following: FY19 accounts for one quarter of production, the contract is expected to award third quarter FY 2019. FY 2020 is the first full year of production which will require full support to include: SW support of production required changes, systems integration lab support for system checkout and production integration into Aircraft platforms, engineering support of the production effort, contract start up activities, productions start up support activities, and first article check outs.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment							P-1 Line Item Number / Title: 2876 / Naval Mission Planning Systems					
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A				Other Related Program Elements: N/A					
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	250.417	17.396	11.966	15.296	0.000	15.296	14.919	24.422	27.781	28.638	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	250.417	17.396	11.966	15.296	0.000	15.296	14.919	24.422	27.781	28.638	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	250.417	17.396	11.966	15.296	0.000	15.296	14.919	24.422	27.781	28.638	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	1.561	0.317	0.086	-	0.086	0.096	0.374	-	-	-	2.434
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

This line item provides funding to procure Joint Mission Planning System (JMPS) workstations, Software/Production Engineering Support and Integrated Logistics Support (ILS). JMPS is the designated automated mission planning system for Naval Aviation, supporting over 40 Type/Model/Series (T/M/S), U.S. Navy and Marine Corps aircraft and expeditionary forces. Future manned JMPS platforms include: CH-53K, CMV-22B and P-8. JMPS enables weapon system employment by providing the information and decision aids needed to rapidly plan aircraft, weapon or sensor missions, load mission data into aircraft and weapons, conduct mission rehearsal and post mission analysis. JMPS consists of two types of workstations - Maritime (JMPS-M) and Expeditionary (JMPS-E). JMPS-M is the primary product within the Naval Mission Planning System (NavMPS) family of systems, which include Electronic Kneeboard (EKB) and Common Munitions Built In Test Reprogramming Equipment (CMBRE). The Navy's modern aircraft need data loaded from JMPS-M to fly their missions. As aircraft and weapons become increasingly advanced, they will require increased access, quantity, processing analysis and fidelity of data to support mission planning, mission execution and mission analysis. These data requirements will require additional advanced processors and greater amounts of continuous memory. JMPS-M flight planning seats refer to the computer workstations that employ the JMPS framework software. JMPS-E is a scalable, tailorable and collaborative web-based mission planning and execution monitoring tool for Amphibious Squadron Staffs embarked with each Amphibious Ready Group (ARG) and Expeditionary Strike Group (ESG). CMBRE provides USN/USMC forces the critical capability to perform built in test and programming/ reprogramming of various weapons. Program cost is not directly related to FY hardware quantity; software is a cost factor independent of FY hardware quantity and cost. Funding profile accounts for required four year workstation refresh cycle to preclude aging/obsolete hardware and reduce failure rates, procure supporting emerging technology such as EKB, and next generation CMBRE starting in FY 2020 to support advanced operational capabilities and address system obsolescence/cyber-security requirements/mission readiness requirements and support memory requirements for required JMPS planning capabilities.

The Next Generation Naval Mission Planning System (NGNPMS) will address critical capability gaps and deficiencies in the legacy JMPS that are required for modern 21st century integrated mission-centric and collaborative Multi-Domain Mission Management planning, execution and analysis. NGNPMS will replace Naval Aviation's legacy JMPS no later than 2027 while also affordably leveraging prior investments across the systems of systems to deliver integrated and collaborative capability. NGNPMS will affordably address technological obsolescence while also delivering collaborative and automated capabilities in an integrated virtual collaborative data environment. NGNPMS will also leverage service-oriented architecture to provide revolutionary improvements in workflow, usability, cybersecurity, information and decision aids need to rapidly plan/employ/maximize effectiveness of aircraft/weapon/sensor/payload mission plans, advanced pre-mission rehearsal/analysis, functionality to load mission data into aircraft and weapons, dynamic replanning/retargeting against evolving threats in contested environments, integrated and advanced post-mission debrief/analysis, cross-domain capabilities, and support for portability of mission planning, mission execution, and mission analysis functions.

Prior to FY 2017, the EKB was funded in BLI 4268.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy							Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment					P-1 Line Item Number / Title: 2876 / Naval Mission Planning Systems					
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A				Other Related Program Elements: N/A			
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / Naval Mission Planning Systems	P-5a			- / 250.417	- / 17.396	- / 11.966	- / 15.296	- / 0.000	- / 15.296
P-40	Total Gross/Weapon System Cost				- / 250.417	- / 17.396	- / 11.966	- / 15.296	- / 0.000	- / 15.296
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										

Justification:

FY 2020 provides funding to procure seven hundred fifty (750) JMPS-M flight planning seats, five (5) JMPS-E workstations, Electronic Kneeboards (EKB), training assets, and other JMPS support equipment; continues the release of software enhancements based on fleet inputs, emerging technologies, cybersecurity mandates and associated logistics support. FY 2020 laptop procurement supports the AV8B, C-130, C-2A, E-2C/E-2D, MH-60R/S and NLH platforms. This hardware is required to field critical electronic attack mission planning capabilities and support cyber security mandates which ensures air superiority and projected military force in contested areas. Updated hardware is required to continue to meet JMPS operational "Time-To-Plan" requirements for complex platforms which include F/A-18 (all variants) and EA-18G. Additionally, funding provides for database systems with storage space capable of storing National Geospatial-Intelligence Agency (NGA) world-wide map data with associated network hardware. This will provide the Fleet with the required storage for map data, Digital Terrain Elevation Data (DTED) and imagery necessary to plan missions. FY 2020 also includes funding to modernize legacy mission planning execution and analysis software for affordable integration with the Next Generation Naval Mission Planning System (NGNMPS).

Items to be funded in this line include:

Workstation Components - JMPS-M and JMPS-E procure tactical computer hardware through a non-developmental item acquisition strategy. Tactical computer equipment is used to plan and analyze expeditionary missions and aircraft routes under various mission configurations and operational threat environments. Primary outputs are tasking orders, courses of action (COAs), Route Plans, Munitions / Weapons Plans, and Navigation and mission essential data loads for mission execution. New workstations consist of aircraft unique data transfer devices and interfaces, Memory Data Loader Receptacles (MDLR) Small Computer Standard Interface (SCSI) (MDLR-S), Electronic Kneeboard (EKB), current and Next Generation Common Munitions Bit Reprogramming Equipment (CMBRE), Ogden Data Device Ethernet Crypto (ODD-EC), Data Storage Unit Receptacle SCSI (DSUR-S), network hubs, printers, fleet training school workstations, JMPS Application Central Access Library (JACAL), training assets, and other peripheral devices for USN/USNR/USMC/USMCR missions. Next generation CMBRE OPN efforts begin in FY 2021. JMPS Authority to Operate (ATO) requires compliance with Naval Network Warfare Command (NNWC)-issued Information Assurance (IA) mandates and Communications Tasking Orders (CTOs).

Software/Production Engineering Support - The NavMPS program produces software releases via an evolutionary development process. These releases contain enhancements based on fleet inputs and technology challenges. They also contain changes required to retain compatibility with supported platforms, associated weapons, and threat and imagery databases providing input to NavMPS. Software releases are independent of hardware buys. This cost element includes production support services, engineering support services, independent verification and validation test and acceptance, site activation, IA compliance and quality assurance efforts.

Integrated Logistics Support - The NavMPS program conducts site surveys, prepares site installation drawings and provides on-site engineering and logistics evaluations for installations and delivery systems to ensure compliance with the specified configuration. This includes the production and delivery of technical documentation and training materials such as OPNOTES, installation instructions and user manuals required during the fielding of NavMPS products. ILS is a cost factor independent of FY hardware quantity and cost.

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9						P-1 Line Item Number / Title: 2876 / Naval Mission Planning Systems						Item Number / Title [DODIC]: 1 / Naval Mission Planning Systems						
ID Code (A=Service Ready, B=Not Service Ready) :									MDAP/MAIS Code:									
Resource Summary				Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total				
Procurement Quantity <i>(Units in Each)</i>				-		-		-		-		-		-				
Gross/Weapon System Cost <i>(\$ in Millions)</i>				250.417		17.396		11.966		15.296		0.000		15.296				
Less PY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Net Procurement (P-1) <i>(\$ in Millions)</i>				250.417		17.396		11.966		15.296		0.000		15.296				
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Total Obligation Authority <i>(\$ in Millions)</i>				250.417		17.396		11.966		15.296		0.000		15.296				
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																		
Initial Spares <i>(\$ in Millions)</i>				-		1.561		0.317		0.086		-		0.086				
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>				-		-		-		-		-		-				
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
Hardware - JMPS Hardware Cost																		
Recurring Cost																		
1.1.1) S7403 JMPS-M FLIGHT PLANNING SEAT ^{(†) (1)}	4,516.91	11,174	50.472	2,699.00	825	2.227	2,699.00	750	2.024	2,780.00	750	2.085	-	-	-	2,780.00	750	2.085
1.1.2) S7408 JMPS-E EXPEDITIONARY WARFARE ^{(†) (2)}	3,322.22	360	1.196	2,699.00	5	0.013	2,699.00	5	0.013	2,780.00	5	0.014	-	-	-	2,780.00	5	0.014
1.1.3) S7850 JMPS-M Support Equipment ⁽³⁾	-	-	15.206	-	-	8.086	-	-	2.820	-	-	2.749	-	-	-	-	-	2.749
1.1.4) S7851 JMPS-E Support Equipment	-	-	0.085	-	-	0.025	-	-	0.026	-	-	0.026	-	-	-	-	-	0.026
1.1.6) S7411 Next Generation Naval Mission Planning System ⁽⁴⁾	-	-	-	-	-	-	-	-	-	-	-	3.500	-	-	-	-	-	3.500
Subtotal: Recurring Cost	-	-	66.959	-	-	10.351	-	-	4.883	-	-	8.374	-	-	-	-	-	8.374
Subtotal: Hardware - JMPS Hardware Cost	-	-	66.959	-	-	10.351	-	-	4.883	-	-	8.374	-	-	-	-	-	8.374
Support Cost																		
2.1) S7820 Other Costs	-	-	152.015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.2) S7830 Software/ Production Engineering Support ⁽⁵⁾	-	-	23.397	-	-	5.041	-	-	5.039	-	-	4.920	-	-	-	-	-	4.920

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Exhibit P-5, Cost Analysis: PB 2020 Navy													Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9							P-1 Line Item Number / Title: 2876 / Naval Mission Planning Systems						Item Number / Title [DODIC]: 1 / Naval Mission Planning Systems					
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
2.3) S7800 Integrated Logistics Support ⁽⁶⁾	-	-	8.046	-	-	2.004	-	-	2.044	-	-	2.002	-	-	-	-	-	2.002
Subtotal: Support Cost	-	-	183.458	-	-	7.045	-	-	7.083	-	-	6.922	-	-	-	-	-	6.922
Gross/Weapon System Cost	-	-	250.417	-	-	17.396	-	-	11.966	-	-	15.296	-	-	0.000	-	-	15.296

(†) indicates the presence of a P-5a

Footnotes:

(1) FY 2020 unit cost and total cost only reflect JMPS-M laptop procurement. Quantities reflect JMPS-M laptop procurement. Quantities adjusted to meet Fleet demand and number of Mission Planning Environments/aircraft supported (over 40 T/M/S in FY 2020). JMPS laptop quantities are currently based on Fleet demand which is validated by CNAF. FY 2019- 2024 laptop unit costs are based on current FY 2018 laptop model (GETAC S410 G2), plus inflation and additional costs due to additional data storage, multiple communication ports for data transfer and peripheral requirements. The laptop candidates are determined by Fleet requirements and COTS/Military spec software/hardware compatibility. The Flight Planning Seats are on a two year procurement cycle.

(2) FY 2020 unit cost and total cost only reflect JMPS-E laptop procurement. Quantities reflect JMPS-E laptop procurement. Quantities adjusted to meet Fleet demand. FY 2019-2024 laptop unit costs are based on current FY 2018 laptop model (GETAC S410 G2), plus inflation and additional costs due to additional data storage, multiple communication ports for data transfer and peripheral requirements. The laptop candidates are determined by Fleet requirements and COTS/Military spec software/hardware compatibility. The Flight Planning Seats are on a two year procurement cycle.

(3) Support Equipment includes storage devices, network hubs, printers, initial fleet training school workstations, Advanced Data Loader Receptacles, Electronic Kneeboards (EKB), Common Munitions Bit Reprogramming Equipment (CMBRE) prior to FY 2021, training assets, and other peripheral devices for USN/USNR/USMC/USMCR missions. Support Equipment adjusted to meet Fleet demand and number of Mission Planning Environments/aircraft supported (over 40 T/M/S in FY 2020). FY 2018 and prior year increase due to funds being reprogrammed to support CMBRE Magazine Operations efforts as well as OCO funding to support the CMBRE upgrade and replacement units that support fleet operations.

(4) NGNMPS is the replacement to JMPS, which is the designated automated mission planning system for Naval Aviation, supporting over 40 Type/Model/Series (T/M/S), U.S. Navy and Marine Corps aircraft and expeditionary forces. NGNMPS enables weapon system employment by providing the information and decision aids needed to rapidly plan aircraft, weapon or sensor missions, load mission data into aircraft and weapons, conduct mission rehearsal and post mission analysis. NGNMPS will affordably address technological obsolescence, deliver collaborative and automated capabilities, and leverage a service-oriented architecture. FY 2020 includes funding to modernize legacy mission planning execution and analysis software to address obsolescence in support of follow on re-use and affordable integration with the Next Generation Naval Mission Planning System (NGNMPS).

(5) Software/Production Engineering Supports over 40 T/M/S, Mission Planning Environments/aircraft, and supports cyber security mandates.

(6) Integrated Logistics Support provides JMPS technical documentation, training materials and installation instructions that are compliant with cyber security mandates and Communications Tasking Orders (CTOs) for newly deployed platforms.

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9			P-1 Line Item Number / Title: 2876 / Naval Mission Planning Systems						Item Number / Title [DODIC]: 1 / Naval Mission Planning Systems			
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) S7403 JMPS-M FLIGHT PLANNING SEAT		2017 ⁽⁷⁾	OSI Federal Technologies / Aldie, VA	C / FFP	NAWCAD, Lakehurst	Feb 2017	Mar 2017	750	3,047.25	Y		Oct 2015
1.1.1) S7403 JMPS-M FLIGHT PLANNING SEAT		2018 ⁽⁸⁾	OSI Federal Technologies / Aldie, VA	C / FFP	NAWCAD, Lakehurst	Aug 2018	Sep 2018	825	2,699.00	Y		Oct 2017
1.1.1) S7403 JMPS-M FLIGHT PLANNING SEAT		2019 ⁽⁹⁾	OSI Federal Technologies / Aldie, VA	C / FFP	NAWCAD, Lakehurst	Feb 2019	Mar 2019	750	2,699.00	Y		Oct 2017
1.1.1) S7403 JMPS-M FLIGHT PLANNING SEAT		2020 ⁽¹⁰⁾	TBD / TBD	C / FFP	TBD	Feb 2020	Mar 2020	750	2,780.00	N		Oct 2019
1.1.2) S7408 JMPS-E EXPEDITIONARY WARFARE		2016 ⁽¹¹⁾	OSI Federal Technologies / Aldie, VA	C / FFP	NAWCAD, Lakehurst	Aug 2018	Sep 2018	123	2,699.00	Y		Oct 2017
1.1.2) S7408 JMPS-E EXPEDITIONARY WARFARE		2017 ⁽¹²⁾	OSI Federal Technologies / Aldie, VA	C / FFP	NAWCAD, Lakehurst	Feb 2017	Mar 2017	5	3,047.25	Y		Oct 2015
1.1.2) S7408 JMPS-E EXPEDITIONARY WARFARE		2018 ⁽¹³⁾	OSI Federal Technologies / Aldie, VA	C / FFP	NAWCAD, Lakehurst	Aug 2018	Sep 2018	5	2,699.00	Y		Oct 2017
1.1.2) S7408 JMPS-E EXPEDITIONARY WARFARE		2019 ⁽¹⁴⁾	OSI Federal Technologies / Aldie, VA	C / FFP	NAWCAD, Lakehurst	Feb 2019	Mar 2019	5	2,699.00	Y		Oct 2017
1.1.2) S7408 JMPS-E EXPEDITIONARY WARFARE		2020 ⁽¹⁵⁾	TBD / TBD	C / FFP	TBD	Feb 2020	Mar 2020	5	2,780.00	N		Oct 2019

Footnotes:

⁽⁷⁾ JMPS laptops are procured every two years where pricing and fleet requirements are evaluated to ensure JMPS laptops meet fleet requirements while remaining cost effective.

⁽⁸⁾ JMPS laptops are procured every two years where pricing and fleet requirements are evaluated to ensure JMPS laptops meet fleet requirements while remaining cost effective.

⁽⁹⁾ JMPS laptops are procured every two years where pricing and fleet requirements are evaluated to ensure JMPS laptops meet fleet requirements while remaining cost effective.

⁽¹⁰⁾ The FY 2020 JMPS laptop effort is a competitive FY 2020 award therefore the performing activity and location are currently TBD to support a competitive contracting strategy. Once awarded, the performing activity and location will be updated to reflect the selected contractor.

⁽¹¹⁾ JMPS laptops are procured every two years where pricing and fleet requirements are evaluated to ensure JMPS laptops meet fleet requirements while remaining cost effective.

⁽¹²⁾ JMPS laptops are procured every two years where pricing and fleet requirements are evaluated to ensure JMPS laptops meet fleet requirements while remaining cost effective.

⁽¹³⁾ JMPS laptops are procured every two years where pricing and fleet requirements are evaluated to ensure JMPS laptops meet fleet requirements while remaining cost effective.

⁽¹⁴⁾ JMPS laptops are procured every two years where pricing and fleet requirements are evaluated to ensure JMPS laptops meet fleet requirements while remaining cost effective.

⁽¹⁵⁾ The FY 2020 JMPS laptop effort is a competitive FY 2020 award therefore the performing activity and location are currently TBD to support a competitive contracting strategy. Once awarded, the performing activity and location will be updated to reflect the selected contractor.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment						P-1 Line Item Number / Title: 2906 / Tactical/Mobile C4I Systems						
ID Code (A=Service Ready, B=Not Service Ready): B			Program Elements for Code B Items: N/A					Other Related Program Elements: 0604231N				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	109.242	40.079	42.010	36.226	0.000	36.226	29.230	29.576	30.152	30.754	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	109.242	40.079	42.010	36.226	0.000	36.226	29.230	29.576	30.152	30.754	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	109.242	40.079	42.010	36.226	0.000	36.226	29.230	29.576	30.152	30.754	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	2.189	1.625	0.652	-	0.652	0.915	0.886	0.277	0.323	Continuing	Continuing
Flyaway Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-
Description:												
Tactical/Mobile (TacMobile) C4I Systems: The Tactical Mobile program provides evolutionary systems and equipment upgrades to support the Maritime Patrol and Reconnaissance Force Commanders with the capability to plan, direct and control the tactical operations of Maritime Patrol and Reconnaissance Aircraft (MPRA) and other assigned units within their respective area of responsibility. Looking ahead, TacMobile provides critical reach-back capabilities between the Maritime Patrol and Reconnaissance Aircraft, primarily the P-8A/Poseidon, and MQ-4C/Triton, and the Maritime Intelligence Surveillance and Reconnaissance Enterprise. These operations include littoral, open ocean, and over land long-dwell surveillance, anti-surface warfare, over-the-horizon targeting, counter-drug operations, power projection, anti-submarine warfare, mining, search and rescue, indications and warnings, and special operations. The missions are supported by the fixed-site Tactical Operations Centers (TOCs) and Mobile Tactical Operations Centers (MTOCs). Each TacMobile unit is a system-of-systems. TOCs provide sensor and tactical data communications systems; mission planning/mission support, sensor analysis capabilities; avionics and weapons system interfaces, media devices and data handling capabilities, at fixed-site locations. MTOC is a scalable, mobile version of the TOC for contingency operations and for support of MPRA operations from remote forward operating base airfields.												
7 TOCs: 6 operational systems (located at Jacksonville Florida, Sigonella Italy, Kaneohe Bay Hawaii, Whidbey Island Washington, Kadena Japan, and Bahrain), and 1 laboratory system (the "TacMobile Systems Integration Lab" (TMSIL), collocated at SSC Atlantic detachment Patuxent River Maryland with PMA-290's P-8A "Pax River Systems Integration Lab" (PAXSIL)).												
15 MTOCs: 10 operational systems (5 systems home ported at NAS Jacksonville Florida and 5 systems at NAS Whidbey Island Washington), 1 laboratory system (an aircraft integration lab located at Navy Detachment Dallas), 1 C4I engineering and maintenance support system (located at the In Service Engineering Activity (ISEA), SSC Atlantic), 1 C4I mobile systems schoolhouse (located at the Center for Naval Air Technical Training (CNATT) Jacksonville Florida), and 2 systems undergoing production/integration with C4I equipment procured in FY19, and standalone Mobility/Facilities equipment procured in FY20, to meet current operational configuration/requirements.												
The TacMobile program uses an evolutionary development strategy consisting of incremental upgrades to meet new and emergent Fleet requirements, while retaining current capabilities. Increments are planned and resourced to support the MPRF Family of Systems aircraft: P-8A Poseidon aircraft and its upgrades; Advanced Airborne Sensor (AAS); and MQ-4C Triton.												
T4050 will fund TacMobile Command, Control, Computer, Communications and Intelligence (C4I), network, and reach back communications systems modernization. Additionally, the line item funds TacMobile interfaces with P-8A (including Advanced Airborne Sensor (AAS)) and MQ-4C aircraft systems and sensors, and tactical communications modernization. Together these separate capabilities are combined to provide the TOCs and MTOCs with an Integrated Warfighting Capability to support Maritime Patrol P-8A operation requirements and pace aircraft modernization requirements.												

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment		P-1 Line Item Number / Title: 2906 / Tactical/Mobile C4I Systems
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: N/A	Other Related Program Elements: 0604231N
Line Item MDAP/MAIS Code: N/A TacMobile C4I/P-8A modernization are synchronized to provide Technical Refreshes and Incremental Capability upgrades which provide the underlying C4I Infrastructure components and aircraft support capabilities components that ride on the C4I infrastructure. There are five major TacMobile components comprised of currently twenty three distinct subsystems that are developed in synchronization to work together, and are therefore fielded together. New or modernized aircraft interfaces are built specifically to integrate onto the new or modernized C4I infrastructure. They operate together as an overarching system of systems. JH500. Deployable Joint Command and Control (DJC2) provides a self-contained, standardized, rapidly deployable, modular, scalable, and reconfigurable joint command and control (C2) capability to designated Geographic Combatant Commands (GCCs). DJC2 is the materiel solution to Defense Planning Guidance that called for the development of standing Joint Task Forces (JTF) with a deployable C2 capability. DJC2 will ensure that Joint Force Commanders (JFC) are equipped as well as trained and organized to carry out their C2 responsibilities. DJC2 provides GCCs and JFCs a mission critical, integrated family of systems with which to plan, control, coordinate, execute and assess operations. It is designed to deploy rapidly, set up within hours and quickly provide necessary C2 mission and collaboration functionality across the full spectrum of JTF operations. The DJC2 has also been deployed in support of Humanitarian Assistance and Disaster Relief (HA/DR) efforts. The capability is intended for all levels of conflict and will be reconfigurable to meet specific GCC and JTF mission requirements. This capability is interoperable with higher and adjacent echelons of command (to include coalition allies) as well as with supporting elements to include joint forces. DJC2 sites are as follows: 6 DJC2 core systems garrisoned the Joint Communications Support Element (JCSE); Tampa, Florida (1), Brunswick, Georgia (1) and Ramstein, Germany at(1), USPACOM; Okinawa, Japan (1) and Pearl Harbor, Hawaii (1), and NAVEUR; Sigonella , Italy (1). Note that DJC2 is not a follow-on or replacement system for the Global Command and Control System-Joint (GCCS-J); rather, DJC2 employs a suite of applications, ensuring interoperability with the worldwide-installed base of GCCS-J.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment	P-1 Line Item Number / Title: 2906 / Tactical/Mobile C4I Systems

ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: N/A	Other Related Program Elements: 0604231N

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Tactical/Mobile (TacMobile) C4I Systems	P-5a, P-21			- / 66.587	- / 16.599	- / 13.966	- / 9.960	- / -	- / 9.960
P-3a	2 / Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.1 (Upgrade)				- / 42.655	- / 23.480	- / 12.688	- / 13.075	- / 0.000	- / 13.075
P-3a	5 / Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.2 (Tech Refresh 2.1.2)				- / 0.000	- / 0.000	- / 15.356	- / 13.191	- / 0.000	- / 13.191
P-40	Total Gross/Weapon System Cost				- / 109.242	- / 40.079	- / 42.010	- / 36.226	- / 0.000	- / 36.226

Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Tactical/Mobile (TacMobile) C4I Systems	P-5a, P-21			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	2 / Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.1 (Upgrade)				- / 1.500	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 93.398
P-3a	5 / Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.2 (Tech Refresh 2.1.2)				- / 13.036	- / 15.870	- / 9.833	- / 9.818	Continuing	Continuing
P-40	Total Gross/Weapon System Cost				- / 29.230	- / 29.576	- / 30.152	- / 30.754	Continuing	Continuing

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:

Funding in FY 20 completes procurement of final standalone equipment to achieve TacMobile Inc 2.1 total inventory objective to support increased operations worldwide. Global Force Management policies have increased requirements for P-8A aircraft operations. This funding provides ability to conduct multi-site P-8A surveillance operations worldwide to counter/monitor growing threats. The P-8A surveillance program ensures unfettered access of Sea-Lines of Communication and freedom of navigation for the United States and her Allies. Funding maximizes communications (C4I) and inter-operability with Allied forces. Procures two additional MTOC mobility gear sets and expeditionary facilities gear sets for Mobile Tactical Operations Center Manning/Training/Equipping efforts in support of increased worldwide Maritime Patrol and Reconnaissance Force operations. Nine currently operational MTOCS were procured back in the mid-1990's to support P-3 operations. As the P-8A aircraft replaced the P-3, and operations increased worldwide, it was realized that additional MTOCS are required in order to effectively conduct multi-site P-8A surveillance operations to counter/monitor growing threats.

FY20 funding procures Technical Refresh of TacMobile TOC and MTOC C4I and P-8A aircraft interfaces and TIO MTOC systems final standalone end items to meet operational requirements. FY20 request also funds the installation of Technical Refresh Items procured in FY19 to maintain interoperability, address cyber security, and extend service life of fielded systems.

FY20 also procures Technical Refresh of TacMobile TOC and MTOC C4I and aircraft interfaces. Specifically TR 2.1.1 procures person portable Common Data Link systems as well as TacMASS subcomponent refresh. TR 2.1.2 continues to procure Global Broadcast System (GBS) Refresh, Super High Frequency (SHF) Refresh, Ultra High Frequency (UHF)/Very High Frequency (VHF), and adds C4I Network Architecture Upgrades, as well as Network Data Storage for TOCs.

FY20 funding procures DJC2 system enhancements communication updates for six sites. Additionally, DJC2 will maintain interoperability, address cyber security, and extend service life of fielded systems as well as Assured Command & Control capability for operations in denied and degraded environments.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment		P-1 Line Item Number / Title: 2906 / Tactical/Mobile C4I Systems
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: N/A	Other Related Program Elements: 0604231N
Line Item MDAP/MAIS Code: N/A		
Increase in FY20 for DJC2 will procure, produce and field modernized infrastructure Assured Command and Control (AC2), Call Manager and network Extension-of-Service equipment for Joint Communications Support Element systems.		

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10							P-1 Line Item Number / Title: 2906 / Tactical/Mobile C4I Systems							Aggregated Items Title: Tactical/Mobile (TacMobile) C4I Systems						
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
1) T4050 Tactical/Mobile																				
1.1) TIO MTOC System ^{(1)(t)}	A		-	-	-	-	-	-	5,500.000	2	11.000	1,750.000	2	3.500	-	-	-	1,750.000	2	3.500
1.2) Tech Refresh ^{(2)(t)}	A		461.421	19	8.767	1,921.667	3	5.765	-	-	-	-	-	-	-	-	-	-	-	-
1.3) OCO MTOC System ^{(3)(t)}	A		-	-	-	7,603.000	1	7.603	-	-	-	-	-	-	-	-	-	-	-	-
1.4) Consolidated Prior Year Requirements	A		807.328	67	54.091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) T4050 Tactical/Mobile			-	-	62.858	-	-	13.368	-	-	11.000	-	-	3.500	-	-	-	-	-	3.500
2) JH500 DJC2 Increment I System Enhancements																				
2.1) DJC2 Increment I System Enhancements ^{(4)(t)}	A		235.667	6	1.414	489.000	6	2.934	444.333	6	2.666	976.667	6	5.860	-	-	-	976.667	6	5.860
Subtotal: 2) JH500 DJC2 Increment I System Enhancements			-	-	1.414	-	-	2.934	-	-	2.666	-	-	5.860	-	-	-	-	-	5.860
3) T4776 Installation																				
3.1) TIO MTOC System	A		-	-	-	-	-	-	-	-	-	-	-	0.600	-	-	-	-	-	0.600
3.2) Tech Refresh	A		-	-	2.006	-	-	-	-	-	0.300	-	-	-	-	-	-	-	-	-
3.3) OCO MTOC System	A		-	-	-	-	-	0.297	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 3) T4776 Installation			-	-	2.006	-	-	0.297	-	-	0.300	-	-	0.600	-	-	-	-	-	0.600
4) Support																				
4.1) Shore Pre-Installation and Design	A		-	-	0.309	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 4) Support			-	-	0.309	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total			-	-	66.587	-	-	16.599	-	-	13.966	-	-	9.960	-	-	-	-	-	9.960
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
^(t) indicates the presence of a P-5a																				
Footnotes:																				
⁽¹⁾ Funding procures MTOC C4I gear sets to support increased operations with Allied Forces. Global Force Management policies have increased requirements for P-8 operations Worldwide. This funding provides ability to conduct multi-site P-8A surveillance operations to counter/monitor growing threats. The P-8A surveillance program ensures unfettered access of Sea Lines of Communication and freedom of navigation for the United States and her Allies. Funding maximizes communications (C4I) and inter-operability with Allied forces.																				
⁽²⁾ Provides overarching technical modernization and technical refresh to fielded TacMobile systems.																				
⁽³⁾ Overseas Contingency Operation (OCO) funding Increase in FY18 procures an MTOC C4I gear set, and two US Battlefield Information Collection and Exploitation Systems (BICES), to support increased operations with Allied Forces. Global Force Management policies have increased for P-8A aircraft operations in EUCOM. This additional funding provides ability to conduct multi-site P-8A surveillance operations in USEUCOM Area of Responsibility to counter/monitor																				

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2906 / Tactical/Mobile C4I Systems	Aggregated Items Title: Tactical/Mobile (TacMobile) C4I Systems
growing threats. The P-8A surveillance program ensures unfettered access of Sea-Lines of Communication and freedom of navigation for the United States and her Allies. Funding maximizes communications (C4I) and interoperability with Allied forces. ⁽⁴⁾ Quantities listed represent DJC2 core system sites as follows: 6 DJC2 core systems garrisoned the Joint Communications Support Element (JCSE); Tampa, Florida (1), Brunswick, Georgia (1) and Ramstein, Germany at(1), USPACOM; Okinawa, Japan (1) and Pearl Harbor, Hawaii (1), and NAVEUR; Sigonella , Italy (1). Unit costs vary due to the number or level of core system enhancements performed at each site from year to year. FY20 FY20 increase will procure \$3.194M of Assured Command and Control (AC2) modems, as well as Call Manager and network Extension-of-Service equipment for Joint Communications Support element systems increasing network connectivity and cyber defense posture. FY20 funding procures DJC2 system enhancements for six sites, focusing on delivering Next Generation Enclave (NGE) compute and storage resource, Global Broadcast System (GBS) communication and Environmental Control Units (ECUs), delivering NGE enhancements with the addition of Command and Control in a Communications Denied Environment (C2CDE) equipment. These enhancements reduce DJC2 size, weight, and power requirements and also enhances DJC2 cyber security posture.		

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10			P-1 Line Item Number / Title: 2906 / Tactical/Mobile C4I Systems					Aggregated Items: Tactical/Mobile (TacMobile) C4I Systems				
Item Number / Title [DODIC]	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$ K)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
1) T4050 Tactical/Mobile												
1.1) TIO MTOC System ⁽¹⁾		2019	SSC LANT / Charleston, SC	C / CPFF	SSC LANT	Dec 2018	Sep 2019	2	5,500.000	Y		Jul 2018
1.1) TIO MTOC System ⁽¹⁾		2020	SSC LANT / Charleston, SC	C / CPFF	SSC LANT	Dec 2019	Sep 2020	2	1,750.000	Y		Jul 2019
1.2) Tech Refresh ⁽²⁾		2018	SSC LANT / Charleston, SC	C / CPFF	SSC LANT	Dec 2017	Sep 2018	3	1,921.667	N	Sep 2017	Aug 2017
1.3) OCO MTOC System ⁽³⁾	✓	2018	SSC Atlantic / Charleston, SC	C / CPFF	SSC LANT	Dec 2017	Sep 2018	1	7,603.000	N	Jun 2017	Jul 2017
2) JH500 DJC2 Increment I System Enhancements												
2.1) DJC2 Increment I System Enhancements ^{(4)(†)}		2018	SPAWAR / San Diego	C / FFP	San Deigo, CA	Jun 2018	Aug 2018	6	489.000	Y		
2.1) DJC2 Increment I System Enhancements ^{(4)(†)}		2019	SPAWAR / San Diego	C / FFP	San Deigo, CA	Apr 2019	Jun 2019	6	444.333	Y		
2.1) DJC2 Increment I System Enhancements ^{(4)(†)}		2020	SPAWAR / San Diego	C / FFP	San Deigo, CA	Apr 2020	Jun 2020	6	976.667	Y		
†) indicates the presence of a P-21												

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019																				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10										P-1 Line Item Number / Title: 2906 / Tactical/Mobile C4I Systems										Aggregated Items: Tactical/Mobile (TacMobile) C4I Systems																				
Items <i>(Units in Each)</i>							Fiscal Year 2018										Fiscal Year 2019														BALANCE									
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	Calendar Year 2018										Calendar Year 2019																							
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP										
2) JH500 DJC2 Increment I System Enhancements																																								
2.1) DJC2 Increment I System Enhancements ⁽⁴⁾																																								
Prior Years Deliveries: 6																																								
	8	2018	NAVY		6	0	6											A	-	-	1	1	1	1	1	1											0			
	8	2019	NAVY		6	0	6																					A	-	-	1	1	1	1						2
	8	2020	NAVY		6	0	6																															6		
								OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP									

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019																
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10										P-1 Line Item Number / Title: 2906 / Tactical/Mobile C4I Systems										Aggregated Items: Tactical/Mobile (TacMobile) C4I Systems																
Items (Units in Each)							Fiscal Year 2020													Fiscal Year 2021													BALANCE			
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	Calendar Year 2020													Calendar Year 2021																
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP						
2) JH500 DJC2 Increment I System Enhancements																																				
2.1) DJC2 Increment I System Enhancements ⁽⁴⁾																																				
Prior Years Deliveries: 6																																				
	8	2018	NAVY	6	6	0																											0			
	8	2019	NAVY	6	4	2	1	1																									0			
	8	2020	NAVY	6	0	6									A -	-	1	1	1	1	1	1														0
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP						

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Exhibit P-21, Production Schedule: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10				P-1 Line Item Number / Title: 2906 / Tactical/Mobile C4I Systems				Aggregated Items: Tactical/Mobile (TacMobile) C4I Systems				
MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
		MSR For 2020	1-8-5 For 2020	MAX For 2020	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	SPAWAR - San Diego	1	3	6	0	6	2	8	0	6	2	8

"A" in the Delivery Schedule indicates the Contract Award Date.

Note: Due to space limitations, quantities in the Exhibit P-21 delivery calendar are truncated and rounded based on the maximum quantity in the calendar as follows. If the maximum quantity is less than or equal to than 9,999, all quantities are shown as each. If the maximum quantity is between 10,000 and 999,999 all quantities are shown in thousands. If the maximum quantity is between 1,000,000 and 999,999,999 all quantities are shown in millions (rounded to the nearest thousand).If the maximum quantity is equal or greater than 1,000,000,000 all quantities are shown in billions (rounded to the nearest million).

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10				P-1 Line Item Number / Title: 2906 / Tactical/Mobile C4I Systems				Modification Number / Title: 2 / Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.1				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	42.655	23.480	12.688	13.075	0.000	13.075	1.500	0.000	0.000	0.000	0.000	93.398
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	42.655	23.480	12.688	13.075	0.000	13.075	1.500	0.000	0.000	0.000	0.000	93.398
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	42.655	23.480	12.688	13.075	0.000	13.075	1.500	0.000	0.000	0.000	0.000	93.398
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Provides technical modernization and technical refresh to fielded TacMobile Command and Control, Networking, and Communications systems necessary to support P-8A Poseidon Increment 2 and MQ-4C Triton Unmanned Aerial System (UAS) at their initial Operating Capability (IOC)												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10				P-1 Line Item Number / Title: 2906 / Tactical/Mobile C4I Systems						Modification Number / Title: 2 / Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.1			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: Inc 2.1				Modification Type: Upgrade				Related RDT&E PEs: 0604231N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	
Procurement													
<i>Modification Item 1 of 1: Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.1</i>													
<i>B Kits</i>													
<i>Recurring</i>													
1.1.1) TOC - NonOrganic ⁽⁵⁾	19 / 13.538	9 / 6.497	6 / 4.379	7 / 4.597	- / -	7 / 4.597	- / -	- / -	- / -	- / -	- / -	41 / 29.011	
1.1.2) MTOC - NonOrganic ⁽⁶⁾	31 / 24.071	13 / 13.355	5 / 5.499	8 / 7.378	- / -	8 / 7.378	- / -	- / -	- / -	- / -	- / -	57 / 50.303	
<i>Subtotal: Recurring</i>	- / 37.609	- / 19.852	- / 9.878	- / 11.975	- / -	- / 11.975	- / -	- / -	- / -	- / -	- / 0.000	- / 79.314	
<i>Subtotal: Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.1</i>	50 / 37.609	22 / 19.852	11 / 9.878	15 / 11.975	- / -	15 / 11.975	- / -	- / -	- / -	- / -	- / -	98 / 79.314	
<i>Subtotal: Procurement, All Modification Items</i>	- / 37.609	- / 19.852	- / 9.878	- / 11.975	- / -	- / 11.975	- / -	- / -	- / -	- / -	- / 0.000	- / 79.314	
Support (All Modification Items)													
2.1) Shore Pre-Installation Design	- / 0.721	- / 0.400	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.121	
<i>Subtotal: Support</i>	- / 0.721	- / 0.400	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 1.121	
Installation													
<i>Modification Item 1 of 1: Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.1</i>	- / 4.325	- / 3.228	- / 2.810	- / 1.100	- / 0.000	- / 1.100	- / 1.500	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 12.963	
<i>Subtotal: Installation</i>	- / 4.325	- / 3.228	- / 2.810	- / 1.100	- / -	- / 1.100	- / 1.500	- / -	- / -	- / -	- / 0.000	- / 12.963	
Total													
Total Cost (Procurement + Support + Installation)	42.655	23.480	12.688	13.075	0.000	13.075	1.500	0.000	0.000	0.000	0.000	93.398	

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Exhibit P-3a, Individual Modification: PB 2020 Navy												Date: March 2019																			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10								P-1 Line Item Number / Title: 2906 / Tactical/Mobile C4I Systems								Modification Number / Title: 2 / Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.1															
ID Code (A=Service Ready, B=Not Service Ready) :												MDAP/MAIS Code:																			
Modification Item 1 of 1: Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.1																															
Manufacturer Information																															
Manufacturer Name: SSC LANT												Manufacturer Location: Charleston, SC																			
Administrative Leadtime <i>(in Months)</i> : 3												Production Leadtime <i>(in Months)</i> : 7																			
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates		Jan 2018				Jan 2019				Jan 2020																					
Delivery Dates		Aug 2018				Aug 2019				Aug 2020																					
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: TacMobile C4I Systems Technical Refresh 2.1.1																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		26 / 4.325		24 / 3.228		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		50 / 7.553							
FY 2018		- / -		- / -		22 / 2.810		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		22 / 2.810							
FY 2019		- / -		- / -		- / -		11 / 1.100		0 / 0.000		11 / 1.100		- / -		- / -		- / -		- / -		0 / 0.000		11 / 1.100							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		15 / 1.500		- / -		- / -		- / -		0 / 0.000		15 / 1.500							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		26 / 4.325		24 / 3.228		22 / 2.810		11 / 1.100		0 / 0.000		11 / 1.100		15 / 1.500		- / -		- / -		- / -		0 / 0.000		98 / 12.963							
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	26	-	8	8	8	-	7	7	8	-	6	5	-	-	6	6	3	-	-	-	-	-	-	-	-	-	-	-	-	-	98
Out	26	-	8	8	8	-	7	7	8	-	6	5	-	-	6	6	3	-	-	-	-	-	-	-	-	-	-	-	-	-	98
Footnotes: ⁽⁵⁾ For Tactical Operations Center: 1. Quantities represent separate Command & Control & Intelligence (C2I), Communications, Aircraft Interface, and Facility component system upgrades of TacMobile systems. 2. TacMobile Tech Refresh 2.1.1 consists of refreshing 5 major components (made up of 14 individual subsystems) that range in cost from \$500K (MIDS JTRS radios) to \$1,350K(Higher Than SECRET (HTS) Enclave C2I components). The tech refresh hardware composition is dependent upon the requirements of the site at the time of refresh. In FY19 the primary components procured were HF Radios for the																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2906 / Tactical/Mobile C4I Systems	Modification Number / Title: 2 / Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.1
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
Communications Component and Higher Than SECRET (HTS) Enclave C21 components. FY20 will procure MIDS JTRS radios, Link Monitoring Management Tool, and TacMASS subcomponent refresh. HTS Enclave procurement in FY19 results in significantly higher Average Unit Cost, than the less expensive components being procured in FY20. ⁽⁶⁾ For Mobile Tactical Operations Center: 1. Quantities represent separate Command & Control & Intelligence (C2I), Communications, Aircraft Interface, and Mobility/Facility component system upgrades of TacMobile systems. 2. TacMobile Tech Refresh 2.1.1 consists of refreshing 5 major components (made up of 14 individual subsystems) that range in cost \$500K (MIDS JTRS radios) to \$1,350K(Higher Than SECRET (HTS) Enclave C2I components). The tech refresh hardware composition is dependent upon the requirements of the site at the time of refresh. In FY19 the primary components procured were HF Radios for the Communications Component, Higher Than SECRET (HTS) Enclave C21 components and Person portable Common Data Link systems. FY20 will continue to procure Person portable Common Data Link systems as well as TacMASS subcomponent refresh. HTS Enclave procurement in FY19 results in significantly higher Average Unit Cost, than the less expensive components being procured in FY20.		

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10				P-1 Line Item Number / Title: 2906 / Tactical/Mobile C4I Systems						Modification Number / Title: 5 / Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.2		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	0.000	0.000	15.356	13.191	0.000	13.191	13.036	15.870	9.833	9.818	Continuing	Continuing
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	0.000	0.000	15.356	13.191	0.000	13.191	13.036	15.870	9.833	9.818	Continuing	Continuing
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	0.000	0.000	15.356	13.191	0.000	13.191	13.036	15.870	9.833	9.818	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Description: Technical Refresh of Command and Control, Networking and Communications systems necessary to maintain support Maritime Patrol Family of Systems aircraft operations. Includes: Network modernization to maintain Cyber Security posture; Communications refresh and modernization; Sensor analysis, mission planning, and in-flight mission support capabilities, avionics and weapons system interfaces modernization necessary to support P-8A Operations												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10				P-1 Line Item Number / Title: 2906 / Tactical/Mobile C4I Systems						Modification Number / Title: 5 / Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.2			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: Various				Modification Type: Tech Refresh 2.1.2				Related RDT&E PEs: 0604231N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
<i>Modification Item 1 of 1:</i> Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.2													
B Kits													
Recurring													
1.1.1) TOC - NonOrganic ⁽⁷⁾	- / -	- / -	2 / 4.382	1 / 2.952	- / -	1 / 2.952	2 / 6.018	2 / 6.162	1 / 3.069	1 / 3.130	Continuing	Continuing	
1.1.2) MTOC - NonOrganic ⁽⁸⁾	- / -	- / -	4 / 10.665	3 / 8.839	- / -	3 / 8.839	2 / 6.018	3 / 9.308	2 / 6.264	2 / 6.388	Continuing	Continuing	
<i>Subtotal: Recurring</i>	- / 0.000	- / -	- / 15.047	- / 11.791	- / -	- / 11.791	- / 12.036	- / 15.470	- / 9.333	- / 9.518	Continuing	Continuing	
<i>Subtotal: Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.2</i>	- / -	- / -	6 / 15.047	4 / 11.791	- / -	4 / 11.791	4 / 12.036	5 / 15.470	3 / 9.333	3 / 9.518	Continuing	Continuing	
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.000	- / -	- / 15.047	- / 11.791	- / -	- / 11.791	- / 12.036	- / 15.470	- / 9.333	- / 9.518	Continuing	Continuing	
Support (All Modification Items)													
2.1) Shore Pre-Installation Design ⁽⁹⁾	- / -	- / -	- / 0.309	- / 0.700	- / -	- / 0.700	- / 0.600	- / -	- / -	- / -	- / -	- / 1.609	
<i>Subtotal: Support</i>	- / 0.000	- / -	- / 0.309	- / 0.700	- / -	- / 0.700	- / 0.600	- / -	- / -	- / -	- / 0.000	- / 1.609	
Installation													
<i>Modification Item 1 of 1:</i> Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.2	- / 0.000	- / 0.000	- / 0.000	- / 0.700	- / 0.000	- / 0.700	- / 0.400	- / 0.400	- / 0.500	- / 0.300	- / 0.300	- / 2.600	
<i>Subtotal: Installation</i>	- / 0.000	- / -	- / -	- / 0.700	- / -	- / 0.700	- / 0.400	- / 0.400	- / 0.500	- / 0.300	- / 0.300	- / 2.600	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	15.356	13.191	0.000	13.191	13.036	15.870	9.833	9.818	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2906 / Tactical/Mobile C4I Systems	Modification Number / Title: 5 / Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.2

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:

Modification Item 1 of 1: Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.2

Manufacturer Information

Manufacturer Name: SSC LANT				Manufacturer Location: Charleston, SC			
Administrative Leadtime (in Months): 3				Production Leadtime (in Months): 7			
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates		Jan 2019	Jan 2020				
Delivery Dates		Aug 2019	Aug 2020				

Installation Information

Method of Implementation: [none specified]:: Installation Name: TacMobile C4I Systems Technical Refresh 2.1.2

Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	6 / 0.700	0 / 0.000	6 / 0.700	- / -	- / -	- / -	- / -	0 / 0.000	6 / 0.700
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	4 / 0.400	- / -	- / -	- / -	0 / 0.000	4 / 0.400
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 0.400	- / -	- / -	0 / 0.000	4 / 0.400
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.500	- / -	0 / 0.000	5 / 0.500
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 0.300	0 / 0.000	3 / 0.300
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 0.300	3 / 0.300
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	- / -	6 / 0.700	0 / 0.000	6 / 0.700	4 / 0.400	4 / 0.400	5 / 0.500	3 / 0.300	3 / 0.300	25 / 2.600

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	2	2	2	-	2	1	1	-	2	1	1	-	2	2	1	-	1	1	1	3	25
Out	-	-	-	-	-	-	-	-	-	-	2	2	2	-	1	2	1	-	1	2	1	-	1	2	2	-	1	1	1	3	25

Footnotes:
⁽⁷⁾ For Tactical Operations Center: TacMobile Tech Refresh 2.1.2 begins adding procurement of network architecture upgrades and additional network storage in FY20 to meet increasing requirement for management and dissemination of data from additional P-8A Intelligence Surveillance Reconnaissance and Anti Submarine Warfare mission sensors, increasing average unit cost by approximately \$750K per site.

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2906 / Tactical/Mobile C4I Systems	Modification Number / Title: 5 / Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.2
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
⁽⁸⁾ For Mobile Tactical Operations Center: TacMobile Tech Refresh 2.1.2 begins adding procurement of network architecture upgrades in FY20 to meet increasing demand for management and dissemination of data from additional P-8A Intelligence Surveillance Reconnaissance and Anti Submarine Warfare mission sensors, increasing average unit cost by approximately \$279K per site. ⁽⁹⁾ Unit and installation costs vary based upon the specific subsystems technically refreshed from year to year.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment							P-1 Line Item Number / Title: 2914 / Distributed Common Ground System-Navy (DCGS-N)					
ID Code (A=Service Ready, B=Not Service Ready): B				Program Elements for Code B Items: N/A				Other Related Program Elements: 0305208N, 0304785N				
Line Item MDAP/MAIS Code: 000												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	256.126	19.012	10.219	21.788	0.000	21.788	22.422	17.307	17.565	17.953	212.550	594.942
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	256.126	19.012	10.219	21.788	0.000	21.788	22.422	17.307	17.565	17.953	212.550	594.942
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	256.126	19.012	10.219	21.788	0.000	21.788	22.422	17.307	17.565	17.953	212.550	594.942
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	0.511	0.157	0.554	-	0.554	0.731	1.464	0.801	-	-	4.218
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Distributed Common Ground System - Navy (DCGS-N) is the Navy's portion of the Under Secretary of Defense, Intelligence (USD (I)) DCGS Family of Systems (FoS). The Department of Defense (DoD) has defined a DCGS architecture that will be compatible and interoperable across all of the Services' Intelligence, Surveillance and Reconnaissance (ISR) systems and operations. DCGS accesses and ingests data from spaceborne, airborne, subsurface, and surface ISR collection assets, intelligence databases and intelligence producers. This collected data is shared across a Joint enterprise using the DCGS Integration Backbone (DIB) and in time, the Defense Intelligence Information Enterprise (DI2E) to enhance access and sharing of ISR information across Joint forces through the use of common enterprise standards and services. DCGS FoS supports Joint Task Force (JTF)-level and below combat operations with critical intelligence for battle management and information dominance across the full spectrum of operations, including peace, conflict, war, and Overseas Contingency Operations (OCO). DCGS is a cooperative effort between the services, agencies, and DoD to provide systems capable of receiving, processing, exploiting, and disseminating data from airborne and national reconnaissance platforms. DCGS-N core components include the analyst workstation from the Global Command and Control System (GCCS) - Integrated Imagery and Intelligence (I3), Generic Area Limitation Environment (GALE) Signals Intelligence (SIGINT), Common Geo-positioning Services (CGS), Image Product Library (IPL) or Information Store (iSToRE), Modernized Integrated Database (MIDB), Joint Concentrator Architecture (JCA) and Track Management Services (TMS).

The DCGS-N system represents the integration of 1) The processing and exploitation of tactical and Imagery Intelligence (IMINT) and SIGINT; 2) Precision target geopositioning, mensuration, and imagery dissemination capabilities; 3) Selected national IMINT requirements and processing capabilities from the National Geospatial-Intelligence Agency (NGA); and 4) Sharing of Intelligence, Surveillance, Reconnaissance and Targeting (ISR&T) and Command and Control information via DIB, DI2E, and Net-Centric Enterprise Services (NCES) standards with a wide range of customers (e.g., Global Command and Control System - Maritime (GCCS-M), Joint Mission Planning System (JMPS), and many others).

The DCGS-N Enterprise Node (DEN), which incorporates current DIB standards and DI2E policy, facilitates interoperability and data sharing among the DCGS FoS. DCGS-N ensures compliance with the DoD DCGS network architecture.

The Navy is establishing an ISR Enterprise way ahead that will emphasize a reach back strategy to provide intelligence products to support deployed ship and shore operations. The Navy will also migrate to a Service Oriented Architecture (SOA) that requires the integration and testing of a Maritime ISR Enterprise capabilities, migration of ISR applications to a SOA environment, and integration to leverage a Common Computing Environment (CCE) and the Intelligence Community Information Technology Enterprise (IC ITE). DCGS-N will also become the focal point for migration of Maritime Domain Awareness (MDA) fusion and analysis Maritime Fusion & Analysis (MFAS) tool applications for the Navy. Additionally, Intelligence Surveillance and Reconnaissance (ISR) funding supports development and integration efforts to fuse Intelligence, Surveillance, Reconnaissance and Targeting (ISR&T) data collected, exploited and disseminated by ISR systems with other intelligence data and automatically provide to shipboard combat systems

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment		P-1 Line Item Number / Title: 2914 / Distributed Common Ground System-Navy (DCGS-N)
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: N/A	Other Related Program Elements: 0305208N, 0304785N
Line Item MDAP/MAIS Code: 000		
to support kinetic and non-kinetic fires and more effective exploitation of the electromagnetic spectrum. ISR systems will play key roles in enabling the national-to-tactical integration necessary for an integrated maritime targeting capability in support of kinetic and non-kinetic fires.		
Distributed Common Ground System-Navy (DCGS-N) Increment 2 addresses a critical shortfall in Tasking, Collection, Processing, Exploitation, and Dissemination (TCPED) capability and capacity to support operational, tactical planning, and execution across the full range of joint military operations. Existing TCPED shortfalls will be exacerbated by planned Navy, Joint, and Allied fielding of new ISR platforms. Currently fielded systems provide localized processing capabilities that will be overwhelmed in future years without a significant change in the way the Navy processes, exploits and disseminates intelligence data. DCGS-N Increment 2 will deliver all source fusion and analytical capabilities; provide Maritime Domain Awareness (MDA) capabilities and integrate TCPED capabilities to improve the use and analysis of sensor and platform data. DCGS-N Increment 2 will be based on an enterprise solution to share this information across commands, services, and agencies to promote shared situational awareness. DCGS-N Increment 2 consists of multiple releases. The first release provides an enhanced Navy Intelligence, Surveillance and Reconnaissance (ISR) enterprise that converges and builds on the DCGS-N Increment 1 and MDA Enterprise Nodes; leverages the Defense Intelligence Information Enterprise (DI2E); is compliant with the Common Computing Environment (CCE) and the Community Information Technology Enterprise (IC ITE); federates ISR and TCPED workflow and production improving throughout the automation; exploits new and evolving unmanned systems sensor data; provides Multi-Intelligence (Multi-INT) cross-queuing and modular tools. The second release enhances afloat ISR capabilities by providing a set of software centric tools providing Multi-INT fusion and analysis, behavior prediction and intelligent knowledge management designed to operate in disconnected or denied communications environment. Follow-on releases will be developed based on Fleet requirements.		
Intelligence Carry-On Program (ICOP) is a suite of multi-source intelligence and analytical capabilities which includes an integrated Three-Dimensional (3-D) operational picture displaying intelligence and other data sources to provide a richer and more complete picture of the battle space on Unit Level platforms. The system supports a full motion video capability that receives, processes, exploits, and disseminates organic and non-organic data as well as the ability to process and correlate Electronic Intelligence (ELINT) and external Communications Intelligence (COMINT Externals). It integrates mature Commercial Off-the-Shelf (COTS) and Government Off-the-Shelf (GOTS) applications with shared storage and communication paths to reach back to the DCGS-N Enterprise Node (DEN), and it provides data sharing to the Maritime Operations Centers (MOC) and national ISR systems, making tactical users a part of the larger ISR enterprise.		
ICOP is subset to DCGS-N capabilities for Unit Level platforms. DCGS-N only fields on Force Level platforms. There are currently Unit Level platforms identified to receive permanent ICOP Partial or Full Foundation Kit installations. ICOP Foundation Kits include all cabling and mounting plate foundations for antennas and ICOP workstations. The Unit Level platforms will pull from a ICOP workstation or ICOP workstation and Communications Module 3s (CM3s) System rotatable pool based on deployment. ICOP fielding strategy requires both partial foundation kit and ICOP workstations without CM3s or ICOP workstations, (2) CM3s and full foundation kits based on fleet prioritization. Unit level platforms include cruisers (CG), destroyers (DDG), and amphibious transport docks (LPD-17) platforms. Crypto Modifications (Mods) were added to the CM3 production unit end item in FY16 to meet the new mandate for Type 1 Encryption transmission of sensor data.		
DCGS-N Increment 1 Product Improvement includes DCGS-N Fleet Introductory Training and training equipment, DCGS-N hardware and software technical refresh, ancillary equipment and upgrades to extend service life and provide the fleet imagery intelligence capability. Equipment support includes the assembly and integration associated with the product improvements or modification.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy			Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment			P-1 Line Item Number / Title: 2914 / Distributed Common Ground System-Navy (DCGS-N)		
ID Code (A=Service Ready, B=Not Service Ready): B		Program Elements for Code B Items: N/A		Other Related Program Elements: 0305208N, 0304785N	
Line Item MDAP/MAIS Code: 000					

Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / ICOP	P-5a			- / 42.625	- / 6.392	- / 0.000	- / 1.617	- / 0.000	- / 1.617
P-5	2 / 2914 Distributed Common Ground System - Navy (DCGS-N) Prior Years				- / 133.167	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-5	3 / DCGS-N Increment 1 Product Improvement Ashore	P-5a			- / 10.790	- / 4.205	- / 2.662	- / 0.000	- / 0.000	- / 0.000
P-5	4 / DCGS-N Increment 2 Afloat	P-5a			- / 0.000	- / 0.000	- / 0.180	- / 2.660	- / 0.000	- / 2.660
P-3a	1 / PRODUCT IMPROVEMENT Afloat (Tech Refresh/Upgrade)				- / 69.544	- / 8.415	- / 7.377	- / 7.500	- / 0.000	- / 7.500
P-3a	3 / DCGS-N INCREMENT 2 Ashore (New Model)				- / 0.000	- / 0.000	- / 0.000	- / 10.011	- / 0.000	- / 10.011
P-40	Total Gross/Weapon System Cost				- / 256.126	- / 19.012	- / 10.219	- / 21.788	- / 0.000	- / 21.788

Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / ICOP	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-5	2 / 2914 Distributed Common Ground System - Navy (DCGS-N) Prior Years				- / -	- / -	- / -	- / -	- / -	- / -
P-5	3 / DCGS-N Increment 1 Product Improvement Ashore	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-5	4 / DCGS-N Increment 2 Afloat	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / PRODUCT IMPROVEMENT Afloat (Tech Refresh/Upgrade)				- / 1.339	- / 0.306	- / 0.000	- / 0.000	- / 0.000	- / 94.481
P-3a	3 / DCGS-N INCREMENT 2 Ashore (New Model)				- / 9.692	- / 2.108	- / 5.580	- / 5.937	- / 0.000	- / 33.328
P-40	Total Gross/Weapon System Cost				- / 22.422	- / 17.307	- / 17.565	- / 17.953	- / 212.550	- / 594.942

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:

Beginning at PB20, the following efforts have been moved from the P-3a to the P-5 due to budget year (FY20) costs falling below the \$5M threshold:

- Product Improvement Ashore
- Increment 2 Afloat

All associated costs (procurement, install, support) are broken out accordingly on the P-5 to ensure no loss of budget details.

DCGS-N Increment 1 planned procurements in FY20 include (2) DCGS-N Inc 1, (1) 1-rack Afloat technical refresh and (1) 2-rack Afloat technical refresh.

FY20 is the first year procuring DCGS-N Increment 2 systems, which reflects the FY20 request increase. DCGS-N Increment 2 planned procurements in FY20 include (7) DCGS-N Inc 2 Systems which consist of (3) 1-rack Afloat systems, (1) 3-rack Afloat system, (1) 3-rack Maritime Operations Centers (MOC) Ashore system and (2) 3-rack Training Ashore system. These FY20 procurements will support (3) installations

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment		P-1 Line Item Number / Title: 2914 / Distributed Common Ground System-Navy (DCGS-N)
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: N/A	Other Related Program Elements: 0305208N, 0304785N
Line Item MDAP/MAIS Code: 000		
in FY20 and (4) installations in FY21 based on the 10-month procurement lead time. The program was directed by Assistant Secretary of Navy Research, Development and Acquisition (ASN (RDA)) to begin installations concurrently with Initial Operational Test & Evaluation (IOT&E) to address DCGS-N Increment 1 current readiness challenges and provide capability to the fleet sooner. ICOP Systems planned procurements in FY20 include (22) ICOP Systems. ICOP systems will make-up a rotatable pool of non-permanent carry-on systems. Funding increase is to replace severely degraded operation units which must be removed from the fleet which would cause a loss of significant ISR capability. The DCGS-N Inc 1 installations will replace the currently fielded legacy systems and leverage the Navy's Common Computing Environment (CCE) as applicable as well as provide upgrades to extend service life. The DCGS-N Inc 2 installations will replace the currently fielded legacy systems and leverage the Navy's Common Computing Environment (CCE) as applicable as well as applying new capability to the fleet.		

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Exhibit P-5, Cost Analysis: PB 2020 Navy													Date: March 2019								
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10							P-1 Line Item Number / Title: 2914 / Distributed Common Ground System-Navy (DCGS-N)						Item Number / Title [DODIC]: 1 / ICOP								
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:											
Resource Summary				Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
Procurement Quantity <i>(Units in Each)</i>				-			-			-			-			-			-		
Gross/Weapon System Cost <i>(\$ in Millions)</i>				42.625			6.392			0.000			1.617			0.000			1.617		
Less PY Advance Procurement <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Net Procurement (P-1) <i>(\$ in Millions)</i>				42.625			6.392			0.000			1.617			0.000			1.617		
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Total Obligation Authority <i>(\$ in Millions)</i>				42.625			6.392			0.000			1.617			0.000			1.617		
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																					
Initial Spares <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>				-			-			-			-			-			-		
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																					
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total					
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)			
Hardware - ICOP Cost																					
Recurring Cost																					
1.1.1) ICOP Foundation Kit Procurement ^(†) (1)	30.122	82	2.470	55.000	7	0.385	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000			
1.1.2) ICOP System Procurement ^(†) (2)	254.058	69	17.530	490.000	4	1.960	-	-	0.000	69.000	22	1.518	-	-	0.000	69.000	22	1.518			
1.1.3) CM3 Set Procurements ^(†)	-	-	0.000	440.000	3	1.320	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000			
Subtotal: Recurring Cost	-	-	20.000	-	-	3.665	-	-	0.000	-	-	1.518	-	-	0.000	-	-	1.518			
Subtotal: Hardware - ICOP Cost	-	-	20.000	-	-	3.665	-	-	0.000	-	-	1.518	-	-	0.000	-	-	1.518			
Hardware - INSTALLATIONS Cost																					
Recurring Cost																					
2.1.1) ICOP Foundation Kit Installation Afloat	-	-	17.333	-	-	2.174	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000			
Subtotal: Recurring Cost	-	-	17.333	-	-	2.174	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000			
Subtotal: Hardware - INSTALLATIONS Cost	-	-	17.333	-	-	2.174	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000			
Support Cost																					
3.1) ICOP Foundation Kit Production Support	-	-	0.186	-	-	0.025	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000			
3.2) ICOP System Production Support	-	-	1.140	-	-	0.213	-	-	0.000	-	-	0.099	-	-	0.000	-	-	0.099			

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Exhibit P-5, Cost Analysis: PB 2020 Navy													Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10							P-1 Line Item Number / Title: 2914 / Distributed Common Ground System-Navy (DCGS-N)							Item Number / Title [DODIC]: 1 / ICOP					
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:									
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																			
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total			
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	
3.3) ICOP Foundation Kit DSA	-	-	3.966	-	-	0.315	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	
Subtotal: Support Cost	-	-	5.292	-	-	0.553	-	-	0.000	-	-	0.099	-	-	0.000	-	-	0.099	
Gross/Weapon System Cost	-	-	42.625	-	-	6.392	-	-	0.000	-	-	1.617	-	-	0.000	-	-	1.617	
Remarks: Intelligence Carry-On Program (ICOP) is a suite of multi-source intelligence and analytical capabilities which includes an integrated Three-Dimensional (3-D) operational picture displaying intelligence and other data sources to provide a richer and more complete picture of the battle space on Unit Level platforms. The system supports a full motion video capability that receives, processes, exploits, and disseminates organic and non-organic data as well as the ability to process and correlate Electronic Intelligence (ELINT) and external Communications Intelligence (COMINT Externals). It integrates a menu of mature Commercial Off-the-Shelf (COTS) and Government Off-the-Shelf (GOTS) applications with shared storage and communication paths to reach back to the DCGS-N Enterprise Node (DEN), and to provide data sharing to the Maritime Operations Centers (MOC) and national Intelligence, Surveillance and Reconnaissance (ISR) systems, making tactical users a part of the larger ISR enterprise.																			
(†) indicates the presence of a P-5a																			
Footnotes: (1) ICOP Foundation Kit procurements include all cabling and mounting plate foundations for antennas/receivers. ICOP Foundation Kits will be permanently installed on (91) Unit Level platforms. The Unit Level platforms will pull from the ICOP system rotatable pool when deploying. (2) ICOP System procurements include an ICOP Box and (2) CM3 Antennas. (2) CM3 Antennas provides the platform with approximately 360 degree coverage. ICOP Systems will not be permanently installed on a Platform. After procurement, ICOP Systems will become a part of a rotatable pool of non-permanent carry-on systems for deploying Unit Level Platforms. ICOP workstation and CM3 antenna/receiver unit costs fluctuate depending on economy of scales. This is based on negotiated prices on ICOP Prime Mission Product (PMP) contract through FY24. ICOP Systems planned procurements in FY20 include (22) ICOP Systems.																			

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10				P-1 Line Item Number / Title: 2914 / Distributed Common Ground System-Navy (DCGS-N)					Item Number / Title [DODIC]: 1 / ICOP			
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) ICOP Foundation Kit Procurement	✓	2017	BAE Systems / San Diego, CA	C / FFP	San Diego	Jun 2017	Jul 2017	30	27.000	Y		
1.1.1) ICOP Foundation Kit Procurement	✓	2018	BAE Systems / San Diego, CA	C / FFP	San Diego	Oct 2017	Nov 2017	7	55.000	Y		
1.1.2) ICOP System Procurement	✓	2017	BAE Systems / San Diego, CA	C / FFP	San Diego	Jun 2017	Sep 2017	8	490.000	Y		
1.1.2) ICOP System Procurement	✓	2018	BAE Systems / San Diego, CA	C / FFP	San Diego	Oct 2017	Jan 2018	4	490.000	Y		
1.1.2) ICOP System Procurement		2020	BAE Systems / San Diego, CA	C / FFP	San Diego	Dec 2019	Mar 2020	22	69.000	Y		
1.1.3) CM3 Set Procurements	✓	2018	BAE Systems / San Diego, CA	C / FFP	San Diego	Oct 2017	Jan 2018	3	440.000	Y		

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Exhibit P-5, Cost Analysis: PB 2020 Navy											Date: March 2019								
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10						P-1 Line Item Number / Title: 2914 / Distributed Common Ground System-Navy (DCGS-N)						Item Number / Title [DODIC]: 2 / 2914 Distributed Common Ground System - Navy (DCGS-N) Prior Years							
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:									
Resource Summary				Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total					
Procurement Quantity (Units in Each)				-		-		-		-		-		-					
Gross/Weapon System Cost (\$ in Millions)				133.167		0.000		0.000		0.000		0.000		0.000					
Less PY Advance Procurement (\$ in Millions)				-		-		-		-		-		-					
Net Procurement (P-1) (\$ in Millions)				133.167		0.000		0.000		0.000		0.000		0.000					
Plus CY Advance Procurement (\$ in Millions)				-		-		-		-		-		-					
Total Obligation Authority (\$ in Millions)				133.167		0.000		0.000		0.000		0.000		0.000					
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																			
Initial Spares (\$ in Millions)				-		-		-		-		-		-					
Gross/Weapon System Unit Cost (\$ in Thousands)				-		-		-		-		-		-					
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																			
Cost Elements		Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
		Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Hardware - 2914 DCGS-N Prior Year Cost																			
Recurring Cost																			
1.1.1) JSIPS-N Product Improvement Prior Years		-	-	40.572	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.2) DCGS-N Increment 1 Initial FRP Systems Prior Years		-	-	92.595	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost		-	-	133.167	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Hardware - 2914 DCGS-N Prior Year Cost		-	-	133.167	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Gross/Weapon System Cost		-	-	133.167	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Remarks: Includes prior year funding for 2914 Distributed Common Ground System - Navy (DCGS-N) to include Joint Services Imagery Processing System - Navy (JSIPS-N) and Distributed Common Ground System - Navy (DCGS-N) Increment 1 Ashore and Afloat initial Full Rate Production (FRP) Systems. Includes both procurement and installation cost. P3As are no longer shown because funding is prior year only.																			

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019							
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10						P-1 Line Item Number / Title: 2914 / Distributed Common Ground System-Navy (DCGS-N)						Item Number / Title [DODIC]: 3 / DCGS-N Increment 1 Product Improvement Ashore							
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:									
Resource Summary				Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total					
Procurement Quantity (Units in Each)				-		-		-		-		-		-					
Gross/Weapon System Cost (\$ in Millions)				10.790		4.205		2.662		0.000		0.000		0.000					
Less PY Advance Procurement (\$ in Millions)				-		-		-		-		-		-					
Net Procurement (P-1) (\$ in Millions)				10.790		4.205		2.662		0.000		0.000		0.000					
Plus CY Advance Procurement (\$ in Millions)				-		-		-		-		-		-					
Total Obligation Authority (\$ in Millions)				10.790		4.205		2.662		0.000		0.000		0.000					
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																			
Initial Spares (\$ in Millions)				-		-		-		-		-		-					
Gross/Weapon System Unit Cost (\$ in Thousands)				-		-		-		-		-		-					
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																			
Cost Elements		Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
		Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Hardware - DCGS-N Inc. 1 Cost																			
Recurring Cost																			
1.1.1) DCGS-N Tech Refresh/Upgrade ^(†)		921.182	11	10.133	859.000	3	2.577	768.500	2	1.537	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost		-	-	10.133	-	-	2.577	-	-	1.537	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Hardware - DCGS-N Inc. 1 Cost		-	-	10.133	-	-	2.577	-	-	1.537	-	-	0.000	-	-	0.000	-	-	0.000
Support - Support Cost Cost																			
2.1) Production Support		-	-	0.657	-	-	0.303	-	-	0.100	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Support - Support Cost Cost		-	-	0.657	-	-	0.303	-	-	0.100	-	-	0.000	-	-	0.000	-	-	0.000
Support - DSA Cost																			
3.1) DCGS-N Tech Refresh/Upgrade DSA		-	-	0.000	-	-	1.325	-	-	1.025	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Support - DSA Cost		-	-	0.000	-	-	1.325	-	-	1.025	-	-	0.000	-	-	0.000	-	-	0.000
Gross/Weapon System Cost		-	-	10.790	-	-	4.205	-	-	2.662	-	-	0.000	-	-	0.000	-	-	0.000
Remarks: Tech Refresh/Upgrade integration procures Commerical Off-The-Shelf/Non-Developmental Item (COTS/NDI) equipment to replace obsolete and unsupportable equipment for the DCGS-N program to include the processing and exploitation of tactical and Imagery Intelligence (IMINT) and Signal Intelligence (SIGINT); Precision target geopositioning, mensuration, and imagery dissemination capabilities; Selected national IMINT requirements and processing capabilities from the National Geospatial-Intelligence Agency (NGA); Sharing of Intelligence, Surveillance, Reconnaissance and Targeting (ISRT) and Command and																			

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Exhibit P-5, Cost Analysis: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2914 / Distributed Common Ground System-Navy (DCGS-N)	Item Number / Title [DODIC]: 3 / DCGS-N Increment 1 Product Improvement Ashore
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
Control (C2) information via DCGS Integrated Backbone (DIB) and Net-Centric Enterprise Services (NCES) standards. Specifically, this funds tech refresh/upgrades/Engineering Change Proposals (ECPs) to its subsystems to provide access and ingest data from space borne, airborne, subsurface, and surface ISR collection assets, intelligence databases and intelligence producers.		
Related RDT&E PE 0305208N 0304785N		
(†) indicates the presence of a P-5a		

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10				P-1 Line Item Number / Title: 2914 / Distributed Common Ground System-Navy (DCGS-N)					Item Number / Title [DODIC]: 3 / DCGS-N Increment 1 Product Improvement Ashore				
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date	
1.1.1) DCGS-N Tech Refresh/ Upgrade		2018	BAE / SAN DIEGO, CA	C / TBD	** NO PCO **	Dec 2017	Jun 2018	3	859.000	Y			
1.1.1) DCGS-N Tech Refresh/ Upgrade		2019	BAE / SAN DIEGO, CA	C / TBD	** NO PCO **	Dec 2018	Jun 2019	2	768.500	Y			

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019							
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10						P-1 Line Item Number / Title: 2914 / Distributed Common Ground System-Navy (DCGS-N)						Item Number / Title [DODIC]: 4 / DCGS-N Increment 2 Afloat							
ID Code (A=Service Ready, B=Not Service Ready) :									MDAP/MAIS Code:										
Resource Summary				Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total					
Procurement Quantity (Units in Each)				-		-		-		-		-		-					
Gross/Weapon System Cost (\$ in Millions)				0.000		0.000		0.180		2.660		0.000		2.660					
Less PY Advance Procurement (\$ in Millions)				-		-		-		-		-		-					
Net Procurement (P-1) (\$ in Millions)				0.000		0.000		0.180		2.660		0.000		2.660					
Plus CY Advance Procurement (\$ in Millions)				-		-		-		-		-		-					
Total Obligation Authority (\$ in Millions)				0.000		0.000		0.180		2.660		0.000		2.660					
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																			
Initial Spares (\$ in Millions)				-		-		-		-		-		-					
Gross/Weapon System Unit Cost (\$ in Thousands)				-		-		-		-		-		-					
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																			
Cost Elements		Prior Years		FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total			
		Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Hardware - DCGS-N Increment 2 Procurements Cost																			
Recurring Cost																			
1.1.1) Procurement ^(†) (3)		-	-	0.000	-	-	0.000	-	-	0.000	540.000	4	2.160	-	-	0.000	540.000	4	2.160
Subtotal: Recurring Cost		-	-	0.000	-	-	0.000	-	-	0.000	-	-	2.160	-	-	0.000	-	-	2.160
Subtotal: Hardware - DCGS-N Increment 2 Procurements Cost		-	-	0.000	-	-	0.000	-	-	0.000	-	-	2.160	-	-	0.000	-	-	2.160
Support - Support Cost Cost																			
2.1) Production Support		-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.140	-	-	0.000	-	-	0.140
Subtotal: Support - Support Cost Cost		-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.140	-	-	0.000	-	-	0.140
Support - DSA Cost																			
3.1) DSA		-	-	0.000	-	-	0.000	-	-	0.180	-	-	0.360	-	-	0.000	-	-	0.360
Subtotal: Support - DSA Cost		-	-	0.000	-	-	0.000	-	-	0.180	-	-	0.360	-	-	0.000	-	-	0.360
Gross/Weapon System Cost		-	-	0.000	-	-	0.000	-	-	0.180	-	-	2.660	-	-	0.000	-	-	2.660
Remarks: DCGS-N Increment 2 addresses a critical shortfall in Tasking, Collection, Processing, Exploitation, and Dissemination (TCPED) capability and capacity to support operational, tactical planning, and execution across the full range of joint military operations. Existing TCPED shortfalls will be exacerbated by planned Navy, Joint, and Allied fielding of new Intelligence, Surveillance and Reconnaissance (ISR) platforms. Currently fielded systems provide localized processing capabilities that will be overwhelmed in future years without a significant change in the way the Navy processes, exploits and disseminates intelligence																			

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Exhibit P-5, Cost Analysis: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2914 / Distributed Common Ground System-Navy (DCGS-N)	Item Number / Title [DODIC]: 4 / DCGS-N Increment 2 Afloat
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
data. DCGS-N Increment 2 will deliver all source fusion and analytical capabilities; provide Maritime Domain Awareness (MDA) capabilities; integrate TCPED capabilities to improve the use and analysis of sensor and platform data; based on an enterprise solution to share this information across commands, services, and agencies to promote shared situational awareness. Related RDT&E PE 0305208N 0304785N (t) indicates the presence of a P-5a Footnotes: (3) In FY20, (4) DCGS-N Increment 2 Afloat systems will consist of (3) 1-rack Afloat system and (1) 4-rack Afloat system. Procurement costs can range from \$540K (for 1-rack Afloat system) up to \$3,607K (for 4-rack Afloat system) based on ship hull and configuration. FY20 unit cost represents an average based on specific units being procured.		

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10				P-1 Line Item Number / Title: 2914 / Distributed Common Ground System-Navy (DCGS-N)					Item Number / Title [DODIC]: 4 / DCGS-N Increment 2 Afloat			
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) Procurement		2020	SSC PAC ⁽⁴⁾ / San Diego	C / TBD	San Diego	Oct 2019	Jun 2020	4	540.000	Y		

Footnotes:

⁽⁴⁾ After the unit delivered there is additional time required for minimal integration and initial load of the data store

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2914 / Distributed Common Ground System-Navy (DCGS-N)	Modification Number / Title: 1 / PRODUCT IMPROVEMENT Afloat

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	69.544	8.415	7.377	7.500	0.000	7.500	1.339	0.306	0.000	0.000	0.000	94.481
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	69.544	8.415	7.377	7.500	0.000	7.500	1.339	0.306	0.000	0.000	0.000	94.481
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	69.544	8.415	7.377	7.500	0.000	7.500	1.339	0.306	0.000	0.000	0.000	94.481
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Tech Refresh/Upgrade integration procures Commerical Off-The-Shelf/Non-Developmental Item (COTS/NDI) equipment to replace obsolete and unsupportable equipment for the Distributed Common Ground System-Navy (DCGS-N) program for the processing and exploitation of tactical and Imagery Intelligence (IMINT) and Signal Intelligence (SIGINT); Precision target geopositioning, mensuration, and imagery dissemination capabilities; Selected national IMINT requirements and processing capabilities from the National Geospatial-Intelligence Agency (NGA); Sharing of Intelligence, Surveillance, Reconnaissance and Targeting (ISRT) and Command and Control (C2) information via DCGS Integrated Backbone (DIB) and Net-Centric Enterprise Services (NCES) standards. Specifically, this funds tech refresh/upgrades/ Engineering Change Proposals (ECPs) to its subsystems to provide access and ingest data from space borne, airborne, subsurface, and surface ISR collection assets, intelligence databases and intelligence producers.

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10				P-1 Line Item Number / Title: 2914 / Distributed Common Ground System-Navy (DCGS-N)				Modification Number / Title: 1 / PRODUCT IMPROVEMENT Afloat				
ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Models of Systems Affected: Ship			Modification Type: Tech Refresh/Upgrade					Related RDT&E PEs: 0305208N				
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Procurement												
Modification Item 1 of 1: PRODUCT IMPROVEMENT Afloat												
B Kits												
Recurring												
1.1.1) DCGS-N Tech Refresh/Upgrade - NonOrganic ⁽⁵⁾	25 / 26.567	6 / 4.031	5 / 3.890	3 / 2.732	- / -	3 / 2.732	1 / 0.950	- / -	- / -	- / -	- / -	40 / 38.170
Subtotal: Recurring	- / 26.567	- / 4.031	- / 3.890	- / 2.732	- / -	- / 2.732	- / 0.950	- / -	- / -	- / -	- / 0.000	- / 38.170
Subtotal: PRODUCT IMPROVEMENT Afloat	25 / 26.567	6 / 4.031	5 / 3.890	3 / 2.732	- / -	3 / 2.732	1 / 0.950	- / -	- / -	- / -	- / -	40 / 38.170
Subtotal: Procurement, All Modification Items	- / 26.567	- / 4.031	- / 3.890	- / 2.732	- / -	- / 2.732	- / 0.950	- / -	- / -	- / -	- / 0.000	- / 38.170
Support (All Modification Items)												
2.1) Equipment Support	- / 14.774	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / -	- / 14.774
2.2) Production Support	- / 3.198	- / 0.256	- / 0.253	- / 0.391	- / 0.000	- / 0.391	- / 0.062	- / 0.000	- / 0.000	- / 0.000	- / -	- / 14.160
2.3) DSA	- / 3.652	- / 0.378	- / 0.384	- / 0.277	- / 0.000	- / 0.277	- / 0.027	- / 0.006	- / 0.000	- / 0.000	- / -	- / 14.724
Subtotal: Support	- / 11.624	- / 0.634	- / 0.637	- / 0.668	- / -	- / 0.668	- / 0.089	- / 0.006	- / -	- / -	- / 0.000	- / 13.658
Installation												
Modification Item 1 of 1: PRODUCT IMPROVEMENT Afloat	- / 31.353	- / 3.750	- / 2.850	- / 4.100	- / 0.000	- / 4.100	- / 0.300	- / 0.300	- / 0.000	- / 0.000	- / 0.000	- / 42.653
Subtotal: Installation	- / 31.353	- / 3.750	- / 2.850	- / 4.100	- / -	- / 4.100	- / 0.300	- / 0.300	- / -	- / -	- / 0.000	- / 42.653
Total												
Total Cost (Procurement + Support + Installation)	69.544	8.415	7.377	7.500	0.000	7.500	1.339	0.306	0.000	0.000	0.000	94.481

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Exhibit P-3a, Individual Modification: PB 2020 Navy											Date: March 2019																																						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10											P-1 Line Item Number / Title: 2914 / Distributed Common Ground System-Navy (DCGS-N)											Modification Number / Title: 1 / PRODUCT IMPROVEMENT Afloat																											
ID Code (A=Service Ready, B=Not Service Ready) :											MDAP/MAIS Code:																																						
Modification Item 1 of 1: PRODUCT IMPROVEMENT Afloat																																																	
Manufacturer Information																																																	
Manufacturer Name: BAE													Manufacturer Location: SAN DIEGO, CA																																				
Administrative Leadtime (in Months): 2													Production Leadtime (in Months): 6																																				
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024																							
Contract Dates		Dec 2017				Dec 2018				Dec 2019																																							
Delivery Dates		Jun 2018				Jun 2019				Jun 2020																																							
Installation Information																																																	
Method of Implementation: Method:: Installation Name: Product Improvement Afloat DCGS-N																																																	
Installation Cost		Prior Years	FY 2018				FY 2019				FY 2020 Base				FY 2020 OCO				FY 2020 Total				FY 2021				FY 2022				FY 2023				FY 2024				To Complete	Total									
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)				Qty (Each) / Total Cost (\$ M)				Qty (Each) / Total Cost (\$ M)				Qty (Each) / Total Cost (\$ M)				Qty (Each) / Total Cost (\$ M)				Qty (Each) / Total Cost (\$ M)				Qty (Each) / Total Cost (\$ M)				Qty (Each) / Total Cost (\$ M)				Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)													
Prior Years		24 / 31.353				1 / 0.950				- / -				- / -				- / -				- / -				- / -				- / -				- / -				0 / 0.000				25 / 32.303							
FY 2018		- / -				5 / 2.800				1 / 0.950				- / -				- / -				- / -				- / -				- / -				- / -				0 / 0.000				6 / 3.750							
FY 2019		- / -				- / -				2 / 1.900				3 / 2.850				0 / 0.000				3 / 2.850				- / -				- / -				- / -				0 / 0.000				5 / 4.750							
FY 2020		- / -				- / -				- / -				2 / 1.250				0 / 0.000				2 / 1.250				1 / 0.300				- / -				- / -				0 / 0.000				3 / 1.550							
FY 2021		- / -				- / -				- / -				- / -				- / -				- / -				1 / 0.300				- / -				- / -				0 / 0.000				1 / 0.300							
FY 2022		- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -							
FY 2023		- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -							
FY 2024		- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -							
To Complete		- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -							
Total		24 / 31.353				6 / 3.750				3 / 2.850				5 / 4.100				0 / 0.000				5 / 4.100				1 / 0.300				1 / 0.300				- / -				- / -				0 / 0.000				40 / 42.653			
Installation Schedule																																																	
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot																		
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4																				
In	23	1	1	2	2	1	1	-	2	1	2	-	2	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40														
Out	23	1	1	2	2	1	1	-	2	1	2	-	2	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40														
Footnotes:																																																	
⁽⁵⁾ The FY20 increase in Product Improvement Afloat procurement unit cost is attributed to the variation in the Inc 1 technical refresh buy between FY19 and FY20. In FY20, (3) DCGS-N Inc 1 Tech Refreshes consist of (2) 1-rack Afloat technical refresh and (1) 2-rack Afloat technical refresh. Procurement costs range from \$450K (for End-of-Life Afloat Hardware Upgrade) to \$950K (for 2-rack Afloat technical refresh). Procuring a 2-rack Afloat technical refreshes drives the average unit cost higher in FY20. DCGS-N Inc 1 Block 1 and 2 unit costs represent an average cost based on 3 Rack, 2 Rack, 1 Rack, and End-of-Life Hardware Upgrade configurations dependent on specific platform (CVN, LHD, LCC, LHA), network, infrastructure versions, and alignment with the Navy's Network Infrastructure CCE. In addition, unit costs																																																	

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2914 / Distributed Common Ground System-Navy (DCGS-N)	Modification Number / Title: 1 / PRODUCT IMPROVEMENT Afloat
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
continue to be updated based on actuals costs, locality and availability of platforms, and specific integration tasking associated with external dependent systems (e.g. Global Command and Control System - Maritime (GCCS-M), Radiant Mercury (RM), and others). Installation cost can fluctuate based on system configuration, products being installed and Hull the install is being performed on.		

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Exhibit P-3a, Individual Modification: PB 2020 Navy						Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10				P-1 Line Item Number / Title: 2914 / Distributed Common Ground System-Navy (DCGS-N)				Modification Number / Title: 3 / DCGS-N INCREMENT 2 Ashore			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	0.000	0.000	0.000	10.011	0.000	10.011	9.692	2.108	5.580	5.937	0.000	33.328
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	0.000	0.000	0.000	10.011	0.000	10.011	9.692	2.108	5.580	5.937	0.000	33.328
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	0.000	0.000	0.000	10.011	0.000	10.011	9.692	2.108	5.580	5.937	0.000	33.328
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

DCGS-N Increment 2 addresses a critical shortfall in Tasking, Collection, Processing, Exploitation, and Dissemination (TCPED) capability and capacity to support operational, tactical planning, and execution across the full range of joint military operations. Existing TCPED shortfalls will be exacerbated by planned Navy, Joint, and Allied fielding of new Intelligence, Surveillance and Reconnaissance (ISR) platforms. Currently fielded systems provide localized processing capabilities that will be overwhelmed in future years without a significant change in the way the Navy processes, exploits and disseminates intelligence data. DCGS-N Increment 2 will deliver all source fusion and analytical capabilities; provide Maritime Domain Awareness (MDA) capabilities; integrate Tasking, Collection, Processing, Exploitation, and Dissemination (TCPED) capabilities to improve the use and analysis of sensor and platform data; based on an enterprise solution to share this information across commands, services, and agencies to promote shared situational awareness.

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10				P-1 Line Item Number / Title: 2914 / Distributed Common Ground System-Navy (DCGS-N)				Modification Number / Title: 3 / DCGS-N INCREMENT 2 Ashore					
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: Shore				Modification Type: New Model				Related RDT&E PEs: 0305208N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: DCGS-N INCREMENT 2 Ashore													
B Kits													
Recurring													
1.1.1) Procurements - NonOrganic ⁽⁶⁾	- / -	- / -	- / -	3 / 8.133	- / -	3 / 8.133	4 / 7.129	3 / 1.964	2 / 2.613	3 / 4.235	- / -	15 / 24.074	
Subtotal: Recurring	- / 0.000	- / -	- / -	- / 8.133	- / -	- / 8.133	- / 7.129	- / 1.964	- / 2.613	- / 4.235	- / 0.000	- / 24.074	
Subtotal: DCGS-N INCREMENT 2 Ashore	- / -	- / -	- / -	3 / 8.133	- / -	3 / 8.133	4 / 7.129	3 / 1.964	2 / 2.613	3 / 4.235	- / -	15 / 24.074	
Subtotal: Procurement, All Modification Items	- / 0.000	- / -	- / -	- / 8.133	- / -	- / 8.133	- / 7.129	- / 1.964	- / 2.613	- / 4.235	- / 0.000	- / 24.074	
Support (All Modification Items)													
2.1) Production Support	- / -	- / -	- / -	- / 0.378	- / -	- / 0.378	- / 0.463	- / 0.144	- / 0.138	- / 0.230	- / -	- / 1.353	
Subtotal: Support	- / 0.000	- / -	- / -	- / 0.378	- / -	- / 0.378	- / 0.463	- / 0.144	- / 0.138	- / 0.230	- / 0.000	- / 1.353	
Installation													
Modification Item 1 of 1: DCGS-N INCREMENT 2 Ashore	- / 0.000	- / 0.000	- / 0.000	- / 1.500	- / 0.000	- / 1.500	- / 2.100	- / 0.000	- / 2.829	- / 1.472	- / 0.000	- / 7.901	
Subtotal: Installation	- / 0.000	- / -	- / -	- / 1.500	- / -	- / 1.500	- / 2.100	- / -	- / 2.829	- / 1.472	- / 0.000	- / 7.901	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	0.000	10.011	0.000	10.011	9.692	2.108	5.580	5.937	0.000	33.328	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10										P-1 Line Item Number / Title: 2914 / Distributed Common Ground System-Navy (DCGS-N)										Modification Number / Title: 3 / DCGS-N INCREMENT 2 Ashore											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: DCGS-N INCREMENT 2 Ashore																															
Manufacturer Information																															
Manufacturer Name: SSC PAC ⁽⁷⁾															Manufacturer Location: San Diego, CA																
Administrative Leadtime (in Months): 2															Production Leadtime (in Months): 8																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates										Dec 2019																					
Delivery Dates										Aug 2020																					
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: Procurements																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2020		- / -		- / -		- / -		3 / 1.500		0 / 0.000		3 / 1.500		- / -		- / -		- / -		- / -		- / -		0 / 0.000		3 / 1.500					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		4 / 2.100		- / -		- / -		- / -		- / -		0 / 0.000		4 / 2.100					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		3 / 1.800		- / -		- / -		0 / 0.000		3 / 1.800					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		2 / 1.029		- / -		- / -		0 / 0.000		2 / 1.029					
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		3 / 1.472		- / -		0 / 0.000		3 / 1.472					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
Total		- / -		- / -		- / -		3 / 1.500		0 / 0.000		3 / 1.500		4 / 2.100		- / -		5 / 2.829		3 / 1.472		0 / 0.000		15 / 7.901							
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	4	-	-	-	-	1	1	1	2	-	-	-	3	-	15
Out	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	4	-	-	-	-	1	1	1	2	-	-	-	3	-	15

Footnotes:

⁽⁶⁾ In FY20, (3) DCGS-N Increment 2 Ashore systems will consist of (1) 3-rack Maritime Operations Centers (MOC) Ashore system and (2) 3-rack Training Ashore system. Procurement costs range from \$540K (for 3-rack MOC Ashore system) to \$3,616K (for 3-rack Training Ashore system) including additional workstations to support classroom requirements.

⁽⁷⁾ After the unit delivered there is additional time required for minimal integration and initial load of the data store

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment	P-1 Line Item Number / Title: 2915 / CANES

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0303138N

Line Item MDAP/MAIS Code: M417

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1,551.809	311.212	404.891	426.654	0.000	426.654	360.073	398.704	395.623	391.722	2,760.510	7,001.198
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,551.809	311.212	404.891	426.654	0.000	426.654	360.073	398.704	395.623	391.722	2,760.510	7,001.198
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1,551.809	311.212	404.891	426.654	0.000	426.654	360.073	398.704	395.623	391.722	2,760.510	7,001.198
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	11.645	6.240	8.021	-	8.021	6.155	2.607	6.961	7.112	15.000	63.741
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Consolidated Afloat Networks and Enterprise Services (CANES) is the Navy's Program of Record (POR) to replace and modernize existing afloat networks with the necessary hardware, software and enterprise services infrastructure to enable information warfare from and within the tactical domain. CANES provides complete infrastructure inclusive of hardware, software, processing, storage and end user devices for the Unclassified, Coalition, Secret and Sensitive Compartmented Information (SCI) enclaves to a wide variety of Navy surface combatants, submarines, Maritime Operations Centers, and Aegis Ashore sites. CANES services include application hosting, data transport and storage, system management, cyber security, email, web, chat, collaboration, and voice and video services. CANES is based on the overarching concept of reducing the number of afloat networks and providing enhanced efficiency through a single engineering focus on integrated technical solutions. It allows for streamlined acquisition, contracting, test events, sustainment, and significant lifecycle efficiencies through consolidation of multiple configuration management baselines, logistics, and training efforts into a single unified support structure.

More than eighty (80) hosted applications and systems inclusive of Command and Control, Intelligence, Surveillance and Reconnaissance, Information Operations, Logistics and Business domains require the CANES infrastructure to operate in the tactical environment. Specific programs, such as Distributed Common Ground System - Navy (DCGS-N), Global Command and Control System - Maritime (GCCS-M), Naval Tactical Command Support System (NTCSS), and Undersea Warfare Decision Support System (USW-DSS), no longer provide their own independent network hardware and now depend on CANES to field, host, and sustain their capabilities. The CANES Application Integration program provides common software governance, testing, processes, and tools to application developers, and evaluates and confirms compatibility between CANES and the hosted applications prior to fielding. CANES also provides a set of capabilities called Agile Core Services (ACS) which brings common network services to allow hosted application developers to focus on the unique capabilities they provide.

CANES is funded and programmed to develop regular technical updates with an agile and robust hardware and software baseline development cycle necessary to pace rapidly evolving cyber security threats and meet emerging operational demands within the tactical domain. In order to deliver a mission effective, secure and affordable afloat network, CANES implements a Development Operations (DevOps) framework to improve its engineering processes and speed the deployment of new cyber security, application hosting and baseline updates. CANES requires that Automated Digital Network System (ADNS) field prior to or concurrently with CANES due to the architectural reliance between the two programs.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment						P-1 Line Item Number / Title: 2915 / CANES				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: 0303138N				
Line Item MDAP/MAIS Code: M417										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / Consolidated Prior Year Requirements				- / 179.317	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	1 / 5F010/5F777 CANES - Afloat Non-MIP (TBD)				- / 1,363.125	- / 309.057	- / 381.670	- / 388.646	- / 0.000	- / 388.646
P-3a	2 / 5F010/5F776 CANES - Ashore Non-MIP (TBD)				- / 9.367	- / 2.155	- / 23.221	- / 38.008	- / 0.000	- / 38.008
P-40	Total Gross/Weapon System Cost				- / 1,551.809	- / 311.212	- / 404.891	- / 426.654	- / 0.000	- / 426.654
Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / Consolidated Prior Year Requirements				- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / 5F010/5F777 CANES - Afloat Non-MIP (TBD)				- / 345.511	- / 395.414	- / 388.531	- / 369.697	- / 2,666.597	- / 6,608.248
P-3a	2 / 5F010/5F776 CANES - Ashore Non-MIP (TBD)				- / 14.562	- / 3.290	- / 7.092	- / 22.025	- / 93.913	- / 213.633
P-40	Total Gross/Weapon System Cost				- / 360.073	- / 398.704	- / 395.623	- / 391.722	- / 2,760.510	- / 7,001.198
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										
Justification: The FY20 increase in the CANES funding profile optimizes the Chief of Naval Operations (CNO) ship availabilities with the CANES program's capacity and capability to procure and install the product. This ensures CANES is deployed to the Fleet as quickly and effectively as possible to mitigate heightened cyber security threats across Navy tactical networks and supports the DoD direction to remove End of Life (EOL) Windows Operating Systems software from the Fleet as quickly as feasible. Microsoft's end of cyber security support for legacy versions of Windows, as well as networks that rely on obsolete hardware and software, are driving increased sustainment costs, reducing operational availability and creating critical cyber security vulnerability in Navy Tactical Networks. Replacing these legacy networks and modernizing the tactical environment with CANES is the cornerstone for all C4ISR investments. CANES is a mature program with an innovative Multi Award Contract (MAC) in place that has consistently proven capable of delivering on or ahead of schedule. Additionally, it has decreased its installation time and continues to work towards decreasing ship touch time during installations. The MAC ensures enough capacity to execute production and installation growth. FY 2020 - CANES funds are for the procurement of (18) Afloat production units (4 Force Level, 6 Unit Level, 8 Subs) and (18) Technical Insertion units (5 Force Level, 7 Unit Level, 6 Subs), with integration and associated costs for pre-installation design and the installation of (14) Afloat production units and (22) Technical Insertion units. CANES funds will also be used for the procurement (5) Ashore units and (0) Ashore Technical Insertion units and the installation of (3) Ashore units. It is important to note that procurement quantities across the FYDP are the same CANES end item products referenced in CANES LI 2925. Installation quantities represent sites receiving CANES as also referenced in LI 2925. The associated dollars in this exhibit represent the non-Intell portions of the CANES enclave.										

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10						P-1 Line Item Number / Title: 2915 / CANES						Item Number / Title [DODIC]: 1 / Consolidated Prior Year Requirements						
ID Code (A=Service Ready, B=Not Service Ready) :									MDAP/MAIS Code:									
Resource Summary				Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total				
Procurement Quantity <i>(Units in Each)</i>				-		-		-		-		-		-				
Gross/Weapon System Cost <i>(\$ in Millions)</i>				179.317		0.000		0.000		0.000		0.000		0.000				
Less PY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Net Procurement (P-1) <i>(\$ in Millions)</i>				179.317		0.000		0.000		0.000		0.000		0.000				
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Total Obligation Authority <i>(\$ in Millions)</i>				179.317		0.000		0.000		0.000		0.000		0.000				
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>																		
Initial Spares <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>				-		-		-		-		-		-				
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Flyaway - Consolidated Prior Year Requirements Cost																		
Non Recurring Cost																		
1.1.1) Consolidated Prior Year Requirements	-	-	179.317	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Non Recurring Cost	-	-	179.317	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Flyaway - Consolidated Prior Year Requirements Cost	-	-	179.317	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Gross/Weapon System Cost	-	-	179.317	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Remarks: Consolidated Prior Year Requirements consists of: 1) CANES European Reassurance Initiative, 2) Operation Rolling Tide, and 3) Automated Digital Network System.																		

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Exhibit P-3a, Individual Modification: PB 2020 Navy						Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10				P-1 Line Item Number / Title: 2915 / CANES				Modification Number / Title: 1 / 5F010/5F777 CANES - Afloat Non-MIP			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:					

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1,363.125	309.057	381.670	388.646	0.000	388.646	345.511	395.414	388.531	369.697	2,666.597	6,608.248
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,363.125	309.057	381.670	388.646	0.000	388.646	345.511	395.414	388.531	369.697	2,666.597	6,608.248
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1,363.125	309.057	381.670	388.646	0.000	388.646	345.511	395.414	388.531	369.697	2,666.597	6,608.248
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The consolidation of existing Afloat Network programs of record designed to provide an agile, responsive Common Computing Environment (CCE) and Agile Core Services (ACS) within and upon which application developers will host Command and Control, Warfare, Intelligence, Logistics, and business and education applications and services. Migration of Non-Classified Enclave (NCE) capabilities into the CANES baseline. CANES is a mature program required to mitigate heightened cyber security threats across Navy tactical networks.

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10					P-1 Line Item Number / Title: 2915 / CANES					Modification Number / Title: 1 / 5F010/5F777 CANES - Afloat Non-MIP			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: Consolidated Afloat Networks & Enterprise Services (CANES) Non-MIP					Modification Type: TBD					Related RDT&E PEs: 0303138N			
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: 5F010/5F777 CANES - Afloat Non-MIP													
B Kits													
Recurring													
1.1.1) CANES - Afloat 5F010/5F777 (Non-MIP) - NonOrganic ⁽¹⁾	86 / 543.306	20 / 120.459	14 / 84.024	18 / 107.924	- / -	18 / 107.924	19 / 111.008	12 / 66.333	12 / 67.561	1 / 5.541	- / -	182 / 1,106.156	
1.1.2) CANES - Afloat Technical Insertion (Non-MIP) - NonOrganic ⁽²⁾	14 / 49.920	9 / 45.190	22 / 116.401	18 / 96.257	- / -	18 / 96.257	14 / 61.558	41 / 176.724	22 / 101.153	48 / 217.373	337 / 1,469.121	525 / 2,333.697	
1.1.3) CANES - Service Life Extension Program (SLEP) (Non-MIP) - NonOrganic	8 / 8.424	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	8 / 8.424	
Subtotal: Recurring	- / 601.650	- / 165.649	- / 200.425	- / 204.181	- / -	- / 204.181	- / 172.566	- / 243.057	- / 168.714	- / 222.914	- / 1,469.121	- / 3,448.277	
Non-Recurring													
1.2.1) CANES - Afloat First Articles (Non-MIP) - Organic ⁽³⁾	11 / 71.527	1 / 7.563	1 / 7.499	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	13 / 86.589	
1.2.2) CANES - Non-Recurring Engineering (Non-MIP) - Organic	- / 26.907	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 26.907	
Subtotal: Non-Recurring	- / 98.434	- / 7.563	- / 7.499	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 113.496	
Subtotal: 5F010/5F777 CANES - Afloat Non-MIP	119 / 700.084	30 / 173.212	37 / 207.924	36 / 204.181	- / -	36 / 204.181	33 / 172.566	53 / 243.057	34 / 168.714	49 / 222.914	337 / 1,469.121	728 / 3,561.773	
Subtotal: Procurement, All Modification Items	- / 700.084	- / 173.212	- / 207.924	- / 204.181	- / -	- / 204.181	- / 172.566	- / 243.057	- / 168.714	- / 222.914	- / 1,469.121	- / 3,561.773	
Support (All Modification Items)													
2.1) CANES - Afloat Production Support (Non-MIP)	- / 30.932	- / 8.718	- / 9.881	- / 9.744	- / 0.000	- / 9.744	- / 8.261	- / 11.604	- / 8.068	- / 10.640	- / 69.820	- / 167.668	
2.2) CANES - Afloat Design Service Agent (Non-MIP)	- / 55.627	- / 12.540	- / 14.707	- / 12.066	- / 0.000	- / 12.066	- / 11.673	- / 10.432	- / 13.288	- / 11.423	- / 63.429	- / 205.185	
Subtotal: Support	- / 86.559	- / 21.258	- / 24.588	- / 21.810	- / -	- / 21.810	- / 19.934	- / 22.036	- / 21.356	- / 22.063	- / 133.249	- / 372.853	
Installation													
Modification Item 1 of 1: 5F010/5F777 CANES - Afloat Non-MIP	- / 576.482	- / 114.587	- / 149.158	- / 162.655	- / 0.000	- / 162.655	- / 153.011	- / 130.321	- / 198.461	- / 124.720	- / 1,064.227	- / 2,673.622	
Subtotal: Installation	- / 576.482	- / 114.587	- / 149.158	- / 162.655	- / -	- / 162.655	- / 153.011	- / 130.321	- / 198.461	- / 124.720	- / 1,064.227	- / 2,673.622	
Total													
Total Cost (Procurement + Support + Installation)	1,363.125	309.057	381.670	388.646	0.000	388.646	345.511	395.414	388.531	369.697	2,666.597	6,608.248	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10				P-1 Line Item Number / Title: 2915 / CANES				Modification Number / Title: 1 / 5F010/5F777 CANES - Afloat Non-MIP				
ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Modification Item 1 of 1: 5F010/5F777 CANES - Afloat Non-MIP												
Manufacturer Information												
Manufacturer Name: Multiple Vendors (CANES - Afloat 5F010/5F777) ⁽⁴⁾						Manufacturer Location: Various						
Administrative Leadtime (in Months): 1						Production Leadtime (in Months): 6						
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates	Nov 2017	Dec 2018	Nov 2019									
Delivery Dates	May 2018	Jun 2019	May 2020									
Manufacturer Name: Multiple Vendors (CANES - Afloat Technical Insertion) ⁽⁵⁾						Manufacturer Location: Various						
Administrative Leadtime (in Months): 1						Production Leadtime (in Months): 6						
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates	Nov 2017	Dec 2018	Nov 2019									
Delivery Dates	May 2018	Jun 2019	May 2020									
Installation Information												
Method of Implementation: [none specified]:: Installation Name: CANES - Afloat 5F010/5F777 (Non-MIP)												
Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	76 / 547.802	10 / 77.854	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	86 / 625.656
FY 2018	- / -	- / -	20 / 119.938	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	20 / 119.938
FY 2019	- / -	- / -	- / -	14 / 85.915	0 / 0.000	14 / 85.915	- / -	- / -	- / -	- / -	0 / 0.000	14 / 85.915
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	18 / 93.328	- / -	- / -	- / -	0 / 0.000	18 / 93.328
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	19 / 85.636	- / -	- / -	0 / 0.000	19 / 85.636
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	12 / 58.541	- / -	0 / 0.000	12 / 58.541
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	12 / 56.139	0 / 0.000	12 / 56.139
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 4.880	1 / 4.880
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	76 / 547.802	10 / 77.854	20 / 119.938	14 / 85.915	0 / 0.000	14 / 85.915	18 / 93.328	19 / 85.636	12 / 58.541	12 / 56.139	1 / 4.880	182 / 1,130.033

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Exhibit P-3a, Individual Modification: PB 2020 Navy																								Date: March 2019							
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10												P-1 Line Item Number / Title: 2915 / CANES												Modification Number / Title: 1 / 5F010/5F777 CANES - Afloat Non-MIP							
ID Code (A=Service Ready, B=Not Service Ready) :																		MDAP/MAIS Code:													
Modification Item 1 of 1: 5F010/5F777 CANES - Afloat Non-MIP																															
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: CANES - Afloat 5F010/5F777 (Non-MIP)																															
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	76	-	3	3	1	4	11	2	6	1	6	4	3	3	9	3	3	2	9	6	2	5	3	3	1	2	5	4	1	1	182
Out	71	5	-	3	3	1	4	11	2	6	1	6	4	3	3	9	3	3	2	9	6	2	5	3	3	1	2	5	4	2	182
Method of Implementation: [none specified]:: Installation Name: CANES - Afloat Technical Insertion (Non-MIP)																															
Installation Cost		Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total																		
		<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>																	
Prior Years		5 / 21.481	9 / 36.733	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	14 / 58.214																		
FY 2018		- / -	- / -	9 / 29.220	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	9 / 29.220																		
FY 2019		- / -	- / -	- / -	22 / 76.740	0 / 0.000	22 / 76.740	- / -	- / -	- / -	- / -	0 / 0.000	22 / 76.740																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	18 / 59.683	- / -	- / -	- / -	0 / 0.000	18 / 59.683																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	14 / 44.685	- / -	- / -	0 / 0.000	14 / 44.685																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	41 / 139.920	- / -	0 / 0.000	41 / 139.920																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	22 / 68.581	0 / 0.000	22 / 68.581																		
FY 2024		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	48 / 132.096	48 / 132.096																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	337 / 927.251	337 / 927.251																		
Total		5 / 21.481	9 / 36.733	9 / 29.220	22 / 76.740	0 / 0.000	22 / 76.740	18 / 59.683	14 / 44.685	41 / 139.920	22 / 68.581	385 / 1,059.347	525 / 1,536.390																		
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	5	-	4	1	4	2	2	1	4	5	4	10	3	2	5	6	5	2	3	2	7	4	19	6	12	2	7	7	6	385	525
Out	5	-	-	4	1	4	2	2	1	4	5	4	10	3	2	5	6	5	2	3	2	7	4	19	6	12	2	7	7	391	525

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2915 / CANES	Modification Number / Title: 1 / 5F010/5F777 CANES - Afloat Non-MIP

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:

Modification Item 1 of 1: 5F010/5F777 CANES - Afloat Non-MIP

Installation Information

Method of Implementation: [none specified]:: Installation Name: CANES - Service Life Extension Program (SLEP) (Non-MIP)

Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	8 / 7.199	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	8 / 7.199
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	8 / 7.199	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	8 / 7.199

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
Out	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8

Method of Implementation (Organic): CANES - Afloat First Articles (Non-MIP) - Not Installed	Installation Quantity: 13

Footnotes:

(1) The decrease in production unit cost from FY19 to FY20 is due to a lower percentage of more expensive Force Level units in FY20 compared to FY19. - The procurement average unit cost fluctuation is due to variance in system configuration requirements for each CANES platform type. Furthermore, because CANES production units and installations are procured through separate multiple award contracts, there are unit cost fluctuations associated with the contracting process. A CANES unit level platform (DDG/CG/LSD) requires a smaller system, supporting fewer users and applications than force level platforms with a greater number of users and applications. For example, a CANES DDG design consists of 18 equipment racks and ~400 workstations, while a CANES CVN system consists of 48 equipment racks and ~3000 workstations. The average procurement cost (hardware, software, integration, and engineering support) for a unit level ship ranges from \$5.2M to \$7.5M, while the average procurement cost for a force level platform ranges from \$11.8M to \$15.6M, and submarine unit procurement costs range from \$2.7M to \$4.6M. These costs include both the MIP and non-MIP components of the CANES units. - CANES Afloat installations are conducted across several fleet concentration areas supported by six installation Multiple Award Contract (MAC) holders. The SPAWAR Fleet Readiness Directorate (FRD) Installation Organization (FIO) has ensured sufficient Alteration Installation Teams (AIT) resources are available to meet the FY20 - 24 CANES installation plan. - CANES Afloat production units require an additional 5 months after delivery for integration, assembly and testing prior to installation start. Installations do not begin until 11 months after contract award (6 months production lead time (PLT) + 5 months integration). Total lead time, including admin lead time, is 12 months. - Installation cost fluctuations are attributed to and dependent on ship class, variant of predecessor system the hull currently has installed. As an

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2915 / CANES	Modification Number / Title: 1 / 5F010/5F777 CANES - Afloat Non-MIP
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
example of variant differences, if a CVN has an ISNS Delta variant installed, a CANES installation is estimated to be \$18.2M. If that same CVN had a legacy Asynchronous Transfer Mode Local Area Network (ATM LAN) the CANES installation is estimated to be \$22.4M. This cost is driven by a number of issues such as the requirement for new or additional wiring, equipment, and configuration changes. (2) The increase in production unit cost from FY19 to FY20 is due to a higher percentage of more expensive Force Level units in FY20 compared to FY19. - CANES technical insertion installations are conducted across several fleet concentration areas supported by six installation Multiple Award Contract (MAC) holders. The SPAWAR Fleet Readiness Directorate (FRD) Installation Organization (FIO) has ensured sufficient Alteration Installation Teams (AIT) resources are available to meet the FY20 - 24 CANES installation plan. - CANES Afloat technical insertion units require an additional 5 months after delivery for operational integration, assembly and testing prior to installation start. Installations do not begin until 11 months after contract award (6 months production lead time (PLT) + 5 months integration). Total lead time, including admin lead time, is 12 months. (3) CANES first articles are defined as necessary production design drawings, environmental (shock and vibration) qualifications, logistics and training artifacts as well as a certified tested baseline provided to the government for each platform first of its kind. First articles are separate from production units and must be bought prior to the procurement of the corresponding production units. Procurement Lead Time (PLT) is 8 months for First Articles (DDG,CVN, submarines, etc). All following production articles of the same variant require a PLT of 6 months. CANES First Articles are not installed. Average unit cost fluctuations are attributable to variances in system configuration requirements among platforms. A DDG/CG/LSD (unit level platforms) has fewer users and runs fewer applications than a LHD/CVN/LPD (force level platforms). Force level platforms are larger in scale compared to the unit level ships and represent a super set of users, applications and connected systems. (4) CANES: Full Production Contract has 7 possible vendors on MAC award: Northrop Grumman Systems Corp, BAE Sytems Technology Solutions & Services, General Dynamics C4 Systems, Global Technical Systems, SERCO, Inc, CGI Federal Inc, DRS Laurel Technologies. Contract will be used for both production and tech refresh units (5) CANES: Full Production Contract has 7 possible vendors on MAC award: Northrop Grumman Systems Corp, BAE Sytems Technology Solutions & Services, General Dynamics C4 Systems, Global Technical Systems, SERCO, Inc, CGI Federal Inc, DRS Laurel Technologies. Contract will be used for both production and tech refresh units		

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10					P-1 Line Item Number / Title: 2915 / CANES					Modification Number / Title: 2 / 5F010/5F776 CANES - Ashore Non-MIP		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	9.367	2.155	23.221	38.008	0.000	38.008	14.562	3.290	7.092	22.025	93.913	213.633
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	9.367	2.155	23.221	38.008	0.000	38.008	14.562	3.290	7.092	22.025	93.913	213.633
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	9.367	2.155	23.221	38.008	0.000	38.008	14.562	3.290	7.092	22.025	93.913	213.633
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: The consolidation of existing Ashore Network programs of record designed to provide a single, agile, responsive Common Computing Environment (CCE) hardware and software suite which will host Command and Control, Warfare, Intelligence, Logistics, Business, and Education/Training applications and services for Maritime Operation Centers (MOC), Aegis Ashore (AA), and Technical Training Equipment (TTE) sites. CANES will provide complete Local Area Network (LAN) infrastructure and services inclusive of hardware, software, processing, storage, workstations, and tablets for all basic network services (email, web, chat, collaboration) at these sites.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10					P-1 Line Item Number / Title: 2915 / CANES					Modification Number / Title: 2 / 5F010/5F776 CANES - Ashore Non-MIP			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: Consolidated Afloat Networks & Enterprise Services (CANES) Non-MIP					Modification Type: TBD					Related RDT&E PEs: 0303138N			
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
<i>Modification Item 1 of 1:</i> 5F010/5F776 CANES - Ashore Non-MIP													
B Kits													
Recurring													
1.1.1) CANES - Ashore 5F010/5F776 (Non-MIP) - NonOrganic ⁽⁶⁾	2 / 3.637	1 / 1.097	3 / 16.179	5 / 26.751	- / -	5 / 26.751	- / -	- / -	- / -	- / -	- / -	11 / 47.664	
1.1.2) CANES - Ashore - Technical Insertion (Non-MIP) - NonOrganic	- / -	- / -	2 / 4.139	- / -	- / -	- / -	- / -	1 / 2.214	2 / 4.541	8 / 16.980	24 / 55.849	37 / 83.723	
<i>Subtotal: Recurring</i>	- / 3.637	- / 1.097	- / 20.318	- / 26.751	- / -	- / 26.751	- / -	- / 2.214	- / 4.541	- / 16.980	- / 55.849	- / 131.387	
Non-Recurring													
1.2.1) CANES - Ashore First Articles (Non-MIP) - Organic ⁽⁷⁾	1 / 3.481	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 3.481	
<i>Subtotal: Non-Recurring</i>	- / 3.481	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 3.481	
<i>Subtotal: 5F010/5F776 CANES - Ashore Non-MIP</i>	3 / 7.118	1 / 1.097	5 / 20.318	5 / 26.751	- / -	5 / 26.751	- / -	1 / 2.214	2 / 4.541	8 / 16.980	24 / 55.849	49 / 134.868	
<i>Subtotal: Procurement, All Modification Items</i>	- / 7.118	- / 1.097	- / 20.318	- / 26.751	- / -	- / 26.751	- / -	- / 2.214	- / 4.541	- / 16.980	- / 55.849	- / 134.868	
Support (All Modification Items)													
2.1) CANES - Ashore Production Support (Non-MIP)	- / 0.129	- / 0.058	- / 0.965	- / 1.272	- / -	- / 1.272	- / -	- / 0.106	- / 0.216	- / 0.808	- / 2.654	- / 6.208	
2.2) CANES - Ashore Design Services Agent (Non-MIP) ⁽⁸⁾	- / -	- / -	- / -	- / 1.910	- / -	- / 1.910	- / 2.033	- / -	- / -	- / 2.109	- / 2.269	- / 8.321	
<i>Subtotal: Support</i>	- / 0.129	- / 0.058	- / 0.965	- / 3.182	- / -	- / 3.182	- / 2.033	- / 0.106	- / 0.216	- / 2.917	- / 4.923	- / 14.529	
Installation													
<i>Modification Item 1 of 1:</i> 5F010/5F776 CANES - Ashore Non-MIP	- / 2.120	- / 1.000	- / 1.938	- / 8.075	- / 0.000	- / 8.075	- / 12.529	- / 0.970	- / 2.335	- / 2.128	- / 33.141	- / 64.236	
<i>Subtotal: Installation</i>	- / 2.120	- / 1.000	- / 1.938	- / 8.075	- / -	- / 8.075	- / 12.529	- / 0.970	- / 2.335	- / 2.128	- / 33.141	- / 64.236	
Total													
Total Cost (Procurement + Support + Installation)	9.367	2.155	23.221	38.008	0.000	38.008	14.562	3.290	7.092	22.025	93.913	213.633	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10										P-1 Line Item Number / Title: 2915 / CANES										Modification Number / Title: 2 / 5F010/5F776 CANES - Ashore Non-MIP											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: 5F010/5F776 CANES - Ashore Non-MIP																															
Manufacturer Information																															
Manufacturer Name: TBD (Competitive Procurement) ⁽⁹⁾															Manufacturer Location: TBD (Competitive Procurement)																
Administrative Leadtime <i>(in Months)</i> : 1															Production Leadtime <i>(in Months)</i> : 6																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates		Feb 2018				Dec 2018				Nov 2019																					
Delivery Dates		Aug 2018				Jun 2019				May 2020																					
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: CANES - Ashore 5F010/5F776 (Non-MIP)																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		2 / 2.120		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 2.120					
FY 2018		- / -		1 / 1.000		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		1 / 1.000					
FY 2019		- / -		- / -		- / -		3 / 8.075		0 / 0.000		3 / 8.075		- / -		- / -		- / -		- / -		- / -		0 / 0.000		3 / 8.075					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		5 / 12.529		- / -		- / -		- / -		- / -		0 / 0.000		5 / 12.529					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
Total		2 / 2.120		1 / 1.000		- / -		3 / 8.075		0 / 0.000		3 / 8.075		5 / 12.529		- / -		- / -		- / -		- / -		0 / 0.000		11 / 23.724					
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	2	-	-	-	1	-	-	-	-	1	2	-	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11
Out	2	-	-	-	-	1	-	-	-	-	1	2	-	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2915 / CANES	Modification Number / Title: 2 / 5F010/5F776 CANES - Ashore Non-MIP

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:

Modification Item 1 of 1: 5F010/5F776 CANES - Ashore Non-MIP

Installation Information

Method of Implementation: [none specified]:: Installation Name: CANES - Ashore - Technical Insertion (Non-MIP)

Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	2 / 1.938	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 1.938
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.970	- / -	- / -	0 / 0.000	1 / 0.970
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 2.335	- / -	0 / 0.000	2 / 2.335
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 2.128	6 / 6.414	8 / 8.542
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	24 / 26.727	24 / 26.727
Total	- / -	- / -	2 / 1.938	- / -	- / -	- / -	- / -	1 / 0.970	2 / 2.335	2 / 2.128	30 / 33.141	37 / 40.512

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	1	-	-	-	2	-	-	-	2	30	37	
Out	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	1	-	-	-	2	-	-	-	32	37	

Method of Implementation (Organic): CANES - Ashore First Articles (Non-MIP) - Not Installed	Installation Quantity: 1

Footnotes:

⁽⁶⁾ Ashore procurement quantities are detailed as follows: Technical Training Equipment (TTE) - PY (2), FY18(1), FY20-FY24 (0); Maritime Operation Center (MOC)(including Aegis Ashore) - PY (0); FY19 (3), FY20 (5), FY21-24(0). -A MOC is a fully operational system configuration. A TTE configuration is a subset of a MOC configuration. This scale difference accounts for the fluctuation in per unit costs across fiscal years commensurate with the procurement quantities outlined in above note. -TTE has no associated DSA requirements.

⁽⁷⁾ Production Lead Time is 8 months for First Articles. First Articles are defined as necessary production design drawings, environmental (shock and vibration) qualifications, logistics and training artifacts as well as a certified tested baseline provided to the government for each platform first of its kind. All following articles of the same variant require a Production Lead Time of 5 months for Ashore units and 6 months for afloat units. Total Ashore lead time, including 1 month Admin lead time and 4 months for integration, assembly and testing, is 10 months. Ashore production lead times require one month less than Afloat due to minimized shock and vibration requirements for shore facilities. CANES First Articles are not installed. First Article average unit cost fluctuations are attributable to variances in system configuration requirements among shore sites. A shore training unit (TTE) has fewer users and runs fewer applications than a shore Maritime Operations Center (MOC). MOCs are larger in scale compared to the shore training sites and represent a super set of users, applications and connected systems.

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2915 / CANES	Modification Number / Title: 2 / 5F010/5F776 CANES - Ashore Non-MIP
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
⁽⁸⁾ Prior to FY19, all Ashore units consisted of TTE procurements and installations, which do not require DSA, all Ashore units procured in FY20 are MOC units, which require DSA. ⁽⁹⁾ CANES: Full Production Contract has 7 possible vendors on MAC award: Northrop Grumman Systems Corp, BAE Sytems Technology Solutions & Services, General Dynamics C4 Systems, Global Technical Systems, SERCO, Inc, CGI Federal Inc, DRS Laurel Technologies. Contract will be used for both production and tech refresh units		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment							P-1 Line Item Number / Title: 2920 / RADIAC					
ID Code (A=Service Ready, B=Not Service Ready): B				Program Elements for Code B Items: 0708017N				Other Related Program Elements: 0603542N, 0702856N				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	54.909	10.718	8.175	6.450	0.000	6.450	8.235	8.124	7.822	7.980	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	54.909	10.718	8.175	6.450	0.000	6.450	8.235	8.124	7.822	7.980	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	54.909	10.718	8.175	6.450	0.000	6.450	8.235	8.124	7.822	7.980	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:
The FY 2020 funding request was reduced by \$1.0 million to account for the availability of prior year execution balances.

The Radiation Detection, Indication and Computation (RADIAC) Program is responsible for providing radiation monitoring instruments that detect and measure ionizing radiation. These instruments are used on all Navy, Coast Guard and Military Sealift Command vessels, and at every Navy shore installation, in order to ensure the safety of personnel, continuity of operations in radiological or nuclear contingencies, and protection of the environment.

[P40A / M2100 - Survey Meters]: M2100. Radiation survey meters, required by 10 CFR 20 and the Navy's mission, are used to detect, measure and monitor radiation levels in support of operations involving radioactive materials. Navy operations associated with radioactive materials include operation of nuclear reactors, maintenance on radioactive systems or components, testing of components for structural integrity (X-ray), research, and medical diagnostics and treatment. Additionally, radiation survey meters are used to search for, locate and intercept radioactive material, and in responding to casualties involving radioactive materials. Where radiation survey meters are used to support operations involving radioactive material, they provide real-time information used to control personnel radiation exposure and to identify and control the spread of radioactivity. When used to search for radioactive material, they provide an extremely reliable method of identifying radioactive material while minimizing the risk to personnel conducting these operations.

[P40A / Radiological Detection System]: M2100, Radiological Detection System (RDS): This is a basic RADIAC instrument used in Consequence Management and Occupational Safety and Health applications by all ships (U.S. Navy, U.S. Coast Guard and Military Sealift Command) and shore commands. It is used to survey for radioactive surface contamination pursuant to nuclear plant operations or nuclear plant maintenance; following medical procedures involving radioactive isotopes; or casualties and events that release radioactivity into the environment such as after a nuclear reactor accident or the use of weapons involving nuclear devices or radioactivity. It is also used to perform surveys for various types of radiation in order to monitor environmental conditions in areas and spaces immediately adjacent to where radioactive material is stored or used during routine operations; where nuclear plant operations occur; and where radioisotopes are used for maintenance, such as during industrial radiography operations.

The RDS consists of a Control Unit and a suite of probes that survey for different types of radioactivity (Alpha, Beta, Gamma, Neutron). Also part of the procurement will be various types of connecting cables; carrying cases; telescoping handles; and three specialty probes. The Control Unit is necessary for all applications while the probes are used for different applications. That means the Control Unit will have the highest procurement objective and the probes and ancillary equipment will be bought in varying quantities.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment		P-1 Line Item Number / Title: 2920 / RADIAC
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 0708017N	Other Related Program Elements: 0603542N, 0702856N
Line Item MDAP/MAIS Code: N/A		
This instrument will replace the Navy's 30-year old IM-265/PDQ Multi-Function RADIAC Control Unit and its probes. The RDS is being developed by the Joint Product Leader for Radiological and Nuclear Defense (JPdL-RND) in order that the Army, Navy, Marine Corps and Air Force will all have a Joint instrument that will enable interoperability and surge support of assets from all the components to forward deployed units in a theater of operations where a radiological event arises. [P40A / M2200 - Dosimetry]: M2200. Dosimetry consists of radiation sensitive materials that are used for detecting and measuring an individual's exposure to ionizing radiation and to aid in minimizing this exposure. Dosimetry is required to be worn by personnel who work with sources of radioactivity or by personnel responding to casualties involving radioactivity. Most dosimeters are small devices that are worn on the belt, on a lanyard around the neck or attached to a shirt. Some dosimeters provide direct readout enabling the wearer to monitor and control radiation exposure. Other types of dosimeters must be removed from the wearer to be evaluated in special dosimeter readers that extract the recorded radiation exposure value from the dosimeter. Radiation exposure measured by dosimetry is recorded in individual medical records when formal tracking of the radiation exposure is required. In accordance with 10 CFR 20, dosimetry is required to be worn by personnel who work with sources of radioactivity. In the Navy this includes personnel in the Nuclear Propulsion, Nuclear Weapons, and Medical and Radiological Affairs Support programs. In these programs radiation exposure is measured by dosimetry and recorded in individual medical records for tracking purposes. Dosimetry is also worn by personnel responding to casualties involving radioactivity to control their exposure within acceptable levels. [P40A / DT-702 Card Holder]: M2200, DT-702 Card Holder: A plastic case into which the DT-702 card is placed for the card's protection and so it can be worn on a lanyard or on a belt. It has four circular windows made of specific materials of various thickness to allow the proper filtration of radiation to the dosimeter elements under each of the windows. [P40A / Extremity Dosimeter]: M2200, Extremity Dosimeter: An extremity dosimeter is used to measure concentrated exposure to the hands when a radiation worker is reaching into a glove box or medical personnel are performing fluoroscopy tasks. This item is composed of three inexpensive pieces: 1) a plastic ring (\$2) to wear on a finger; 2) a dosimeter (\$36) that measures exposure; and 3) a cap that secures the dosimeter to the ring. The cap is made to a specific thickness depending on the type of radiation the dosimeter is intended to measure (\$3). These items will be procured in quantities of 3,000 each. An average unit cost for the three items is used and all 9,000 components are shown on this one Cost Element. [P40A / Accident Dosimeter]: M2200, Accident Dosimeter: The Accident Dosimeter is a passive type nuclear dosimeter capable of detecting and recording fast neutron radiation exposures. These dosimeters are used to determine radiation dose to the crew in the event of an accident affecting operation of a nuclear reactor. These dosimeters are fastened near or adjacent to reactor compartments on all Navy submarines and carriers. [P40A / Accident Dosimeter High Purity Germanium Detector]: M2200, Accident Dosimeter High Purity Germanium Detector: The portable High Purity Germanium (HPGe) Detector is used to measure the photon radiation emitting from the dosimeter as a result of the reactor accident. This instrument is used at the Naval Dosimetry Center to evaluate the results of an accident. [P40A / Accident Dosimeter Alpha/Beta Detector]: M2200, Accident Dosimeter Alpha/Beta Detector: The portable Alpha/Beta Detector is used to measure the alpha and beta radiation emitting from the dosimeter as a result of a reactor accident. This instrument is used at the Naval Dosimetry Center to evaluate the results of an accident. [P40A / Accident Dosimeter Data & Training]: M2200, Accident Dosimeter Data & Training: The Naval Dosimetry Center staff will be trained on how to evaluate the dosimeter. The vendor will supply Technical Manuals, Technical Repair Standards and Standard Calibration Procedure documentation in order for the detectors purchased to be maintained by Navy Radiation Calibration Laboratories. [P40A / Battlefield Dosimeter]: M2200, Battlefield Dosimeter: A dosimeter designed for use during nuclear or radiological events involving high energy gamma and neutron irradiation. An "event" can be a nuclear reactor accident, such as the Fukushima disaster in 2011, or an attack on, e.g., a Carrier Strike Group using a nuclear or radiological (dirty bomb) weapon. The concept of operations for such a dosimeter is that it is issued at MOP (Military Operational Posture) III to allow the commander to manage the exposure received by members of recovery teams who would be deployed in order to maintain continuity of operations. It is also used to perform triage on casualties, allowing medical personnel to most effectively allocate their resources.		

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Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment		P-1 Line Item Number / Title: 2920 / RADIAC
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 0708017N	Other Related Program Elements: 0603542N, 0702856N
Line Item MDAP/MAIS Code: N/A		
[P40A / Battlefield Dosimeter Cases]: M2200, Battlefield Dosimeter Cases: The Battlefield Dosimeter will spend much of its time aboard ships stored in Damage Control Lockers. The instrument will also have to be shipped to and from a RADIAC Calibration Laboratory to undergo periodic calibrations. Because allowances for the instruments on the various ship classes range from 12 on an LCS to 700 each on a CVN, cases configured to hold different quantities (25, 50, 100) will be procured to afford the necessary protection for storage and shipping while maximizing shipboard storage space efficiency.		
[P40A / Battlefield Dosimeter Data, Training & Testing]: M2200, Battlefield Dosimeter Data & Training: The Technical Data Package includes the Technical Manual (TM), Technical Repair Standard (TRS), Standard Calibration Procedure (SCP), Product Drawings, Electronic Magnetic Interference & Prompt Nuclear Test Report. These documents are needed to maintain, repair and calibrate the IM-276A/PD. The test report will provide the needed objective quality evidence showing compliance)prior to delivery of the dosimeters. The vendor was also contracted to convert the TM,TRS and SCP documents from COTS into standard military manual format.		
The Data Acquisition System/Calibration Software includes the hardware and calibration software used to calibrate, configure, assign, reset and re-zero the IM-276A/PD. This software will then be submitted for NMCI certification and DADMS approval and pushed to the calibration laboratories.		
Training will be conducted at a Navy RADIAC Calibration Laboratory for technicians who are responsible for the maintenance and repair of equipment. Training will include a review of the repairable parts and step-by-step instruction on how to perform the standard calibration procedure the technicians will employ to keep the equipment adjusted to specified tolerances.		
Testing of 200 Low Rate Initial Production units was conducted at White Sands Missile Range to ensure the instrument met Navy specifications for response to neutron and prompt gamma radiation.		
[P40A / Electronic Personal Dosimeter]: M2200, Electronic Personal Dosimeter (EPD): An electronic dosimeter that includes a real-time digital display of radiation dose being received. These so-called secondary dosimeters are normally used in conjunction with the DT-702 primary dosimeter in order to provide the wearer with real-time radiation dose information and alarm features that aid workers in controlling their radiation exposure. The DT-702 (Cost Element 2.1) is the Navy's approved dosimeter to record dose of record in each individual's medical record, but it is a "passive" device; i.e., it does not immediately display the dose being received. Instead, the dose is stored on the card on four different elements. It must be turned in and read by a machine (the 8800 Reader), a process that takes weeks, and therefore does not indicate if the wearer is in imminent danger.		
[P40A / M2200 NWCF Contract Service Fee]: M2200 NWCF Contract Service Fee: The PCO for hardware acquisitions is a Navy Working Capital Fund activity that charges a set fee for each contract award and modification. The applicable fee for a given year is applied to the total value of the Cost Code hardware acquisitions.		
[P40A / M2400 - Other RADIAC]: M2400. Other RADIAC. The RADIAC Program fields 70 different families of instruments, consisting of a total of almost 43,000 instruments and 400,000 dosimeters. Those families that fall into similar functionality have been grouped here into the M2100, M2200, M2500 and M2600 Cost Codes. The M2400 Cost Code consists of instruments that have specialized functions that only they perform, and therefore would require an unmanageable and meaningless number of additional Cost Codes if each were addressed individually. In the context of the family metaphor used here, these instruments are no less important but are orphans in the sense there are not many of similar functionality with which they could be grouped.		
This Cost Code also supports replenishment of Ready for Issue (RFI) stocks when instruments in any Cost Code fall below stock levels sufficient to meet quarterly demand. This Cost Element (Spares) is a Continuing element that varies year-to-year based on emergent requirements and the quantity and unit cost of the item(s) being replenished.		
[P40A / Spares]: M2400, Spares: Purchase of additional quantities of existing models of RADIACs to replenish or supplement stocks of items due to minor increases in program allowances, inventory losses, or due to assets being beyond economical repair.		
[P40A / M2500 - Air Sampling Systems]: M2500. Monitoring for airborne radioactivity is done to detect leaks from nuclear reactors or associated systems to ensure that radioactivity is not inadvertently released to the environment from these operations. Additionally, monitoring for airborne radioactivity is performed during maintenance on radioactive components or during events that might cause radioactivity to be released to the air. Monitoring for airborne radioactivity is normally done by drawing air across filter paper to collect airborne radioactive particles. This filter paper is then evaluated by radiation detectors and the concentration of airborne radioactivity is calculated. The types of airborne radioactivity monitoring systems include fixed systems and portable systems.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment		P-1 Line Item Number / Title: 2920 / RADIAC
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 0708017N	Other Related Program Elements: 0603542N, 0702856N
Line Item MDAP/MAIS Code: N/A		
Fixed systems sample air from pre-determined locations and normally include built-in radiation detectors for determining the airborne radioactivity concentration. Portable systems can be used to sample air at any desired location, but normally require the use of separate radiation detection instruments to measure the radioactive particles deposited on the filter paper to determine the airborne radioactivity concentration.		
[P40A / Air Particle Detector (APD) Ship Frames]: M2500, Air Particle Detector (APD), Ship, Frames: Government Furnished Material (GFM) to be provided to the manufacturer of the APD Ship (IM-272/WDQ). The frame is a 300 pound sheet metal cabinet a little larger than a compact refrigerator. Preparation of the frame and its components to become IM-272 GFM includes the complete disassembly of the unit, then cleaning, blasting, powder coating, painting, and refurbishing of the cabinet, and repairing, replacing, testing, and reassembling the internal components. Use of these frames and components reduces the overall cost of the IM-272/WDQ and avoids the cost of a ship alteration by ensuring the IM-272/WDQ will have the same shipboard footprint as the IM-239/WDQ.		
[P40A / APD Ship]: M2500, Air Particle Detector, Ship: Airborne radioactivity monitoring system that is required for use on CVNs and all submarines. This system (IM-272/WDQ) is a replacement for the existing IM-239/WDQ used on all Navy nuclear ships. The IM-272/WDQ incorporates significant technology enhancements that will reduce spurious false alarms and reduce operator maintenance.		
[P40A / APD Ship Data]: M2500, Air Particle Detector, Ship Data: This data includes a one-time cost for Technical Manuals in FY18 for the acoustic model. Subsequent years include the Technical Repair Standard, drawings, and production reports with every delivery order. After FY18, the cost of data will be included in the unit price.		
[P40A / APD Ship Initial Spare Parts]: M2500, Air Particle Detector, Ship, Initial Spare Parts: In FY17 procure initial spare parts to support fielding. In FY18, procure two Flow Meter Test Sets.		
[P40A / APD Ship Upgrade Kit]: M2500, APD Ship Upgrade Kit: The Navy procured the first lot of IM-272 APDs in FY14. Subsequent to that delivery order an Engineering Change Proposal was directed by Naval Reactors in order to accommodate more stringent acoustic specifications for the COLOMBIA class submarines. Ten of the IM-272 will be retrofitted with new parts to upgrade them to the IM-272A model.		
[P40A / APD Ship Provisioning]: M2500, APD Ship Provisioning: In FY18 the contractor will host a provisioning conference at which the equipment will be broken down to Source, Maintenance and Recoverability (SM&R) codes and where maintenance philosophies will be established for each part for the acoustic upgrade model. In FY19 The APD Ship Configuration Audit will validate the "as-built" production unit against the Technical Data Package. The audit will also verify compliance with the Performance and Testing Specification. Program Reviews will be performed on a quarterly basis to monitor production progress, assess significant Government Furnished Parts issues, and review status of data deliverables.		
[P40A / APD Ship GFP Repair by Contractor]: M2500, APD Ship GFP Repair by Contractor: The APD Ship utilizes Government Furnished Property (GFP) in its design. The Government prepares the GFP prior to shipment to the contractor. Certain pieces require additional repair work by the contractor. The Government will fund the contractor to repair GFP as needed in order to mitigate risks to cost and schedule.		
[P40A / APD Ship Drawing Revisions]: M2500, APD Ship Drawing Revisions: The Government is providing the Technical Data Package (TDP) to the contractor to build the APD Ship. The contractor may identify issues with the TDP that need to be resolved prior to manufacturing the assemblies and subassemblies within the APD Ship. The Government will assess whether the issues require adjudication prior to production. The contractor will be funded to correct these issues upon contract award.		
[P40A / APD Ship Program Reviews]: M2500, APD Ship Program Reviews: The contractor will host quarterly program reviews during the life of the contract, to be conducted at the contractor's site. The contractor will brief topics to include, but not limited to, testing and manufacturing issues, Government Furnished Property (GFP) usage, and the milestone plan. Risks to the schedule and the corresponding risk mitigation methods shall be discussed. The contractor will make a teleconference line available for individuals not able to attend the review in person.		
[P40A / Air Particle Sampler]: M2500, Air Particle Sampler: Portable airborne radioactivity sampling system. Used during radiological work or during radiological casualties to draw air across a filter paper to collect radioactive particles. The filter paper is then evaluated using separately provided radiation detectors to determine the concentration of airborne radioactivity.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment		P-1 Line Item Number / Title: 2920 / RADIAC
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 0708017N	Other Related Program Elements: 0603542N, 0702856N
Line Item MDAP/MAIS Code: N/A		
[P40A / Tritium Monitor]: M2500, Tritium Monitor: The AN/PDR-73 Tritium Monitor is used at nuclear weapons storage facilities and research laboratories to sample the air for the presence of tritium, which is a toxic radiation hazard if inhaled. The current instrument is 30 years old and cannot be repaired due to obsolete components. At the current loss rate due to normal wear and tear there will be insufficient assets to meet operational requirements, so a replacement must be procured. [P40A / Tritium Monitor Testing, Data, Parts & Training]: M2500, Tritium Monitor Testing, Data, Parts & Training: Electro Magnetic Interference testing, Testing Manuals, Technical Repair Standard. Training of RADIAC Calibration Laboratory electronic technicians and program engineers on how to maintain the equipment. [P40A / M2500 NWCF Contract Service Fee]: M2500 NWCF Contract Service Fee: The PCO for hardware acquisitions is a Navy Working Capital Fund activity that charges a set fee for each contract award and modification. The applicable fee for a given year is applied to the total value of the Cost Code hardware acquisitions. [P40A / M2600 - Laboratory Test Equipment]: M2600. This Cost Code supports specialized equipment usually found in laboratories, hospitals and test facilities. This kind of equipment is distinct enough to warrant separating it for management purposes from the M2400 Cost Code. [P40A / RITES]: M2600, RITES: The RADIAC Integrated Test Equipment Suite (RITES) is an automated system that replaces several legacy diagnostic test equipment instruments technicians use in the routine calibration and maintenance of RADIACs. This is a modular IT system that will be installed at each of the seven Navy RADIAC Calibration Laboratories. Each system consists of laptops, special interface cards, a server, docking stations, and software licenses. [P40A / Calibrators]: M2600, Calibrators: Calibrators (also known as irradiators) are the basic tool used to calibrate all Navy radiological detection equipment. They consist of a high energy radiological source (Cs-137) in a shielded container that is located in a specially constructed room, or "range." A technician places the instrument to be calibrated at a specific calibration point in the range and remotely operates the calibrator by raising the source out of its container so that the radiological source becomes exposed and it irradiates the instrument. The instrument's response to the radiation is measured so that it can be calibrated to specific tolerances. The current suite of AN/UDM-1B calibrators is over 30 years old, and the natural decay of the strength of the radioactive source over time restricts calibration effectiveness by limiting the scale of calibration points below American National Standards Institute (ANSI) requirements that are followed in accordance with Navy policy. Also, due to the age of the calibrators, there are several parts no longer supported by the manufacturer, and a malfunctioning calibrator (e.g., where the radioactive source gets stuck in the exposed position) poses a very high safety risk. [P40A / Calibrator, No Source]: M2600, Calibrator, No Source: This unit will be located at the lead RADIAC Calibration Laboratory where technicians and engineers will be trained on calibrator maintenance, troubleshooting, and repair without requiring the constraints of exercising radiation exposure controls. [P40A / Calibrator Initial Spare Parts, Installation & Training]: M2600, Calibrator Initial Spare Parts, Installation & Training: Initial spare parts and vendor training at each of the seven RADIAC Calibration Laboratories where the equipment will be installed. The vendor will ship and install the calibrators at each of the seven Navy RADIAC Calibration Laboratories. [P40A / Liquid Scintillation Counter]: M2600, Liquid Scintillation Counter: The Liquid Scintillation Counter (LSC) is a laboratory device designed to measure low levels of radioactivity. Radiological monitoring requirements for the Strategic Systems Program (SSP) enterprise are driven by mission work conducted at Strategic Weapons Facility, Atlantic (SWFLANT) and Strategic Weapons Facility, Pacific (SWFPAC). In these facilities, proximity to nuclear weapons presents potential occupational exposure to ionizing radiation. The primary radioisotope of concern is tritium (H-3), which presents itself in particulate and gaseous form. To monitor facilities for particulate tritium, radiological "swipes" are collected from various surfaces and then analyzed in a LSC to measure a representative amount of any contamination present. The LSC is calibrated to detect radiation with energies that match the isotopes of interest. The procurement cost represents the cost of the instruments and associated peripherals and software. [P40A / M2600 NWCF Contract Service Fee]: M2600 NWCF Contract Service Fee: The PCO for hardware acquisitions is a Navy Working Capital Fund activity that charges a set fee for each contract award and modification. The applicable fee for a given year is applied to the total value of the Cost Code hardware acquisitions. [P40A / M2830 - Support - Production Engineering]: M2830, Production Engineering: Labor cost of the government and contractor personnel who prepare the acquisitions.		

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Line Item MDAP/MAIS Code: N/A		
[P40A / Production Engineering Carderock]: M2830, Production Engineering: Labor cost of the government Engineers, Health Physicists, Scientists and others who prepare the acquisitions. [P40A / Production Engineering ISEA]: M2830, Production Engineering In Service Engineering Agent (ISEA): Labor cost of the contractor Engineers, Logisticians, Technical Writer, Program Analyst, and Systems Analysts who help prepare the acquisitions.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment						P-1 Line Item Number / Title: 2920 / RADIAC				
ID Code (A=Service Ready, B=Not Service Ready): B			Program Elements for Code B Items: 0708017N			Other Related Program Elements: 0603542N, 0702856N				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	RADIAC	P-5a			- / 54.909	- / 10.718	- / 8.175	- / 6.450	- / -	- / 6.450
P-40	Total Gross/Weapon System Cost				- / 54.909	- / 10.718	- / 8.175	- / 6.450	- / 0.000	- / 6.450
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										

Justification:
 Title 10 of the Code of Federal Regulations, Part 20 (10 CFR 20) requires RADIAC instruments be used to ensure the safety of personnel who work with or who are exposed to radioactive materials in their work. Additionally, the Navy's mission requires personnel and ships to have the ability to operate in radiological environments and the ability to identify and interdict radiological Weapons of Mass Destruction (WMD). Navy programs that require RADIAC instruments for Occupational Safety & Health (OSH) reasons under the provisions of 10 CFR 20 include Naval Nuclear Propulsion, Nuclear Weapons, Medical, and Radiological Affairs Support. Non-OSH programs include Radiological Defense, Consequence Management, Training, Technical (RADIAC calibration, shielding evaluation, research) and Radiological Search (maritime interdiction to locate or intercept WMD).

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10									P-1 Line Item Number / Title: 2920 / RADIAC						Aggregated Items Title: RADIAC					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
1) M2100 - Survey Meters																				
1.1) Radiological Detection System ^{(1)(t)}	B		-	-	-	-	-	-	-	-	-	2,375.95	304	0.722	-	-	-	2,375.95	304	0.722
Subtotal: 1) M2100 - Survey Meters			-	-	0.000	-	-	-	-	-	-	-	-	0.722	-	-	-	-	-	0.722
2) M2200 - Dosimetry																				
2.1) DT-702 Card Holder ^(t)	A		18.34	35,000	0.642	20.00	25,000	0.500	-	-	-	-	-	-	-	-	-	-	-	-
2.2) Extremity Dosimeter ^(t)	A		12.57	21,000	0.264	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.3) Accident Dosimeter ^{(2)(t)}	A		-	-	-	-	-	-	-	-	-	100.00	500	0.050	-	-	-	100.00	500	0.050
2.4) Accident Dosimeter High Purity Germanium Detector ^{(3)(t)}	A		-	-	-	-	-	-	-	-	-	100,000.00	1	0.100	-	-	-	100,000.00	1	0.100
2.5) Accident Dosimeter Alpha/Beta Detector ^{(4)(t)}	A		-	-	-	-	-	-	-	-	-	20,000.00	1	0.020	-	-	-	20,000.00	1	0.020
2.6) Accident Dosimeter Data & Training	A		-	-	-	-	-	-	-	-	-	-	-	0.220	-	-	-	-	-	0.220
2.7) Battlefield Dosimeter ^{(5)(t)}	A		179.31	31,700	5.684	227.25	12,305	2.796	227.25	14,488	3.292	227.25	5,750	1.307	-	-	-	227.25	5,750	1.307
2.8) Battlefield Dosimeter Cases ^{(6)(t)}	A		411.95	318	0.131	387.10	202	0.078	389.53	172	0.067	403.51	114	0.046	-	-	-	403.51	114	0.046
2.9) Battlefield Dosimeter Data, Training & Testing	A		0.00	335,616	0.000	-	-	0.108	-	-	-	-	-	-	-	-	-	-	-	-
2.10) Electronic Personal Dosimeter ^{(7)(t)}	A		281.00	18,338	5.153	-	-	-	-	-	-	536.00	1,000	0.536	-	-	-	536.00	1,000	0.536
2.11) M2200 NWCF Contract Service Fee ⁽⁸⁾	A		-	-	0.365	-	-	0.393	-	-	0.026	-	-	0.063	-	-	-	-	-	0.063
Subtotal: 2) M2200 - Dosimetry			-	-	12.239	-	-	3.875	-	-	3.385	-	-	2.342	-	-	-	-	-	2.342
3) M2400 - Other RADIAC																				
3.1) Spares	A		-	-	7.135	-	-	0.044	-	-	0.122	-	-	0.023	-	-	-	-	-	0.023
Subtotal: 3) M2400 - Other RADIAC			-	-	7.135	-	-	0.044	-	-	0.122	-	-	0.023	-	-	-	-	-	0.023
4) M2500 - Air Sampling Systems																				
4.1) Air Particle Detector (APD) Ship Frames ^{(9)(t)}	A		6,955.00	200	1.391	3,166.00	90	0.285	-	-	-	7,502.00	50	0.375	-	-	-	7,502.00	50	0.375

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10							P-1 Line Item Number / Title: 2920 / RADIAC								Aggregated Items Title: RADIAC					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
4.2) APD Ship ^{(10)(†)}	A		49,628.57	70	3.474	59,669.00	25	1.492	60,862.00	15	0.913	62,019.00	15	0.930	-	-	-	62,019.00	15	0.930
4.3) APD Ship Data	A		-	-	1.560	-	-	0.600	-	-	-	-	-	-	-	-	-	-	-	-
4.4) APD Ship Initial Spare Parts ^(†)	A		-	-	0.880	182,500.00	2	0.365	-	-	-	-	-	-	-	-	-	-	-	-
4.5) APD Ship Upgrade Kit ^(†)	A		-	-	-	24,600.00	10	0.246	-	-	-	-	-	-	-	-	-	-	-	-
4.6) APD Ship Provisioning	A		-	-	0.334	-	-	0.040	-	-	0.300	-	-	-	-	-	-	-	-	-
4.7) APD Ship GFP Repair by Contractor	A		-	-	-	-	-	-	-	-	0.500	-	-	-	-	-	-	-	-	-
4.8) APD Ship Drawing Revisions	A		-	-	-	-	-	-	-	-	0.200	-	-	-	-	-	-	-	-	-
4.9) APD Ship Program Reviews ⁽¹¹⁾	A		-	-	-	-	-	-	-	-	-	-	-	0.200	-	-	-	-	-	0.200
4.10) Air Particle Sampler ^(†)	A		1,262.50	480	0.606	1,320.48	367	0.485	1,319.59	367	0.484	-	-	-	-	-	-	-	-	-
4.11) Tritium Monitor ^(†)	A		19,500.00	50	0.975	13,447.00	100	1.345	17,894.00	50	0.895	-	-	-	-	-	-	-	-	-
4.12) Tritium Monitor Testing, Data, Parts & Training	A		-	-	0.038	-	-	0.038	-	-	0.024	-	-	-	-	-	-	-	-	-
4.13) M2500 NWCF Contract Service Fee ⁽¹²⁾	A		-	-	0.564	-	-	0.513	-	-	0.218	-	-	0.173	-	-	-	-	-	0.173
Subtotal: 4) M2500 - Air Sampling Systems			-	-	9.822	-	-	5.409	-	-	3.534	-	-	1.678	-	-	-	-	-	1.678
5) M2600 - Laboratory Test Equipment																				
5.1) RITES	A		-	-	-	-	-	0.315	-	-	-	-	-	-	-	-	-	-	-	-
5.3) Calibrator, No Source ^{(13)(†)}	A		-	-	-	-	-	-	-	-	-	200,000.00	1	0.200	-	-	-	200,000.00	1	0.200
5.4) Calibrator Initial Spare Parts, Installation & Training ⁽¹⁴⁾	A		-	-	-	-	-	-	-	-	-	-	-	0.310	-	-	-	-	-	0.310
5.6) M2600 NWCF Contract Service Fee ⁽¹⁵⁾	A		-	-	-	-	-	-	-	-	-	-	-	0.037	-	-	-	-	-	0.037
Subtotal: 5) M2600 - Laboratory Test Equipment			-	-	0.000	-	-	0.315	-	-	-	-	-	0.547	-	-	-	-	-	0.547
6) M2830 - Support - Production Engineering																				

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10							P-1 Line Item Number / Title: 2920 / RADIAC							Aggregated Items Title: RADIAC						
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
6.1) Production Engineering Carderock	A		-	-	14.831	-	-	0.650	-	-	0.700	-	-	0.695	-	-	-	-	-	0.695
6.2) Production Engineering ISEA	A		-	-	10.882	-	-	0.425	-	-	0.434	-	-	0.443	-	-	-	-	-	0.443
Subtotal: 6) M2830 - Support - Production Engineering			-	-	25.713	-	-	1.075	-	-	1.134	-	-	1.138	-	-	-	-	-	1.138
Total			-	-	54.909	-	-	10.718	-	-	8.175	-	-	6.450	-	-	-	-	-	6.450

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

(t) indicates the presence of a P-5a

Footnotes:

- (1) M2100, Radiological Detection System (RDS): This procurement will involve 17 different line items, ranging in cost from \$34 for a power cord to \$4,546 for a Control Unit plus Neutron Probe, which is just one of eight configurations in which a Control Unit will be bought with a different type of probe (Alpha, Beta, Neutron, Photon, Scintillation, and Field Instrument for the Detection of Low Energy Radiation (FIDLER)). Quantities required for each of the line items will also vary widely, from five Scintillation Probes to approximately 9,681 Control Units. To keep this exhibit simple, the quantities provided in each year will be a combination of several of the line items in various configurations. This also means that the unit cost year-to-year is not based on inflation of any specific end item, but rather a reflection of the various line items being procured that year in their various quantities and widely varying costs.
- (2) M2200, Accident Dosimeter: The current DT-518/PD has been found to be in degraded condition in both the supply system and in deployed assets.
- (3) M2200, Accident Dosimeter High Purity Germanium Detector: At the present time only one detector will be procured in FY20. However, Naval Reactors in the future may decide to have several additional units procured for fielding to major nuclear maintenance facilities in addition to the one currently planned for the Naval Dosimetry Center.
- (4) M2200, Accident Dosimeter Alpha/Beta Detector: At the present time only one detector will be procured in FY20. However, Naval Reactors in the future may decide to have several additional units procured for fielding to major nuclear maintenance facilities in addition to the one currently planned for the Naval Dosimetry Center.
- (5) M2200, Battlefield Dosimeter (BD): Subsequent to the Fukushima Daiichi nuclear plant incident in 2011, a capability gap was identified wherein ships in the deployed Battle Group were exposed to the lower levels of radiation normally associated with occupational radiological workers. This hampered the continuity of operations because the existing BD is designed to record and display exposure beginning only at 10 rem (roentgen equivalent in man), a level associated with the detonation of a nuclear weapon. This is a specification vestige of the Cold War. The millirem, which is one thousandth of a rem, is used to measure dosages encountered in daily life, such as the amount of radiation received from medical X-rays, long airplane flights, background sources, and the lower levels of radiation normally associated with occupational radiological work, during which workers are exposed on a continuous basis and why their exposures are closely monitored and recorded. To fill the gap, specifications were added to the new BD for a device that could provide real-time feedback of dose received at occupational levels. For the first follow-on contract that was awarded in September 2017 for the improved version of the BD, the unit price was fixed at \$227.25 for the duration of the contract, which runs from FY17-FY20. The assumption for now is that in either a competitive or sole source scenario for the next follow-on contract, the price will thereafter increase at least commensurate with inflation.
- (6) M2200, Battlefield Dosimeter Cases. The unit price of the cases will vary with their size. Since all three configurations are consolidated into one Cost Element and will be purchased in varying quantities in each year, the Total Cost year-to-year will not conform to inflation indices.
- (7) M2200, Electronic Personal Dosimeter (EPD): The vendor of the Navy's current EPD has extended its production from the previously announced FY17 to FY22. The manufacturer has set aside 5,000 units for the Navy to procure. In FY20-FY22 these final production units of the current model will be procured. This will permit its continued use in the Navy until approximately FY27, at which time the inventory is expected to drop below sustainable levels and a new model will be sought as a replacement.
- (8) M2200 NWCF Contract Service Fee: In FY18, the various acquisition Navy Working Capital Fund (NWCF) service fees charged were 12.1% of the total value of each contract action. In FY19 the rate is expected to be 14.5%, but this time with a cap of \$25,000 per contract action. This fee structure is assumed herein to continue for the remainder of the FYDP, and will significantly affect the costs shown on this line in each Cost Code in which contracts are executed at Naval Surface Warfare Center Carderock Division.
- (9) M2500, Air Particle Detector, Ship, Frames: Work is accomplished in accordance with MIL-STD-2110(EC), Restoration, Overhaul and Repair of Electronic Equipment. In accordance with the referenced standard, the IM-239/WDQ frames are Restored, which is defined in the reference as making the equipment "... conform to the current technical specifications for the item ... and the restoration of the equipment's physical appearance to the manufacturer's original condition (like new)." In FY18, 90 of the 200 frames that had been Restored in prior years need new, minor additional work to remove some of the components that are now no longer required by the final design. This work can be equated to Repair as defined in the reference, the lowest category of effort. Besides the lower level of effort, no component parts/repairs are required. Hence the cost differential for the 90 units serviced in FY18 as compared to the 50 units per year requiring full restoration in the prior and out years.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2920 / RADIAC	Aggregated Items Title: RADIAC
⁽¹⁰⁾ M2500, Air Particle Detector, Ship: The final delivery order on the current contract was placed in June 2017 with increased, updated pricing. The price was increased due to the acoustic modifications ordered by Naval Reactors for the COLUMBIA class submarines. The modifications driving the unit cost increase included making the pressure vessel out of a different material, installing acoustic tiles in the upper pressure vessel, installing a new muffler, and providing factory testing of the units to meet the new acoustic standard. A new contract for the remaining units will be competed on a build to print basis and is scheduled for award in September 2019. ⁽¹¹⁾ M2500, APD Ship Program Reviews: With the new contract scheduled to be awarded in September 2019, a contract line item will be included for the contractor to conduct quarterly program reviews to the Government. ⁽¹²⁾ M2500 NWCF Contract Service Fee: In FY18, the various acquisition Navy Working Capital Fund (NWCF) service fees charged were 12.1% of the total value of each contract action. In FY19 the rate is expected to be 14.5%, but this time with a cap of \$25,000 per contract action. This fee structure is assumed herein to continue for the remainder of the FYDP, and will significantly affect the costs shown on this line in each Cost Code in which contracts are executed at Naval Surface Warfare Center Carderock Division. ⁽¹³⁾ M2600, Calibrator, No Source: One calibrator will be procured without a radioactive source in order that it can be placed in an area without radiological controls. It will be used for trouble shooting when problems with fielded units are reported to the responsible engineers, and also for training purposes. ⁽¹⁴⁾ M2600, Calibrator Initial Spare Parts, Installation & Training: Calibrators must be installed at each of the seven RADIAC Calibration Laboratories (RCL) by specially trained and licensed personnel. Initial spares will be procured, and the vendor will provide instruction to RCL technicians who will be operating the equipment. ⁽¹⁵⁾ M2600 NWCF Contract Service Fee: In FY18, the various acquisition Navy Working Capital Fund (NWCF) service fees charged were 12.1% of the total value of each contract action. In FY19 the rate is expected to be 14.5%, but this time with a cap of \$25,000 per contract action. This fee structure is assumed herein to continue for the remainder of the FYDP, and will significantly affect the costs shown on this line in each Cost Code in which contracts are executed at Naval Surface Warfare Center Carderock Division.		

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10				P-1 Line Item Number / Title: 2920 / RADIAC					Aggregated Items: RADIAC			
Item Number / Title [DODIC]	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1) M2100 - Survey Meters												
1.1) Radiological Detection System (1)		2020 ⁽¹⁶⁾	VPI Technology Group / Draper, UT	C / CPIF	Aberdeen Proving Grounds, MD	Nov 2019	May 2020	304	2,375.95	Y		Dec 2015
2) M2200 - Dosimetry												
2.1) DT-702 Card Holder		2018	Thermo Fisher Scientific / Oakwood Village, OH	SS / IDIQ	NSWC Carderock	Mar 2018	Jun 2018	25,000	20.00	Y		Feb 2018
2.2) Extremity Dosimeter		2017	Thermo Fisher Scientific / Oakwood Village, OH	SS / IDDQ	NSWC Carderock	Mar 2017	Jun 2017	9,000	13.66	Y		Feb 2017
2.3) Accident Dosimeter ⁽²⁾		2020	TBD / TBD	C / FFP	NSWC Carderock	Sep 2020	Mar 2021	500	100.00	N	Aug 2019	Nov 2019
2.4) Accident Dosimeter High Purity Germanium Detector ⁽³⁾		2020	TBD / TBD	C / FFP	NSWC Carderock	Sep 2020	Mar 2021	1	100,000.00	N	Aug 2019	Nov 2019
2.5) Accident Dosimeter Alpha/Beta Detector ⁽⁴⁾		2020	TBD / TBD	C / TBD	NSWC Carderock	Sep 2020	Mar 2021	1	20,000.00	N	Aug 2019	Nov 2019
2.7) Battlefield Dosimeter ⁽⁵⁾		2014	Radiation Safety & Control Services / Stratham, NH	C / FFP	NSWC Carderock	Sep 2015	Jun 2016	20,000	149.00	Y		Dec 2012
2.7) Battlefield Dosimeter ⁽⁵⁾		2015	Radiation Safety & Control Services / Stratham, NH	SS / IDIQ	NSWC Carderock	Sep 2017	Mar 2018	4,044	227.25	Y		May 2017
2.7) Battlefield Dosimeter ⁽⁵⁾		2016	Radiation Safety & Control Services / Stratham, NH	SS / IDIQ	NSWC Carderock	Sep 2017	Mar 2018	5,390	227.25	Y		May 2017
2.7) Battlefield Dosimeter ⁽⁵⁾		2017	Radiation Safety & Control Services / Stratham, NH	SS / IDDQ	NSWC Carderock	Sep 2017	Mar 2018	2,266	227.25	Y		May 2017
2.7) Battlefield Dosimeter ⁽⁵⁾		2018	Radiation Safety & Control Services / Stratham, NH	SS / IDIQ	NSWC Carderock	Sep 2018	Sep 2018	12,305	227.25	Y		May 2017
2.7) Battlefield Dosimeter ⁽⁵⁾		2019	Radiation Safety & Control Services / Stratham, NH	SS / IDIQ	NSWC Carderock	Mar 2019	Mar 2019	14,488	227.25	Y		May 2017
2.7) Battlefield Dosimeter ⁽⁵⁾		2020	Radiation Safety & Control Services / Stratham, NH	SS / IDIQ	NSWC Carderock	Mar 2020	Mar 2020	5,750	227.25	Y		May 2017
2.8) Battlefield Dosimeter Cases ⁽⁶⁾		2015	Radiation Safety & Control Services / Stratham, NH	SS / IDIQ	NSWC Carderock	Sep 2017	Sep 2017	200	417.00	Y		May 2017
2.8) Battlefield Dosimeter Cases ⁽⁶⁾		2017	Radiation Safety & Control Services / Stratham, NH	SS / IDIQ	NSWC Carderock	Sep 2017	Sep 2017	118	405.17	Y		Jun 2017
2.8) Battlefield Dosimeter Cases ⁽⁶⁾		2018	Radiation Safety & Control Services / Stratham, NH	SS / IDIQ	NSWC Carderock	Sep 2018	Sep 2018	202	387.10	Y		May 2017
2.8) Battlefield Dosimeter Cases ⁽⁶⁾		2019	Radiation Safety & Control Services / Stratham, NH	SS / IDIQ	NSWC Carderock	Mar 2019	Mar 2019	172	389.53	Y		May 2017
2.8) Battlefield Dosimeter Cases ⁽⁶⁾		2020	Radiation Safety & Control Services / Stratham, NH	SS / IDIQ	NSWC Carderock	Mar 2020	Mar 2020	114	403.51	Y		May 2017

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10			P-1 Line Item Number / Title: 2920 / RADIAC						Aggregated Items: RADIAC			
Item Number / Title [DODIC]	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
2.10) Electronic Personal Dosimeter ⁽⁷⁾		2016	Thermo Fisher Scientific / Franklin, MA	SS / IDDQ	NSWC Carderock	Jun 2016	Sep 2016	150	441.00	Y		Jul 2013
2.10) Electronic Personal Dosimeter ⁽⁷⁾		2017	Thermo Fisher Scientific / Franklin, MA	SS / IDIQ	NSWC Carderock	Mar 2017	Jun 2017	2,000	463.00	Y		Jul 2013
2.10) Electronic Personal Dosimeter ⁽⁷⁾		2020	Thermo Fisher Scientific / Franklin, MA	SS / IDIQ	NSWC Carderock	Dec 2019	Dec 2019	1,000	536.00	Y		Jul 2013
4) M2500 - Air Sampling Systems												
4.1) Air Particle Detector (APD) Ship Frames ⁽⁹⁾		2013	Puget Sound NSY / Bremerton, WA	WR	** NO PCO **	Nov 2012	Feb 2013	50	5,580.00	Y		
4.1) Air Particle Detector (APD) Ship Frames ⁽⁹⁾		2014	Puget Sound NSY / Bremerton, WA	WR	** NO PCO **	Nov 2013	Feb 2014	50	6,280.00	Y		
4.1) Air Particle Detector (APD) Ship Frames ⁽⁹⁾		2015	Puget Sound NSY / Bremerton, WA	WR	** NO PCO **	Oct 2014	Jan 2015	50	6,580.00	Y		
4.1) Air Particle Detector (APD) Ship Frames ⁽⁹⁾		2016	Puget Sound NSY / Bremerton, WA	WR	** NO PCO **	Oct 2015	Jan 2016	50	6,700.00	Y		
4.1) Air Particle Detector (APD) Ship Frames ⁽⁹⁾		2018	Puget Sound NSY / Bremerton, WA	WR	** NO PCO **	Jul 2018	Oct 2018	90	3,166.00	Y		
4.1) Air Particle Detector (APD) Ship Frames ⁽⁹⁾		2020	Puget Sound NSY / Bremerton, WA	WR	** NO PCO **	Nov 2019	Feb 2020	50	7,502.00	Y		
4.2) APD Ship ⁽¹⁰⁾		2014	Leidos / San Diego, CA	C / FFP	NSWC Carderock	Sep 2014	Jul 2015	40	42,975.00	Y		Feb 2011
4.2) APD Ship ⁽¹⁰⁾		2017	Leidos / San Diego, CA	C / FFP	NSWC Carderock	Jun 2017	Apr 2018	30	58,499.00	Y		Feb 2011
4.2) APD Ship ⁽¹⁰⁾		2018	TBD / UNKNOWN	C / FFP	NSWC Carderock	Sep 2019	Sep 2020	25	59,669.00	Y		Sep 2018
4.2) APD Ship ⁽¹⁰⁾		2019	TBD / UNKNOWN	C / FFP	NSWC Carderock	Sep 2019	Jul 2020	15	60,862.00	Y		Sep 2018
4.2) APD Ship ⁽¹⁰⁾		2020	TBD / UNKNOWN	C / FFP	NSWC Carderock	Mar 2020	Jan 2021	15	62,019.00	Y		Sep 2018
4.4) APD Ship Initial Spare Parts		2018	Leidos / San Diego, CA	SS / FFP	NSWC Carderock	Sep 2018	Jun 2019	2	182,500.00	Y		Jun 2018
4.5) APD Ship Upgrade Kit		2018	Leidos / San Diego, CA	SS / FFP	NSWC Carderock	Sep 2018	Aug 2019	10	24,600.00	Y		Jun 2018
4.10) Air Particle Sampler		2015	Spectral Labs, Inc. / San Diego, CA	C / FFP	NSWC Carderock	Jul 2015	Jun 2016	200	1,227.43	Y		Jun 2014
4.10) Air Particle Sampler		2016	Spectral Labs, Inc. / San Diego, CA	C / FFP	NSWC Carderock	Jul 2016	Jun 2017	80	1,248.34	Y		Jun 2014
4.10) Air Particle Sampler		2017	Spectral Labs, Inc. / San Diego, CA	C / FFP	NSWC Carderock	Jul 2017	Jun 2018	200	1,307.00	Y		Jun 2014
4.10) Air Particle Sampler		2018	Spectral Labs, Inc. / San Diego, CA	C / FFP	NSWC Carderock	Jul 2018	Jun 2019	367	1,320.48	Y		Jun 2014
4.10) Air Particle Sampler		2019	Spectral Labs, Inc. / San Diego, CA	C / FFP	NSWC Carderock	Jul 2019	Jun 2020	367	1,319.59	Y		Jun 2014
4.11) Tritium Monitor		2017	Atlantic Nuclear / Rockland, MA	C / FFP	NSWC Carderock	Dec 2017	Jan 2019	50	19,500.00	Y		Jun 2017
4.11) Tritium Monitor		2018	Atlantic Nuclear / Rockland, MA	C / FFP	NSWC Carderock	Aug 2018	May 2019	100	13,447.00	Y		Jun 2017

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10				P-1 Line Item Number / Title: 2920 / RADIAC					Aggregated Items: RADIAC			
Item Number / Title [DODIC]	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
4.11) Tritium Monitor		2019	Atlantic Nuclear / Rockland, MA	C / FFP	NSWC Carderock	Mar 2019	Dec 2019	50	17,894.00	Y		Jun 2017
5) M2600 - Laboratory Test Equipment												
5.3) Calibrator, No Source ⁽¹³⁾		2020	TBD / TBD	C / TBD	NSWC Carderock	Nov 2019	Jun 2020	1	200,000.00	Y		Nov 2018

Footnotes:

⁽¹⁶⁾ This contract is being managed by the Joint Project Manager, Radiological & Nuclear Defense, from which the Army, Navy, Marine Corps and Air Force will order equipment.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment	P-1 Line Item Number / Title: 2925 / CANES Intell

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0303138N

Line Item MDAP/MAIS Code: M417

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	319.030	46.075	53.465	52.713	0.000	52.713	45.763	50.833	48.161	49.151	449.385	1,114.576
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	319.030	46.075	53.465	52.713	0.000	52.713	45.763	50.833	48.161	49.151	449.385	1,114.576
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	319.030	46.075	53.465	52.713	0.000	52.713	45.763	50.833	48.161	49.151	449.385	1,114.576
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	0.030	0.896	0.813	-	0.813	0.843	0.711	1.016	0.887	Continuing	Continuing
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Consolidated Afloat Networks and Enterprise Services (CANES) is the Navy's Program of Record (POR) to replace and modernize existing afloat networks with the necessary hardware, software and enterprise services infrastructure to enable information warfare from and within the tactical domain. CANES provides complete infrastructure inclusive of hardware, software, processing, storage and end user devices for the Unclassified, Coalition, Secret and Sensitive Compartmented Information (SCI) enclaves to a wide variety of Navy surface combatants, submarines, Maritime Operations Centers, and Aegis Ashore sites. CANES services include application hosting, data transport and storage, system management, cyber security, email, web, chat, collaboration, and voice and video services. CANES is based on the overarching concept of reducing the number of afloat networks and providing enhanced efficiency through a single engineering focus on integrated technical solutions. It allows for streamlined acquisition, contracting, test events, sustainment, and significant lifecycle efficiencies through consolidation of multiple configuration management baselines, logistics, and training efforts into a single unified support structure.

More than eighty (80) hosted applications and systems inclusive of Command and Control, Intelligence, Surveillance and Reconnaissance, Information Operations, Logistics and Business domains require the CANES infrastructure to operate in the tactical environment. Specific programs, such as Distributed Common Ground System - Navy (DCGS-N), Global Command and Control System - Maritime (GCCS-M), Naval Tactical Command Support System (NTCSS), and Undersea Warfare Decision Support System (USW-DSS), no longer provide their own independent network hardware and now depend on CANES to field, host, and sustain their capabilities. The CANES Application Integration program provides common software governance, testing, processes, and tools to application developers, and evaluates and confirms compatibility between CANES and the hosted applications prior to fielding. CANES also provides a set of capabilities called Agile Core Services (ACS) which brings common network services to allow hosted application developers to focus on the unique capabilities they provide.

CANES is funded and programmed to develop regular technical updates with an agile and robust hardware and software baseline development cycle necessary to pace rapidly evolving cyber security threats and meet emerging operational demands within the tactical domain. In order to deliver a mission effective, secure and affordable afloat network, CANES implements a Development Operations (DevOps) framework to improve its engineering processes and speed the deployment of new cyber security, application hosting and baseline updates. CANES requires that Automated Digital Network System (ADNS) field prior to or concurrently with CANES due to the architectural reliance between the two programs.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy							Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment					P-1 Line Item Number / Title: 2925 / CANES Intell					
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A				Other Related Program Elements: 0303138N			
Line Item MDAP/MAIS Code: M417										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / CANES Intell	P-5a			- / 5.264	- / 0.448	- / 2.427	- / 3.706	- / 0.000	- / 3.706
P-3a	1 / CANES-Afloat 5G010/5G777 MIP (TBD)				- / 313.766	- / 45.627	- / 51.038	- / 49.007	- / 0.000	- / 49.007
P-40	Total Gross/Weapon System Cost				- / 319.030	- / 46.075	- / 53.465	- / 52.713	- / 0.000	- / 52.713
Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / CANES Intell	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / CANES-Afloat 5G010/5G777 MIP (TBD)				- / 43.952	- / 50.461	- / 47.384	- / 46.391	- / 433.974	- / 1,081.600
P-40	Total Gross/Weapon System Cost				- / 45.763	- / 50.833	- / 48.161	- / 49.151	- / 449.385	- / 1,114.576
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										
Justification: The FY20 increase in the CANES funding profile optimizes the Chief of Naval Operations (CNO) ship availabilities with the CANES program's capacity and capability to procure and install the product. This ensures CANES is deployed to the Fleet as quickly and effectively as possible to mitigate heightened cyber security threats across Navy tactical networks and supports the DoD direction to remove End of Life (EOL) Windows Operating Systems software from the Fleet as quickly as feasible. Microsoft's end of cyber security support for legacy versions of Windows, as well as networks that rely on obsolete hardware and software, are driving increased sustainment costs, reducing operational availability and creating critical cyber security vulnerability in Navy Tactical Networks. Replacing these legacy networks and modernizing the tactical environment with CANES is the cornerstone for all C4ISR investments. CANES is a mature program with an innovative Multi Award Contract (MAC) in place that has consistently proven capable of delivering on or ahead of schedule. Additionally, it has decreased its installation time and continues to work towards decreasing ship touch time during installations. The MAC ensures capacity for production and installation growth. FY 2020 - CANES funds are for the procurement of (18) Afloat production units (4 Force Level, 6 Unit Level, 8 Subs) and (18) Technical Insertion units (5 Force Level, 7 Unit Level, 6 Subs), with integration and associated costs for pre-installation design and the installation of (14) Afloat production units and (22) Technical Insertion units. CANES funds will also be used for the procurement (5) Ashore units and (0) Ashore Technical Insertion units and the installation of (3) Ashore units. It is important to note that procurement quantities across the FYDP are the same CANES end item products referenced in CANES LI 2915. Installation quantities represent sites receiving CANES as also referenced in LI 2915. The associated dollars in this exhibit represent the Intell portions of the CANES enclave. Beginning at PB20, the CANES Ashore requirements moved from the P-3a to the P-5 due to budget year (FY20) costs falling below the \$5M threshold. All associated costs (procurement, install, support) are broken out accordingly on the P-5 to ensure no loss of budget details.										

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Exhibit P-5, Cost Analysis: PB 2020 Navy													Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10						P-1 Line Item Number / Title: 2925 / CANES Intell							Item Number / Title [DODIC]: 1 / CANES Intell					
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Resource Summary				Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total				
Procurement Quantity <i>(Units in Each)</i>				-		-		-		-		-		-				
Gross/Weapon System Cost <i>(\$ in Millions)</i>				5.264		0.448		2.427		3.706		0.000		3.706				
Less PY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Net Procurement (P-1) <i>(\$ in Millions)</i>				5.264		0.448		2.427		3.706		0.000		3.706				
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Total Obligation Authority <i>(\$ in Millions)</i>				5.264		0.448		2.427		3.706		0.000		3.706				
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																		
Initial Spares <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>				-		-		-		-		-		-				
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Hardware - CANES Intell Procurement Cost																		
Recurring Cost																		
1.1.1) CANES-Ashore Production Units MIP ^(†) (1)	248.500	2	0.497	331.000	1	0.331	541.000	3	1.623	511.000	5	2.555	-	-	0.000	511.000	5	2.555
1.1.2) CANES - Ashore Technical Insertion - MIP ^(†)	-	-	0.000	-	-	0.000	278.000	2	0.556	-	-	0.000	-	-	0.000	-	-	0.000
1.1.3) Consolidated Prior Year Requirements ⁽²⁾	4,314.000	1	4.314	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	4.811	-	-	0.331	-	-	2.179	-	-	2.555	-	-	0.000	-	-	2.555
Subtotal: Hardware - CANES Intell Procurement Cost	-	-	4.811	-	-	0.331	-	-	2.179	-	-	2.555	-	-	0.000	-	-	2.555
Hardware - CANES Intell Installations Cost																		
Recurring Cost																		
2.1.1) CANES - Ashore Technical Insertion Install - MIP ⁽³⁾	-	-	0.000	-	-	0.000	-	-	0.144	-	-	0.000	-	-	0.000	-	-	0.000
2.1.2) CANES - Ashore Production Units Install - MIP ⁽⁴⁾	-	-	0.427	-	-	0.100	-	-	0.000	-	-	0.950	-	-	0.000	-	-	0.950
Subtotal: Recurring Cost	-	-	0.427	-	-	0.100	-	-	0.144	-	-	0.950	-	-	0.000	-	-	0.950

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10						P-1 Line Item Number / Title: 2925 / CANES Intell						Item Number / Title [DODIC]: 1 / CANES Intell						
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Subtotal: Hardware - CANES Intell Installations Cost	-	-	0.427	-	-	0.100	-	-	0.144	-	-	0.950	-	-	0.000	-	-	0.950
Support - CANES Intell Support Cost																		
3.1) CANES - Ashore Production Support (MIP)	-	-	0.026	-	-	0.017	-	-	0.104	-	-	0.119	-	-	0.000	-	-	0.119
3.2) CANES - Ashore Design Service Agent (MIP)	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.082	-	-	0.000	-	-	0.082
Subtotal: Support - CANES Intell Support Cost	-	-	0.026	-	-	0.017	-	-	0.104	-	-	0.201	-	-	0.000	-	-	0.201
Gross/Weapon System Cost	-	-	5.264	-	-	0.448	-	-	2.427	-	-	3.706	-	-	0.000	-	-	3.706
Remarks:																		
[Hardware/Recurring] Ashore procurement quantities are detailed as follows: Technical Training Equipment (TTE) - PY (2), FY18 (1), FY20-FY24 (0); Maritime Operation Center (MOC)(including Aegis Ashore) - PY (0); FY19 (3), FY20 (5), FY21-24(0).																		
- A MOC is a fully operational system configuration. A TTE configuration is a subset of a MOC configuration. This scale difference accounts for the fluctuation in per unit costs across fiscal years commensurate with the procurement quantities outlined in above note.																		
-TTE has no associated DSA requirements.																		
(†) indicates the presence of a P-5a																		
Footnotes:																		
(1) Ashore procurement quantities are detailed as follows: Technical Training Equipment (TTE) - PY (2), FY18 (1), FY20-FY24 (0); Maritime Operation Center (MOC)(including Aegis Ashore) - PY (0); FY19 (3), FY20 (5), FY21-24(0). - A MOC is a fully operational system configuration. A TTE configuration is a subset of a MOC configuration. This scale difference accounts for the fluctuation in per unit costs across fiscal years commensurate with the procurement quantities outlined in above note.																		
(2) Consolidated Prior Year requirements consists of Cooperative Maritime Forces Pacific (CMFP). Production Lead Time is 8 months for First Articles. First Articles are defined as necessary production design drawings, environmental (shock and vibration) qualifications, logistics and training artifacts as well as a certified tested baseline provided to the government for each platform first of its kind. All following articles of the same variant require a Production Lead Time of 5 months for Ashore units and 6 months for afloat units. Total Ashore lead time, including 1 month Admin lead time and 4 months for integration, assembly and testing, is 10 months. Ashore production lead times require one month less than Afloat due to minimized shock and vibration requirements for shore facilities. CANES First Articles are not installed. First Article average unit cost fluctuations are attributable to variances in system configuration requirements among shore sites. A shore training unit (TTE) has fewer users and runs fewer applications than a shore Maritime Operations Center (MOC). MOCs are larger in scale compared to the shore training sites and represent a super set of users, applications and connected systems.																		
(3) Ashore Technical Insertion Installation Quantities are as follows: FY18 (0), FY19 (2), FY20 (0), FY21 (0)																		
(4) Ashore Production Unit Installation quantities are as follows: FY18 (1), FY19 (0), FY20 (3), FY21 (5)																		

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10			P-1 Line Item Number / Title: 2925 / CANES Intell						Item Number / Title [DODIC]: 1 / CANES Intell			
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) CANES-Ashore Production Units MIP		2018 ⁽⁵⁾	VARIOUS ⁽⁶⁾ / Various	C / TBD	San Diego	Feb 2018	Aug 2018	1	331.000	Y		Oct 2017
1.1.1) CANES-Ashore Production Units MIP		2019 ⁽⁷⁾	VARIOUS ⁽⁶⁾ / Various	C / TBD	San Diego	Dec 2018	Jun 2019	3	541.000	Y		Oct 2018
1.1.1) CANES-Ashore Production Units MIP		2020 ⁽⁸⁾	VARIOUS ⁽⁶⁾ / Various	C / TBD	San Diego	Nov 2019	May 2020	5	511.000	N	Nov 2019	Oct 2019
1.1.2) CANES - Ashore Technical Insertion - MIP		2019 ⁽⁹⁾	Various ⁽¹⁰⁾ / Various	C / TBD	San Diego	Dec 2018	Jun 2019	2	278.000	Y		Oct 2018

Footnotes:

⁽⁵⁾ CANES: Full Production Contract has 7 possible vendors on MAC award: Northrop Grumman Systems Corp, BAE Sytems Technology Solutions & Services, General Dynamics C4 Systems, Global Technical Systems, SERCO, Inc, CGI Federal Inc, DRS Laurel Technologies. This contract will be used for both production and tech refresh units.

⁽⁶⁾ CANES: Full Production Contract has 7 possible vendors on MAC award: Northrop Grumman Systems Corp, BAE Sytems Technology Solutions & Services, General Dynamics C4 Systems, Global Technical Systems, SERCO, Inc, CGI Federal Inc, DRS Laurel Technologies. This contract will be used for both production and tech refresh units.

⁽⁷⁾ CANES: Full Production Contract has 7 possible vendors on MAC award: Northrop Grumman Systems Corp, BAE Sytems Technology Solutions & Services, General Dynamics C4 Systems, Global Technical Systems, SERCO, Inc, CGI Federal Inc, DRS Laurel Technologies. This contract will be used for both production and tech refresh units.

⁽⁸⁾ CANES: Full Production Contract has 7 possible vendors on MAC award: Northrop Grumman Systems Corp, BAE Sytems Technology Solutions & Services, General Dynamics C4 Systems, Global Technical Systems, SERCO, Inc, CGI Federal Inc, DRS Laurel Technologies. This contract will be used for both production and tech refresh units.

⁽⁹⁾ CANES: Full Production Contract has 7 possible vendors on MAC award: Northrop Grumman Systems Corp, BAE Sytems Technology Solutions & Services, General Dynamics C4 Systems, Global Technical Systems, SERCO, Inc, CGI Federal Inc, DRS Laurel Technologies. This contract will be used for both production and tech refresh units.

⁽¹⁰⁾ CANES: Full Production Contract has 7 possible vendors on MAC award: Northrop Grumman Systems Corp, BAE Sytems Technology Solutions & Services, General Dynamics C4 Systems, Global Technical Systems, SERCO, Inc, CGI Federal Inc, DRS Laurel Technologies. This contract will be used for both production and tech refresh units.

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Exhibit P-3a, Individual Modification: PB 2020 Navy						Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10				P-1 Line Item Number / Title: 2925 / CANES Intell				Modification Number / Title: 1 / CANES-Afloat 5G010/5G777 MIP			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	313.766	45.627	51.038	49.007	0.000	49.007	43.952	50.461	47.384	46.391	433.974	1,081.600
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	313.766	45.627	51.038	49.007	0.000	49.007	43.952	50.461	47.384	46.391	433.974	1,081.600
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	313.766	45.627	51.038	49.007	0.000	49.007	43.952	50.461	47.384	46.391	433.974	1,081.600
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The consolidation of existing Afloat Network programs of record designed to provide an agile, responsive Common Computing Environment (CCE) and Agile Core Services (ACS) within and upon which application developers will host Command and Control, Warfare, Intelligence, Logistics, and business and education applications and services. Migration of Non-Classified Enclave (NCE) capabilities into the CANES baseline.

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10					P-1 Line Item Number / Title: 2925 / CANES Intell					Modification Number / Title: 1 / CANES-Afloat 5G010/5G777 MIP			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: Consolidated Afloat Networks & Enterprise Services (CANES) MIP					Modification Type: TBD					Related RDT&E PEs: 0303238N			
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
<i>Modification Item 1 of 1:</i> CANES-Afloat 5G010/5G777 MIP													
B Kits													
Recurring													
1.1.1) CANES - Afloat Production Units - MIP - NonOrganic ⁽¹¹⁾	86 / 151.307	20 / 19.459	14 / 12.448	18 / 14.015	- / -	18 / 14.015	19 / 14.755	12 / 8.492	12 / 9.186	1 / 0.733	- / -	182 / 230.395	
1.1.2) CANES Afloat Technical Insertion - MIP - NonOrganic ⁽¹²⁾	14 / 8.197	9 / 6.955	22 / 17.070	18 / 14.039	- / -	18 / 14.039	14 / 9.255	41 / 23.702	22 / 13.206	48 / 28.258	337 / 247.501	525 / 368.183	
<i>Subtotal: Recurring</i>	- / 159.504	- / 26.414	- / 29.518	- / 28.054	- / -	- / 28.054	- / 24.010	- / 32.194	- / 22.392	- / 28.991	- / 247.501	- / 598.578	
Non-Recurring													
1.2.1) CANES - Afloat First Articles - MIP - Organic ⁽¹³⁾	11 / 35.627	1 / 0.618	1 / 0.625	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	13 / 36.870	
1.2.2) CANES-Non-Recurring Engineering (MIP) - Organic	- / 4.732	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 4.732	
<i>Subtotal: Non-Recurring</i>	- / 40.359	- / 0.618	- / 0.625	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 41.602	
<i>Subtotal: CANES-Afloat 5G010/5G777 MIP</i>	111 / 199.863	30 / 27.032	37 / 30.143	36 / 28.054	- / -	36 / 28.054	33 / 24.010	53 / 32.194	34 / 22.392	49 / 28.991	337 / 247.501	720 / 640.180	
<i>Subtotal: Procurement, All Modification Items</i>	- / 199.863	- / 27.032	- / 30.143	- / 28.054	- / -	- / 28.054	- / 24.010	- / 32.194	- / 22.392	- / 28.991	- / 247.501	- / 640.180	
Support (All Modification Items)													
2.1) CANES - Afloat Production Support (MIP)	- / 8.306	- / 1.390	- / 1.403	- / 1.327	- / 0.000	- / 1.327	- / 1.155	- / 1.542	- / 1.077	- / 1.391	- / 11.762	- / 29.353	
2.2) CANES - Afloat Design Service Agent (MIP)	- / 13.204	- / 1.842	- / 0.818	- / 1.541	- / 0.000	- / 1.541	- / 1.315	- / 1.083	- / 2.570	- / 1.871	- / 10.596	- / 34.840	
<i>Subtotal: Support</i>	- / 21.510	- / 3.232	- / 2.221	- / 2.868	- / -	- / 2.868	- / 2.470	- / 2.625	- / 3.647	- / 3.262	- / 22.358	- / 64.193	
Installation													
<i>Modification Item 1 of 1:</i> CANES-Afloat 5G010/5G777 MIP	- / 92.393	- / 15.363	- / 18.674	- / 18.085	- / 0.000	- / 18.085	- / 17.472	- / 15.642	- / 21.345	- / 14.138	- / 164.115	- / 377.227	
<i>Subtotal: Installation</i>	- / 92.393	- / 15.363	- / 18.674	- / 18.085	- / -	- / 18.085	- / 17.472	- / 15.642	- / 21.345	- / 14.138	- / 164.115	- / 377.227	
Total													
Total Cost (Procurement + Support + Installation)	313.766	45.627	51.038	49.007	0.000	49.007	43.952	50.461	47.384	46.391	433.974	1,081.600	

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Exhibit P-3a, Individual Modification: PB 2020 Navy							Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10				P-1 Line Item Number / Title: 2925 / CANES Intell				Modification Number / Title: 1 / CANES-Afloat 5G010/5G777 MIP				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Modification Item 1 of 1: CANES-Afloat 5G010/5G777 MIP												
Manufacturer Information												
Manufacturer Name: Multiple Vendors (CANES - Afloat Production Units - MIP) ⁽¹⁴⁾							Manufacturer Location: Various					
Administrative Leadtime (in Months): 1							Production Leadtime (in Months): 6					
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates	Nov 2017	Dec 2018	Nov 2019									
Delivery Dates	May 2018	Jun 2019	May 2020									
Manufacturer Name: Multiple Vendors (CANES Afloat Technical Insertion - MIP) ⁽¹⁵⁾							Manufacturer Location: Various					
Administrative Leadtime (in Months): 1							Production Leadtime (in Months): 6					
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates	Nov 2017	Dec 2018	Nov 2019									
Delivery Dates	May 2018	Jun 2019	May 2020									
Installation Information												
Method of Implementation: [none specified]:: Installation Name: CANES - Afloat Production Units - MIP												
Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	76 / 89.803	10 / 11.585	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	86 / 101.388
FY 2018	- / -	- / -	20 / 16.136	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	20 / 16.136
FY 2019	- / -	- / -	- / -	14 / 11.002	0 / 0.000	14 / 11.002	- / -	- / -	- / -	- / -	0 / 0.000	14 / 11.002
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	18 / 11.897	- / -	- / -	- / -	0 / 0.000	18 / 11.897
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	19 / 11.571	- / -	- / -	0 / 0.000	19 / 11.571
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	12 / 7.758	- / -	0 / 0.000	12 / 7.758
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	12 / 7.323	0 / 0.000	12 / 7.323
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.632	1 / 0.632
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	76 / 89.803	10 / 11.585	20 / 16.136	14 / 11.002	0 / 0.000	14 / 11.002	18 / 11.897	19 / 11.571	12 / 7.758	12 / 7.323	1 / 0.632	182 / 167.707

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Exhibit P-3a, Individual Modification: PB 2020 Navy																							Date: March 2019								
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10											P-1 Line Item Number / Title: 2925 / CANES Intell											Modification Number / Title: 1 / CANES-Afloat 5G010/5G777 MIP									
ID Code (A=Service Ready, B=Not Service Ready) :																	MDAP/MAIS Code:														
Modification Item 1 of 1: CANES-Afloat 5G010/5G777 MIP																															
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: CANES - Afloat Production Units - MIP																															
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	76	-	3	3	1	4	11	2	6	1	6	4	3	3	9	3	3	2	9	6	2	5	3	3	1	2	5	4	1	1	182
Out	71	5	-	3	3	1	4	11	2	6	1	6	4	3	3	9	3	3	2	9	6	2	5	3	3	1	2	5	4	2	182
Method of Implementation: [none specified]:: Installation Name: CANES Afloat Technical Insertion - MIP																															
Installation Cost		Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total																		
		<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>																	
Prior Years		5 / 2.590	9 / 3.778	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	14 / 6.368																		
FY 2018		- / -	- / -	9 / 2.538	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	9 / 2.538																		
FY 2019		- / -	- / -	- / -	22 / 7.083	0 / 0.000	22 / 7.083	- / -	- / -	- / -	- / -	0 / 0.000	22 / 7.083																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	18 / 5.575	- / -	- / -	- / -	0 / 0.000	18 / 5.575																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	14 / 4.071	- / -	- / -	0 / 0.000	14 / 4.071																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	41 / 13.587	- / -	0 / 0.000	41 / 13.587																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	22 / 6.815	0 / 0.000	22 / 6.815																		
FY 2024		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	48 / 20.400	48 / 20.400																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	337 / 143.083	337 / 143.083																		
Total		5 / 2.590	9 / 3.778	9 / 2.538	22 / 7.083	0 / 0.000	22 / 7.083	18 / 5.575	14 / 4.071	41 / 13.587	22 / 6.815	385 / 163.483	525 / 209.520																		
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	5	-	4	1	4	2	2	1	4	5	4	10	3	2	5	6	5	2	3	2	7	4	19	6	12	2	7	7	6	385	525
Out	2	3	-	4	1	4	2	2	1	4	5	4	10	3	2	5	6	5	2	3	2	7	4	19	6	12	2	7	7	391	525
Method of Implementation (Organic): CANES - Afloat First Articles - MIP - Not Installed																															
																							Installation Quantity: 13								
Footnotes:																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2925 / CANES Intell	Modification Number / Title: 1 / CANES-Afloat 5G010/5G777 MIP
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
(11) The decrease in production unit cost from FY19 to FY20 is due to a lower percentage of more expensive Force Level units in FY20 compared to FY19. -CANES installations are conducted across several fleet concentration areas supported by six installation Multiple Award Contract (MAC) holders. The SPAWAR Fleet Readiness Directorate (FRD) Installation Organization (FIO) has ensured sufficient Alteration Installation Teams (AIT) resources are available to meet the FY20 - 24 CANES installation plan. -The procurement average unit cost fluctuation is due to variance in system configuration requirements for each CANES platform type. Furthermore, because CANES production units and installations are procured through separate multiple award contracts, there are unit cost fluctuations associated with the contracting process. A CANES unit level platform (DDG/CG/LSD) requires a smaller system, supporting fewer users and applications than force level platforms with a greater number of users and applications. For example, a CANES DDG design consists of 18 equipment racks and ~400 workstations, while a CANES CVN system consists of 48 equipment racks and ~3000 workstations. The average procurement cost (hardware, software, integration, and engineering support) for a unit level ship ranges from \$5.2M to \$7.5M, while the average procurement cost for a force level platform ranges from \$11.8M to \$15.6M, and submarine unit procurement costs range from \$2.7M to \$4.6M. These costs include both the MIP and non-MIP components of the CANES units. -CANES Afloat production units require an additional 5 months after delivery for integration, assembly and testing prior to installation start. Installations do not begin until 11 months after contract award (6 months production lead time (PLT) + 5 months integration). Total lead time, including admin lead time, is 12 months. -Installation cost fluctuations are attributed to and dependent on ship class, variant of predecessor system the hull currently has installed. As an example of variant differences, if a CVN has an ISNS Delta variant installed, a CANES installation is estimated to be \$18.2M. If that same CVN had a legacy Asynchronous Transfer Mode Local Area Network (ATM LAN) the CANES installation is estimated to be \$22.4M. This cost is driven by a number of issues such as the requirement for new or additional wiring, plugs, and configuration changes. (12) The increase in production unit cost from FY19 to FY20 is due to a higher percentage of more expensive Force Level units in FY20 compared to FY19. - CANES technical insertion installations are conducted across several fleet concentration areas supported by six installation Multiple Award Contract (MAC) holders. The SPAWAR Fleet Readiness Directorate (FRD) Installation Organization (FIO) has ensured sufficient Alteration Installation Teams (AIT) resources are available to meet the FY20 - 24 CANES installation plan. - CANES Afloat technical insertion units require an additional 5 months after delivery for operational integration, assembly and testing prior to installation start. Installations do not begin until 11months after contract award (6 months production lead time (PLT) + 5 months integration). Total lead time, including admin lead time, is 12 months. (13) First articles are defined as necessary production design drawings, environmental (shock and vibration) qualifications, logistics and training artifacts as well as a certified tested baseline provided to the government for each platform first of its kind. First articles are separate from production units and must be bought prior to the procurement of the corresponding production units. Procurement Lead Time (PLT) is 8 months for First Articles (DDG, CVN, submarines, etc). All following production articles of the same variant require a PLT of 6 months. CANES First Articles are not installed. Average unit cost fluctuations are attributable to variances in system configuration requirements among platforms. A DDG/CG/LSD (unit level platforms) has fewer users and runs fewer applications than a LHD/CVN/LPD (force level platforms). Force level platforms are larger in scale compared to the unit level ships and represent a super set of users, applications and connected systems. (14) CANES: Full Production Contract has 7 possible vendors on MAC award: Northrop Grumman Systems Corp, BAE Sytems Technology Solutions & Services, General Dynamics C4 Systems, Global Technical Systems, SERCO, Inc, CGI Federal Inc, DRS Laurel Technologies. This contract will be used for both production and tech refresh units. (15) CANES: Full Production Contract has 7 possible vendors on MAC award: Northrop Grumman Systems Corp, BAE Sytems Technology Solutions & Services, General Dynamics C4 Systems, Global Technical Systems, SERCO, Inc, CGI Federal Inc, DRS Laurel Technologies. This contract will be used for both production and tech refresh units.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment							P-1 Line Item Number / Title: 2940 / Gen Purp Elec Test Equip (GPETE)					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	13,376.957	6.861	5.985	13.028	0.000	13.028	7.885	9.771	9.272	9.441	49.397	13,488.597
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	13,376.957	6.861	5.985	13.028	0.000	13.028	7.885	9.771	9.272	9.441	49.397	13,488.597
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	13,376.957	6.861	5.985	13.028	0.000	13.028	7.885	9.771	9.272	9.441	49.397	13,488.597
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: This program provides for the initial procurement and distribution of General Purpose Electronic Test Equipment (GPETE). GPETE funding is provided to execute a detailed, multi-year sustainment and modernization plan for intermediate and organizational maintenance activities. GPETE is the equipment employed to ensure the accuracy of installation, alignment, and maintenance (preventative and routine) of all navy weapons systems ashore and afloat. The GPETE procured must meet rigid technical requirements, be cost effective and satisfy valid deficiencies in authorized allowance. Within the TMDE program, GPETE is classified under 4 functional groups: Fiber Optics (M6000), Signal Generators (M6001), Oscilloscopes & Meters (M6002), and Passive/Ancillary/Mechanical (M6004). The program also breaks out a fifth cost code (M6003) for non-equipment (i.e. labor) tasks including engineering, procurement and integrated logistics support. The TMDE program procures Commercial-off-the-Shelf (COTS; i.e. non-government manufactured test equipment that is available to the general public) GPETE to address the maintenance requirements across shipboard/shore- based activities and programs. Approximately 80% of the annual test equipment requirements are procured through the DOD Supply System, or MILSTRIP, process. When the program procures through MILSTRIP, DLA or NAVSUP WSS fills the requisition. The remaining 20% of procurements are Simplified Acquisition Purchase (SAP) contracts or purchase card (P-card) buys. SAP and Pcard requisitions are utilized only for obsolete test equipment that is no longer available for procurement through MILSTRIP. Any variance in unit costs and quantity across fiscal years is attributable to the diversity and varying complexity of the Commercial-off-the-Shelf GPETE to be procured from year to year to address the maintenance requirements across shipboard/shore- based activities and programs. A portion of the cost growth from FY to FY within the cost codes can be attributed to an average industry cost growth of approximately 2%. Any average unit cost code growth beyond this 2% would be the result of planned procurements of larger quantities of more complex/capable GPETE and/or modernization to more complex/capable GPETE, which tend to be more expensive. The Navy's inventory of GPETE is approaching obsolescence and requires modernization to avoid deterioration in the accuracy of our weapons systems. Many models are no longer in production, so replacement equipment must be purchased from newer model inventory, some of which have a greater unit cost.												

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment						P-1 Line Item Number / Title: 2940 / Gen Purp Elec Test Equip (GPETE)				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Gen Purp Elec Test Equip (GPETE)	P-5a			- / 13,376.957	- / 6.861	- / 5.985	- / 13.028	- / -	- / 13.028
P-40	Total Gross/Weapon System Cost				- / 13,376.957	- / 6.861	- / 5.985	- / 13.028	- / 0.000	- / 13.028
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										

Justification:

Justification for increase in 2020 is due to Submarine Reactor GPETE requirements and Surface ships/AEGIS Ashore critical SPY radar & BMD GPETE requirements applies to functional test equipment groups: Signal Generators (M6001); Oscilloscopes & Meters (M6002), and Passive/Ancillary and Mechanical (M6004).

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10							P-1 Line Item Number / Title: 2940 / Gen Purp Elec Test Equip (GPETE)								Aggregated Items Title: Gen Purp Elec Test Equip (GPETE)					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
1) M6000 FIBER OPTICS																				
1.1) FIBER OPTICS AND DATA COMM (1)(f)	A		11,528.63	227	2.617	6,594.59	37	0.244	6,625.00	32	0.212	6,695.65	69	0.462	-	-	-	6,695.65	69	0.462
Subtotal: 1) M6000 FIBER OPTICS			-	-	2.617	-	-	0.244	-	-	0.212	-	-	0.462	-	-	-	-	-	0.462
2) M6001 SIGNAL GENERATORS																				
2.1) SIGNAL GENERATORS & ANALYZERS(f)	A		11,370.22	759	8.630	12,400.00	60	0.744	12,461.54	52	0.648	11,479.67	123	1.412	-	-	-	11,479.67	123	1.412
Subtotal: 2) M6001 SIGNAL GENERATORS			-	-	8.630	-	-	0.744	-	-	0.648	-	-	1.412	-	-	-	-	-	1.412
3) M6002 OSCILLSCPS, METERS																				
3.1) OSCILLSCPS, METERS&COUNTERS (2)(f)	A		4,033.09	5,167	20.839	3,383.45	991	3.353	3,382.38	865	2.926	3,835.54	1,660	6.367	-	-	-	3,835.54	1,660	6.367
Subtotal: 3) M6002 OSCILLSCPS, METERS			-	-	20.839	-	-	3.353	-	-	2.926	-	-	6.367	-	-	-	-	-	6.367
4) M6003 PROC ENGR AND DOCUMENTATION																				
4.1) PROC ENG AND DOCUMENTATION	A		-	-	8.839	-	-	0.792	-	-	0.691	-	-	1.505	-	-	-	-	-	1.505
Subtotal: 4) M6003 PROC ENGR AND DOCUMENTATION			-	-	8.839	-	-	0.792	-	-	0.691	-	-	1.505	-	-	-	-	-	1.505
5) M6004 PASSIVE ANCILLARY AND MECHANICAL																				
5.1) PASSIVE ANCILLARY AND MECHANICAL(f)	A		3,231K	4,127	13,336.032	1,674.42	1,032	1.728	1,674.08	901	1.508	1,657.58	1,980	3.282	-	-	-	1,657.58	1,980	3.282
Subtotal: 5) M6004 PASSIVE ANCILLARY AND MECHANICAL			-	-	13,336.032	-	-	1.728	-	-	1.508	-	-	3.282	-	-	-	-	-	3.282
Total			-	-	13,376.957	-	-	6.861	-	-	5.985	-	-	13.028	-	-	-	-	-	13.028

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

(†) indicates the presence of a P-5a

Footnotes:

(1) P40a Footnote: A portion of the minimal cost growth from FY to FY within cost codes M6000 and M6002 are directly attributed to an average industry unit cost growth of approximately 2%. This increase is typical of commercial ready/off the shelf general purpose test equipment.

(2) P40a Footnote: A portion of the minimal cost growth from FY to FY within cost codes M6000 and M6002 are directly attributed to an average industry unit cost growth of approximately 2%. This increase is typical of commercial ready/off the shelf general purpose test equipment.

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10			P-1 Line Item Number / Title: 2940 / Gen Purp Elec Test Equip (GPETE)						Aggregated Items: Gen Purp Elec Test Equip (GPETE)			
Item Number / Title [DODIC]	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1) M6000 FIBER OPTICS												
1.1) FIBER OPTICS AND DATA COMM ⁽¹⁾		2012	NSWC / CHINA LAKE	WR	SEAL BEACH	Nov 2011	Mar 2012	30	10,000.00	Y		
1.1) FIBER OPTICS AND DATA COMM ⁽¹⁾		2013	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2012	Mar 2013	29	10,000.00	Y		
1.1) FIBER OPTICS AND DATA COMM ⁽¹⁾		2014	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2013	Mar 2014	34	6,882.35	Y		
1.1) FIBER OPTICS AND DATA COMM ⁽¹⁾		2015	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2014	Mar 2015	34	6,561.24	Y		
1.1) FIBER OPTICS AND DATA COMM ⁽¹⁾		2016	NSWC / CHINA LAKE	WR	CHINA LAKE	Feb 2016	Jun 2016	35	7,061.46	Y		
1.1) FIBER OPTICS AND DATA COMM ⁽¹⁾		2017	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2016	Mar 2017	35	6,517.00	Y		
1.1) FIBER OPTICS AND DATA COMM ⁽¹⁾		2018	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2017	Mar 2018	37	6,594.59	Y		
1.1) FIBER OPTICS AND DATA COMM ⁽¹⁾		2019	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2018	Mar 2019	32	6,625.00	Y		
1.1) FIBER OPTICS AND DATA COMM ⁽¹⁾		2020	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2019	Mar 2020	69	6,695.65	Y		
2) M6001 SIGNAL GENERATORS												
2.1) SIGNAL GENERATORS & ANALYZERS		2012	NSWC / CHINA LAKE	WR	SEAL BEACH	Nov 2011	Mar 2012	186	16,000.00	Y		
2.1) SIGNAL GENERATORS & ANALYZERS		2013	NSWC / CHINA LAKE	WR	CHINA LAKE	Dec 2012	Apr 2013	171	16,000.00	Y		
2.1) SIGNAL GENERATORS & ANALYZERS		2014	NSWC / CHINA LAKE	WR	CHINA LAKE	Dec 2013	Apr 2014	72	10,166.67	Y		
2.1) SIGNAL GENERATORS & ANALYZERS		2015	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2014	Mar 2015	71	9,594.16	Y		
2.1) SIGNAL GENERATORS & ANALYZERS		2016	NSWC / CHINA LAKE	WR	CHINA LAKE	Feb 2016	Jun 2016	71	10,629.31	Y		
2.1) SIGNAL GENERATORS & ANALYZERS		2017	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2016	Mar 2017	73	9,547.95	Y		
2.1) SIGNAL GENERATORS & ANALYZERS		2018	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2017	Mar 2018	60	12,400.00	Y		
2.1) SIGNAL GENERATORS & ANALYZERS		2019	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2018	Mar 2019	52	12,461.54	Y		

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10				P-1 Line Item Number / Title: 2940 / Gen Purp Elec Test Equip (GPETE)					Aggregated Items: Gen Purp Elec Test Equip (GPETE)			
Item Number / Title [DODIC]	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
2.1) SIGNAL GENERATORS & ANALYZERS		2020	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2019	Mar 2020	123	11,479.67	Y		
3) M6002 OSCILLSCPS, METERS												
3.1) OSCILLSCPS, METERS&COUNTERS ⁽²⁾		2012	NSWC / CHINA LAKE	WR	SEAL BEACH	Nov 2011	Mar 2012	545	4,000.00	Y		
3.1) OSCILLSCPS, METERS&COUNTERS ⁽²⁾		2013	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2012	Mar 2013	501	4,000.00	Y		
3.1) OSCILLSCPS, METERS&COUNTERS ⁽²⁾		2014	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2013	Mar 2014	851	3,235.02	Y		
3.1) OSCILLSCPS, METERS&COUNTERS ⁽²⁾		2015	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2014	Mar 2015	846	3,630.01	Y		
3.1) OSCILLSCPS, METERS&COUNTERS ⁽²⁾		2016	NSWC / CHINA LAKE	WR	CHINA LAKE	Feb 2016	Jun 2016	846	4,021.67	Y		
3.1) OSCILLSCPS, METERS&COUNTERS ⁽²⁾		2017	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2016	Mar 2017	1,005	3,125.37	Y		
3.1) OSCILLSCPS, METERS&COUNTERS ⁽²⁾		2018	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2017	Mar 2018	991	3,383.45	Y		
3.1) OSCILLSCPS, METERS&COUNTERS ⁽²⁾		2019	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2018	Mar 2019	865	3,382.38	Y		
3.1) OSCILLSCPS, METERS&COUNTERS ⁽²⁾		2020	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2019	Mar 2020	1,660	3,835.54	Y		
5) M6004 PASSIVE ANCILLARY AND MECHANICAL												
5.1) PASSIVE ANCILLARY AND MECHANICAL		2014	NSWC / CHINA LAKE	WR	SEAL BEACH	Nov 2013	Mar 2014	1,029	12,955.30	Y		
5.1) PASSIVE ANCILLARY AND MECHANICAL		2015	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2014	Mar 2015	1,026	1,542.83	Y		
5.1) PASSIVE ANCILLARY AND MECHANICAL		2016	NSWC / CHINA LAKE	WR	CHINA LAKE	Feb 2016	Oct 2016	1,026	1,709.29	Y		
5.1) PASSIVE ANCILLARY AND MECHANICAL		2017	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2016	Jul 2017	1,046	1,547.80	Y		
5.1) PASSIVE ANCILLARY AND MECHANICAL		2018	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2017	Mar 2018	1,032	1,674.42	Y		
5.1) PASSIVE ANCILLARY AND MECHANICAL		2019	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2018	Mar 2019	901	1,674.08	Y		
5.1) PASSIVE ANCILLARY AND MECHANICAL		2020	NSWC / CHINA LAKE	WR	CHINA LAKE	Nov 2019	Mar 2020	1,980	1,657.58	Y		

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2940 / Gen Purp Elec Test Equip (GPETE)	Aggregated Items: Gen Purp Elec Test Equip (GPETE)

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment	P-1 Line Item Number / Title: 2950 / Network Tactical Common Data Link (CDL)

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: 0205604N	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1.710	8.081	5.413	5.193	0.000	5.193	0.000	20.052	20.456	20.865	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1.710	8.081	5.413	5.193	0.000	5.193	0.000	20.052	20.456	20.865	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1.710	8.081	5.413	5.193	0.000	5.193	0.000	20.052	20.456	20.865	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	0.147	0.350	-	0.350	-	-	-	0.101	Continuing	Continuing
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Communications Data Link System Technical Refresh (CDLS TR): Provides fielding link management computer upgrades to meet Fleet Windows 10 Operating System IA requirements, a second 360 degree data link, as well as the inclusion of digital distribution of Intelligence Surveillance and Reconnaissance (ISR), Full Motion Video (FMV), and Anti-Submarine Warfare (ASW) data in Plain Text (PT) to Automated Digital Network System (ADNS) for shipboard dissemination to support Anti-Access/Area Denial (A2AD). CDLS TR supports various Common Data Link (CDL) air platforms including MH-60R, MQ-4 Triton, MQ-8B/C Fire Scout, P-3 and P-8 to include command and control of the aircraft during flight operations. The CDLS TR upgrade includes a Flight Deck Checkout test link between aircraft on the deck through CDLS to end-user prior to flight operations to ensure end-to-end connectivity of organic assets prior to missions.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment						P-1 Line Item Number / Title: 2950 / Network Tactical Common Data Link (CDL)				
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: 0205604N			Other Related Program Elements: N/A			
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Network Tactical Common Data Link (CDL)				- / 0.290	- / -	- / -	- / -	- / -	- / -
P-3a	1 / CDLS Tech Refresh (TBD)				- / 1.420	- / 8.081	- / 5.413	- / 5.193	- / 0.000	- / 5.193
P-40	Total Gross/Weapon System Cost				- / 1.710	- / 8.081	- / 5.413	- / 5.193	- / 0.000	- / 5.193
Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Network Tactical Common Data Link (CDL)				- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / CDLS Tech Refresh (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 20.107
P-40	Total Gross/Weapon System Cost				- / 0.000	- / 20.052	- / 20.456	- / 20.865	Continuing	Continuing
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown. Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										
Justification: FY20 funding supports procurement of one (1) and installation of three (3) Communications Data Link System (CDLS) Technical Refresh (TR) systems on CVN platforms. Due to increased fleet Common Data Link (CDL) operations, CDLS Legacy obsolescence issues, and delayed fielding of the follow-on system (NTCDL), a CDLS Tech Refresh is required to extend the life of the system beyond its intended design. CDLS TR addresses whole system reliability, sub-component obsolescence, and emerging Anti-Access/Area Denial (A2AD) Fleet requirements that are significantly degrading Fleet readiness, including Operational Availability (Ao), and system supportability. CDLS TR also provides IA/Cyber security upgrades to Windows 10 OS.										

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy																Date: March 2019							
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10									P-1 Line Item Number / Title: 2950 / Network Tactical Common Data Link (CDL)									Aggregated Items Title: Network Tactical Common Data Link (CDL)					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total					
			Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)			
1) Network Tactical Common Data Link (CDL)																							
1) LINK-16 Antennas	A		145.000	2	0.290	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Subtotal: 1) Network Tactical Common Data Link (CDL)			-	-	0.290	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Total			-	-	0.290	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2950 / Network Tactical Common Data Link (CDL)	Modification Number / Title: 1 / CDLS Tech Refresh

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	1.420	8.081	5.413	5.193	0.000	5.193	0.000	0.000	0.000	0.000	0.000	20.107
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	1.420	8.081	5.413	5.193	0.000	5.193	0.000	0.000	0.000	0.000	0.000	20.107
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	1.420	8.081	5.413	5.193	0.000	5.193	0.000	0.000	0.000	0.000	0.000	20.107
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Communications Data Link System Technical Refresh (CDLS TR): Provides fielding link management computer upgrades to meet Fleet Windows 10 Operating System IA requirements, a second 360 degree data link, as well as the inclusion of digital distribution of Intelligence Surveillance and Reconnaissance (ISR), Full Motion Video (FMV), and Anti-Submarine Warfare (ASW) data in Plain Text (PT) to Automated Digital Network System (ADNS) for shipboard dissemination to support Anti-Access/Area Denial (A2AD). CLS TR supports various Common Data Link (CDL) air platforms including MH-60R, MQ-4 Triton, MQ-8B/C Fire Scout, P-3 and P-8 to include command and control of the aircraft during flight operations. The CDLS TR upgrade includes a Flight Deck Checkout test link between aircraft on the deck through CDLS to end-user prior to flight operations to ensure end-to-end connectivity of organic assets prior to missions.

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10				P-1 Line Item Number / Title: 2950 / Network Tactical Common Data Link (CDL)				Modification Number / Title: 1 / CDLS Tech Refresh					
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: [No Model Specified]				Modification Type: TBD				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	
Procurement													
<i>Modification Item 1 of 1:</i> CDLS Tech Refresh													
A Kits													
Recurring													
1.1.1) CDLS TR Procurement - NonOrganic	1 / 1.420	2 / 2.796	2 / 2.796	1 / 1.444	- / -	1 / 1.444	- / -	- / -	- / -	- / -	- / -	6 / 8.456	
<i>Subtotal: Recurring</i>	- / 1.420	- / 2.796	- / 2.796	- / 1.444	- / -	- / 1.444	- / -	- / -	- / -	- / -	- / 0.000	- / 8.456	
<i>Subtotal: CDLS Tech Refresh</i>	1 / 1.420	2 / 2.796	2 / 2.796	1 / 1.444	- / -	1 / 1.444	- / -	- / -	- / -	- / -	- / -	6 / 8.456	
<i>Subtotal: Procurement, All Modification Items</i>	- / 1.420	- / 2.796	- / 2.796	- / 1.444	- / -	- / 1.444	- / -	- / -	- / -	- / -	- / 0.000	- / 8.456	
Support (All Modification Items)													
2.1) CDLS TR DSA	- / -	- / 0.257	- / 0.241	- / 0.203	- / -	- / 0.203	- / -	- / -	- / -	- / -	- / -	- / 0.701	
2.2) CDLS TR Production Support	- / -	- / 0.168	- / 0.140	- / 0.087	- / -	- / 0.087	- / -	- / -	- / -	- / -	- / -	- / 0.395	
2.3) CDLS TR Non Recurring Engineering	- / -	- / 3.754	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 3.754	
<i>Subtotal: Support</i>	- / 0.000	- / 4.179	- / 0.381	- / 0.290	- / -	- / 0.290	- / -	- / -	- / -	- / -	- / 0.000	- / 4.850	
Installation													
<i>Modification Item 1 of 1:</i> CDLS Tech Refresh	- / 0.000	- / 1.106	- / 2.236	- / 3.459	- / 0.000	- / 3.459	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 6.801	
<i>Subtotal: Installation</i>	- / 0.000	- / 1.106	- / 2.236	- / 3.459	- / -	- / 3.459	- / -	- / -	- / -	- / -	- / 0.000	- / 6.801	
Total													
Total Cost (Procurement + Support + Installation)	1.420	8.081	5.413	5.193	0.000	5.193	0.000	0.000	0.000	0.000	0.000	20.107	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10										P-1 Line Item Number / Title: 2950 / Network Tactical Common Data Link (CDL)										Modification Number / Title: 1 / CDLS Tech Refresh											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: CDLS Tech Refresh																															
Manufacturer Information																															
Manufacturer Name: CUBIC															Manufacturer Location: San Diego, California																
Administrative Leadtime (in Months): 2															Production Leadtime (in Months): 12																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates		Dec 2017				Dec 2018																									
Delivery Dates		Dec 2018				Dec 2019																									
Manufacturer Name: TBD															Manufacturer Location: TBD																
Administrative Leadtime (in Months): 2															Production Leadtime (in Months): 9																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates										Dec 2019																					
Delivery Dates										Sep 2020																					
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: CDLS TR Procurement																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		- / -		1 / 1.106		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		1 / 1.106							
FY 2018		- / -		- / -		2 / 2.236		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 2.236							
FY 2019		- / -		- / -		- / -		2 / 2.306		0 / 0.000		2 / 2.306		- / -		- / -		- / -		- / -		0 / 0.000		2 / 2.306							
FY 2020		- / -		- / -		- / -		1 / 1.153		0 / 0.000		1 / 1.153		- / -		- / -		- / -		- / -		0 / 0.000		1 / 1.153							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		- / -		1 / 1.106		2 / 2.236		3 / 3.459		0 / 0.000		3 / 3.459		- / -		- / -		- / -		- / -		0 / 0.000		6 / 6.801							
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	1	-	1	1	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	
Out	-	-	-	-	-	1	-	1	1	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment							P-1 Line Item Number / Title: 2960 / Integ Combat System Test Facility					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	43.922	5.019	6.251	6.028	0.000	6.028	5.899	6.073	6.179	6.300	-	85.671
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	43.922	5.019	6.251	6.028	0.000	6.028	5.899	6.073	6.179	6.300	-	85.671
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	43.922	5.019	6.251	6.028	0.000	6.028	5.899	6.073	6.179	6.300	-	85.671
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	0.250	0.150	0.145	-	0.145	0.184	0.162	0.221	0.226	Continuing	Continuing
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:
 This program supports various Navy Land Based Test Sites (LBTS) required to support integration and interoperability testing. Sites include, but are not limited to: Naval Surface Warfare Center (NSWC) Dahlgren, Surface Combat System Center (SCSC) Wallops Island, and NSWC Dam Neck.

The United States Navy has a requirement to fully test and certify computer programs for maturity, Interoperability and Integration (I&I) prior to delivery to the Fleet. Commander, U.S. Fleet Forces Command (CFFC) provided specific direction to develop a unified modernization process and certify all combat system baselines for integration and interoperability as an integral step in the Chief of Naval Operations (CNO) Optimized Fleet Response Plan (O-FRP). Various Navy facilities, serving as LBTS, conduct the required testing in support of CVN, DDG, CG, LHD, LHA, LPD 17 and LSD class ships. These sites also comprise the Navy's Distributed Integration & Interoperability Assessment Capability (DIIAC) (supported through the use of JMETC network) alliance, which performs Interoperability Assessment and Systems Engineering Events (SEEs) for deploying Strike Groups.

These facilities also provide combat system in-service support to respond to emergent fleet problems. This capability tests and certifies new combat system baseline in a lab based environment, which has significantly reduced the cost of corrective action and shifted the burden of problem discovery away from the operator at sea. It also provides support to the acquisition community to conduct interoperability (shift to the left) testing earlier in the acquisition cycle.

As existing system experience parts obsolescence issues and tech refresh updates, the LBTS must procure and install existing test beds to accurately replicate the Command, Control, Communication, Computer, Combat System and Intelligence (C5I) configuration that are designed for the fleet. In addition, new combat systems architectures are under development for new ship classes such as LCS, CVN 78, DDG 1000, as well as new Open Architecture (OA) variants of legacy suites. Procurement of production representative systems of these OA combat systems being delivered to operational fleet units is critical to ensure that testing and subsequent certification of both current and newly installed combat systems is in accordance with NAVSEAINST 9410.2 Naval Warfare Systems Certification Policy (NWSCP) and the Optimized Fleet Response Plan (O-FRP).

The basic procurement outlined herein is directed at expanding various facilities capability to support Interoperability Integration and Stressful Endurance testing. Procurement requirements are directly tied to the interoperability testing schedule and establish independence between test beds allowing for parallel certification efforts. Procurements are required to build the necessary test beds and for laboratory support equipment. This budget procures lab support equipment that various facilities are able to support the new tactical subsystems that use Commercial Off-the-Shelf (COTS) equipment.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment		P-1 Line Item Number / Title: 2960 / Integ Combat System Test Facility
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
In addition, the basic program provides for equipment/upgrades for the Navy's Distributed Integration & Interoperability Assessment Capability (DIIAC) needed to conduct interoperability assessment testing. The DIIAC consists of 14 land based sites networked to certify computer programs prior to their delivery to the fleet and provides support to the acquisition community to conduct interoperability and integration (shift to the left) testing earlier in the acquisition cycle. Interoperability Assessment and Stressful Endurance testing is required for all deploying strike groups per the Joint Fleet Instruction. [P40A / M8400 - SESEF Electronic Equipment]: The Shipboard Electronic Systems Evaluation Facilities (SESEF) are Navy owned and operated test sites. The SESEF Program mission is to provide electromagnetic system tests and evaluations to afloat and shore commands for upgraded systems, to validate system performance following new construction and overhaul/availability, and to provide real-time assessment of material readiness in an operational environment. Also provided are: system modernization and integration, system and equipment component procurement and software (S/W) upgrades for test systems to include for Tactical Control and Navigation (TACAN), Antenna Radiation Pattern systems (ARP), Identification Friend or Foe (IFF), Direction Finder (DF)/Radio Direction Finder (RDF), LINK 11/16, Electronic Warfare/ Electronic Attack (EW/EA) and HF/VHF/UHF communication systems including secure voice. SESEFs have been used effectively to conduct TACAN certifications, support AN/SLQ-32 Electronic Warfare (EW) Planned Maintenance System (PMS), Ship Signals Exploitation Equipment (SSEE) and to detect and isolate shipboard system deficiencies leading to maintenance action to increase ship material readiness at the completion of construction, delivery availabilities, during routine ship operations, and prior to deployment. [P40A / M8500 - Interoperability Assessment Equipment]: M8500 - Interoperability assessment equipment known as Distributed Integration & Interoperability Assessment Capability (DIIAC) procures upgrades to support the 16 sites that comprise the Navy's DIIAC sites. Procures hardware that provides the DIIAC Operations Center (DOC) the ability to support monitoring and execution of events providing data collection and distribution. Funds are also allocated for site upgrades to meet current standards and allow scalability for DIIAC requirements; and, in addition, to enable the DIIAC to maintain efficiency and product improvement to interface with other Joint communities using Joint Mission Environment Test Community (JMETC) network. Focused on the force-level impact of new systems and platforms under development, the DIIAC supports testing that ensures Commander, Naval Sea System Command/Program Executive Offices (NAVSEA/PEOs) are delivering mature and interoperable warfare systems at the Platform and Strike Group levels, with NAVSEA providing Strike Force Interoperability Certification and Assessments, including IFF Mode 5 Testing. This is the only such testing of combat systems and Command, Control, Communication, Computer, Combat System and Intelligence (C5I) configuration items prior to shipboard delivery for operational use.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy							Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment					P-1 Line Item Number / Title: 2960 / Integ Combat System Test Facility					
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	ICSTF Program				- / 43.922	- / 5.019	- / 6.251	- / 6.028	- / -	- / 6.028
P-40	Total Gross/Weapon System Cost				- / 43.922	- / 5.019	- / 6.251	- / 6.028	- / 0.000	- / 6.028
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										

Justification:

Funding for procurements and installations for upgrades and modernization of the eight operational sites across the AORs to support the surface fleet spectrum requirements.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10						P-1 Line Item Number / Title: 2960 / Integ Combat System Test Facility									Aggregated Items Title: ICSTF Program					
Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
1) M8400 - SESEF Electronic Equipment																				
1.1) SESEF Electronic Equipment	A		-	-	28.794	-	-	1.376	-	-	3.027	-	-	2.772	-	-	-	-	-	2.772
Subtotal: 1) M8400 - SESEF Electronic Equipment			-	-	28.794	-	-	1.376	-	-	3.027	-	-	2.772	-	-	-	-	-	2.772
2) M8500 - Interoperability Assessment Equipment																				
2.1) Interoperability Assessment Equipment	A		-	-	15.128	-	-	3.643	-	-	3.224	-	-	3.256	-	-	-	-	-	3.256
Subtotal: 2) M8500 - Interoperability Assessment Equipment			-	-	15.128	-	-	3.643	-	-	3.224	-	-	3.256	-	-	-	-	-	3.256
Total			-	-	43.922	-	-	5.019	-	-	6.251	-	-	6.028	-	-	-	-	-	6.028

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment							P-1 Line Item Number / Title: 2970 / EMI Control Instrumentation					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	41.108	4.188	4.183	4.209	0.000	4.209	4.321	4.406	4.485	4.570	-	71.470
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	41.108	4.188	4.183	4.209	0.000	4.209	4.321	4.406	4.485	4.570	-	71.470
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	41.108	4.188	4.183	4.209	0.000	4.209	4.321	4.406	4.485	4.570	-	71.470
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: The EMI Control Instrumentation Program is supported by OPNAV N2N6, OPNAV N95, OPNAV N96, OPNAV N97 and OPNAV N98. The EMI Control Instrumentation Program provides Cradle to Grave Systems Engineering for Mission Assurance by implementing Electromagnetic Compatibility (EMC) hardware solutions, Spectrum Management (SM) software solutions, and by procuring specialized test equipment used in the characterization/quantification of EMI problems aboard U.S. Navy platforms. This ensures equipment, systems, and platforms meet their Operational Mission Requirements and goals within their intended operational Electromagnetic (EM) environment. MA004 - EMI (HARDWARE) FIXES: Procurement and installation of Electromagnetic Interference (EMI) Hardware Solutions (i.e. Fixes) will achieve Electromagnetic Compatibility (EMC) among and between shipboard electronic/electric systems and/or equipment. This will be accomplished by determining the optimal EMI fix hardware, evaluating the effectiveness of the EMI solution, then procuring and installing the required hardware with full integrated logistic support (ILS) as part of the system hardware (ECP, OA, FC, etc). The fixes may include various types of radio frequency (RF) filters, limiters, blankers, radar absorbing material (RAM) and shielding methods. MA004 - EMI (Hardware) Fixes is supported by OPNAV N95, OPNAV N96, OPNAV N97 and OPNAV N98. MA104 - EMI (SOFTWARE) FIXES: Procurement and installation of EMI Software Fixes for platform/strike group/Area of Operation. These specific spectrum procedures (software application capabilities) and frequency management techniques (software modules) will be used to eliminate and reduce EMI when hardware solutions are unacceptable. Funds will also be used to provide engineering support to the enhancement of spectrum software applications through the procurement of models and other capabilities, including ILS for software tools/utilities/applications that correct/mitigate operational EMI. MA104 - EMI (Software) Fixes are supported by OPNAV N95, OPNAV N96, OPNAV N97 and OPNAV N98. MA204 - EMI CONTROL INSTRUMENTATION: EMI Control Instrumentation will procure specialized test equipment used in the characterization and quantification of EMI problems aboard U.S. Navy platforms. In addition, instrumentation will be procured for use in identifying the sources of EMI and determining the extent of EMI so that effective corrective measures can be applied. The instrumentation procured will include automated and special EMI test equipment (e.g., for spectrum analysis, mapping field intensities, etc.). EMI Control Instrumentation can include both hardware and software products that will enhance or streamline data collection efforts, including the ability to provide remote access capability. MA204 - EMI CONTROL INSTRUMENTATION are supported by OPNAV N2N6.												

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment						P-1 Line Item Number / Title: 2970 / EMI Control Instrumentation				
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A			Other Related Program Elements: N/A			
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	EMI Control Instrumentation				- / 41.108	- / 4.188	- / 4.183	- / 4.209	- / -	- / 4.209
P-40	Total Gross/Weapon System Cost				- / 41.108	- / 4.188	- / 4.183	- / 4.209	- / 0.000	- / 4.209
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										

Justification:
 MA004 (EMI HDW Fixes) OPN Funds are used to procure and install EMI Fixes on deploying ships and submarines. The number of EMI Fixes procured (MA004 Hardware Fixes) are dependent on the number of ships/submarines in the fleet and when they deploy.

MA104 (EMI SFW Fixes) procures and installs SFW Fixes, i.e. the Afloat Electromagnetic Spectrum Operations Program (AESOP). AESOP is transitioning to a new program called Real-Time Spectrum Operations (RTSO). RTSO is currently in development, therefore the AESOP production aspects are being de-scoped (resulting in MA104 reductions starting in FY19).

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10								P-1 Line Item Number / Title: 2970 / EMI Control Instrumentation							Aggregated Items Title: EMI Control Instrumentation					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
1) MA004 EMI (HARDWARE) FIXES																				
1.1) MA004 EMI (HARDWARE) FIXES - N96	A		-	-	5.718	-	-	0.830	-	-	1.067	-	-	1.040	-	-	-	-	-	1.040
1.2) MA004 EMI (HARDWARE) FIXES - N95	A		-	-	3.973	-	-	0.574	-	-	0.734	-	-	0.748	-	-	-	-	-	0.748
1.3) MA004 EMI (HARDWARE) FIXES - N97	A		-	-	4.122	-	-	0.596	-	-	0.760	-	-	0.773	-	-	-	-	-	0.773
1.4) MA004 EMI (HARDWARE) FIXES N98	A		-	-	5.103	-	-	0.547	-	-	0.707	-	-	0.720	-	-	-	-	-	0.720
Subtotal: 1) MA004 EMI (HARDWARE) FIXES			-	-	18.916	-	-	2.547	-	-	3.268	-	-	3.281	-	-	-	-	-	3.281
2) MA104 EMI (SOFTWARE) FIXES																				
2.1) MA104 EMI (SOFTWARE) FIXES - N95	A		-	-	4.090	-	-	0.246	-	-	0.081	-	-	0.083	-	-	-	-	-	0.083
2.2) MA104 EMI (SOFTWARE) FIXES - N96	A		-	-	6.056	-	-	0.355	-	-	0.119	-	-	0.116	-	-	-	-	-	0.116
2.3) MA104 EMI (SOFTWARE) FIXES - N97	A		-	-	4.352	-	-	0.256	-	-	0.084	-	-	0.086	-	-	-	-	-	0.086
2.4) MA104 EMI (SOFTWARE) FIXES - N98	A		-	-	6.065	-	-	0.234	-	-	0.078	-	-	0.080	-	-	-	-	-	0.080
Subtotal: 2) MA104 EMI (SOFTWARE) FIXES			-	-	20.563	-	-	1.091	-	-	0.362	-	-	0.365	-	-	-	-	-	0.365
3) MA204 EMI CONTROL INSTRUMENTATION																				
3.1) MA204 EMI CONTROL INSTRUMENTATION - N2N6	A		-	-	1.629	-	-	0.550	-	-	0.553	-	-	0.563	-	-	-	-	-	0.563
Subtotal: 3) MA204 EMI CONTROL INSTRUMENTATION			-	-	1.629	-	-	0.550	-	-	0.553	-	-	0.563	-	-	-	-	-	0.563
Total			-	-	41.108	-	-	4.188	-	-	4.183	-	-	4.209	-	-	-	-	-	4.209
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment							P-1 Line Item Number / Title: 2980 / Items less than \$5 Million					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	506.344	116.111	140.092	168.436	0.000	168.436	167.338	155.362	151.093	154.091	570.820	2,129.687
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	506.344	116.111	140.092	168.436	0.000	168.436	167.338	155.362	151.093	154.091	570.820	2,129.687
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	506.344	116.111	140.092	168.436	0.000	168.436	167.338	155.362	151.093	154.091	570.820	2,129.687
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	0.627	0.438	0.214	-	0.214	0.157	-	-	-	-	1.436
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

[P40A / DC004 CALIBRATION STANDARDS]: These funds procure Calibration Standards equipment to execute a detailed, multi-year sustainment and modernization plan for intermediate, organizational and depot level maintenance activities. Calibration Standards equipment is employed to ensure the accuracy of test equipment used to install, align, and maintain all Navy weapons systems ashore and afloat. The Navy's inventory of Calibration Standards equipment is approaching obsolescence and requires modernization to avoid deterioration in accuracy and calibration of weapons systems. Many of the original Calibration Standards equipment is no longer in production, so replacement of the equipment must be purchased from newer model inventory, some of which have a greater unit cost. Failure to maintain accurate calibration standards will cause our weapons systems to perform below expectations. The impacts would range from premature mechanical failures due to incorrectly installed mechanical components, to radar and missile operational inaccuracies due to improperly set components. A defined, complex and multi-year modernization plan for Calibration Standards equipment is in place. The unit cost of the replacement Calibration Standards equipment to be procured, range from \$11K (general purpose power meter) to \$350K (vector network analyzer); whereas the unit cost of older standards procured in prior years ranged from \$18K to \$52K. This change in unit cost is attributable to the diversity and varying complexity of Calibration Standards equipment to be procured and their measurement requirements. Increased funding in FY19 is in response to aging, obsolete Calibration Standards equipment within Depot, Intermediate and Organizational maintenance support activities which will stabilize the infrastructure in an effort to maintain a healthy support posture.

[P40A / DC019 RADAR RESTORATION AN/SPS-67 ANTENNA]: Funding in this line establishes an antenna manufacturing capability at Naval Surface Warfare Center (NSWC) Crane needed to provide additional rotatable pool antennas and associated engineering changes for the AN/SPS-67(V)3 to support the restoration of installed fleet antennas. The current number of available antennas is insufficient to support the fleet population. This has led to antennas operating in the field beyond their periodicity, resulting in decreased detection and tracking capability.

[P40A / DC020 DUAL BAND RADAR (DBR)]: Funding is required to establish the In-Service Engineering Agent (ISEA), Original Equipment Manufacturer (OEM) production services and support for Configuration Management. Funding also implements the DBR Life Cycle Sustainment Plan (LCSP) and infrastructure, Diminishing Manufacturing Sources and Material Shortages (DMSMS) Plan, associated hardware and software obsolescence mod kits, procurement of Engineering Change Proposals (ECPs), associated logistics products and on-board allowance requirements to enable system operation. Production Support is also required to assist with DBR Combat System Integration and Technical Documentation. Additional limitations will be identified during CVN78/DDG1000 Shipboard Activation, Integration and At-Sea Testing. Additionally, as a result of DBR land based testing at the Wallops Island Engineering Test Center (WIETC) limitations were identified in the Dual Band Radar (DBR) performance that directly impacted CVN 78 and DDG 1000 class readiness. These limitations require ECPs to correct the performance areas of the radar for Air Traffic Control and Integrated Combat Systems (e.g., False Clutter Tracks, Short Range Tracking, General Tracking, Slow Air Tracking, Waveform Scheduling, and code stability). The Prime Contractor and Government Technical Team have documented critical radar issues that require correction via ECPs in FY17-FY24. Funding for these ECP efforts increases starting in FY18 due to the engineering and technical complexity of the change proposals needed to satisfy combat system qualification requirements. DBR was reviewed by an Independent Review Team (IRT) chartered by the Under Secretary of Defense (Acquisition, Technology and Logistics) to assess specific CVN 78 systems. The IRT

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment		P-1 Line Item Number / Title: 2980 / Items less than \$5 Million
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
recommended that the Navy establish infrastructure and mechanisms to accelerate the acquisition of spares for DBR and develop a repair capability for DBR parts from the Fleet. DBR Special Test Equipment and Infrastructure funding from FY19 - FY24 provides for (1) test equipment and support for a repair depot for assemblies and subassemblies for DBR components, including Common Array Power System (CAPS), and Common Array Cooling System (CACs); (2) resolution of system obsolescence that will degrade system Ao; and, (3) establishment of product support engineering infrastructure. The additional DBR sustainment and infrastructure efforts will facilitate the transition of material sparing support of DBR to NAVSUP.		
[P40A / DC021 AN/SPS-67(V)5 MARITIME RADAR PROCESSOR (MRP)]: The Maritime Radar Processor (MRP) was developed to improve the detection of small boats/targets by USN ships. Funding in this line will be used to integrate and field small boat detection software improvements to AN/SPS-67(V)5 Surface Search Radar.		
[P40A / DC012 AN/SPS-74(V) PERISCOPE DETECTION RADAR]: AN/SPS-74(V) PERISCOPE DETECTION RADAR (PDR): The CVN Periscope Detection Radar (PDR), AN/SPS-74(V) is a radar that provides automatic detection and discrimination of submarine periscopes using advanced algorithms enabling discrimination of periscopes from surface contacts, buoys, small boats, floating mines, etc. Four Advanced Development Models(ADMs) have been installed and are operating on CVN class ships. The AN/SPS-74 program was cancelled in FY12. FY14 and FY19 will be used for Engineering Change Proposals (ECPs) to address obsolescence issues, sustainment, and continued operation of installed AN/SPS-74 ADMs as well as eventual de-installation. Funding for SPS-74 ends in FY19.		
[P40A / DC022 RADAR RESTORATION MATERIAL]: Radar Restoration funding in this line procures components to support radar restoration (Arrays and miscellaneous Antenna Sub-Assemblies) and Engineering Change Proposals (ECPs) to address obsolescence and improve supportability.		
[P3A / DC001 - SPS-73 RADAR]: The AN/SPS-73(V) Radar provides navigation and general surface search radar functionality on all U.S. Navy ships. The AN/SPS-73(V)12 is the Automatic Radar Plotting Aid (ARPA) Navigation Radar for the U.S. Navy. Funding will be utilized for engineering changes which will improve surface combatant's ability to engage fast attack craft/fast in shore attack craft (FAC/FIAC) tracking and periscope detection and discrimination, as well as address cybersecurity shortfalls and Commercial-Off-The-Shelf (COTS) obsolescence of the legacy AN/SPS-73 systems. The AN/SPS-73 Next Generation Surface Search Radar (NGSSR) will update the current AN/SPS-73(V)12 and replace the AN/SPS-67(V) and all commercially provided Navigation Radars fielded in the fleet. NGSSR production has been accelerated as a result of the October 2017 Commander Fleet Forces Comprehensive Review which was directly related to the McCain and Fitzgerald collisions. Increased NGSSR funding in FY18 will accelerate the program schedule and procurement of qualification units. NRE is required in FY18 thru FY20 to mitigate FAC/FIAC and cybersecurity shortfalls, and to capitalize on periscope detection and discrimination capabilities. Funding will also complete software development, procure and test NGSSR qualification units, finalize NGSSR hardware configuration and conduct combat system integration and testing.		
[P3A - 2 / DC009 - AN/SPS-48G RADAR OBSOLESCENCE AND AVAILABILITY RECOVERY (ROAR)]: The AN/SPS-48G 3-D Air Surveillance Radar is a follow-on to the existing AN/SPS-48E onboard Aircraft Carriers and large-deck Amphibious ships. AN/SPS-48G was initiated in response to Fleet complaints regarding AN/SPS-48E reliability and supportability. Upgrade of the AN/SPS-48E with the AN/SPS-48G remains a high Fleet priority as it will reduce Operation and Support (O&S) costs and improve Operational Availability. Both factors are cited by the Fleet as unsatisfactory for the AN/SPS-48E. The goal is to replace the AN/SPS-48E as rapidly as possible so the Fleet can realize this cost avoidance. Current efforts include the manufacturing of the AN/SPS-48G upgrade kits with associated production support as well as modifications to the AN/SPS-48G brought about by initial Fleet introduction and Fleet operations. Production lead time is 24 months for the initial unit with subsequent units delivered at two month intervals after initial delivery. Equipment delivery for installation is required thirty days prior to FMP availability start in accordance with Navy Modernization Process Management. Engineering Change Order funding is required to address Fleet recommended modifications/requirements and Information Assurance, Obsolescence, and Diminishing Manufacturing Sources (DMS) issues. Engineering Change Proposal funding is required to initiate incorporation of High Diver Detection and Tracking functionality. This capability was designed and incorporated into the AN/SPS-48E after design of the AN/SPS-48G had been initiated. This change needs to be translated into the different hardware and software architectures of the AN/SPS-48G. FY18 was the last year of AN/SPS-48G procurements.		
[P3A - 3 / DC015 - TACTICAL ENVIRONMENTAL PROCESSOR (TEP)]: Provides real-time valunumeric wind profiles, convective weather detection/display, and radar refractivity assessments from AN/SPY-1 radar returns. TEP will be an adjunct processor and display, tapping radar data from weather and refractivity data, with users able to access information through Secret Internet Protocol Router (SIPR). Funding for TEP ends in FY19. FY19 funding is being used to remove equipment and closeout program.		
[P3A - 4 / DC018 - AN/SPY-1 RM&A IMPROVEMENTS]: DC018 AN/SPY-1 RM&A IMPROVEMENTS - These Reliability, Maintainability, and Availability (RM&A) improvements are intended to reduce cascading failures, mitigate obsolescence issues, and improve reliability in support of Anti-Air Warfare (AAW) and Ballistic Missile Defense (BMD) missions while still providing AN/SPY-1 Radar Total Ownership Cost (TOC) reductions. The improvements include, but are not limited to, installation for Sidewall Capacitor Circuit Protection and 10kW Traveling Wave Tube (TWT) Monitoring Circuits Ordnance Alterations (ORDALTS) for		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment		P-1 Line Item Number / Title: 2980 / Items less than \$5 Million
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
AN/SPY-1; B (V), D, D (V), CG and DDGs. Solid State Switch Assemblies (SSSA) will replace legacy switch tube modulator deck via an ORDALT. Multi-Mission Signal Processor (MMSP) is the signal processor for the AN/SPY-1 radar. MMSP Refresh (MMSP-R) cabinets will be procured to provide production representative configurations for land-based testing and training to support AEGIS ships at AEGIS Training and Readiness Center (ATRC) and Surface Combat System Center (SCSC) Wallops Island. Procurement and installation of SSSA for DDG Ships, Shore Sites and Spares are aligned with the DDG Modernization availability periods.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy			Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment			P-1 Line Item Number / Title: 2980 / Items less than \$5 Million		
ID Code (A=Service Ready, B=Not Service Ready): A		Program Elements for Code B Items: N/A		Other Related Program Elements: N/A	
Line Item MDAP/MAIS Code: N/A					

Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Items less than \$5 Million	P-5a			- / 96.450	- / 24.090	- / 50.597	- / 35.182	- / -	- / 35.182
P-3a	1 / DC001 - SPS-73 RADAR (TBD)				- / 59.168	- / 19.416	- / 52.172	- / 100.677	- / 0.000	- / 100.677
P-3a	2 / DC009 - AN/SPS-48G RADAR OBSOLESCENCE AND AVAILABILITY RECOVERY (ROAR) (TBD)				- / 290.101	- / 38.943	- / 5.648	- / 9.076	- / 0.000	- / 9.076
P-3a	3 / DC015 - TACTICAL ENVIRONMENTAL PROCESSOR (TEP) (TBD)				- / 7.295	- / 1.311	- / 1.342	- / 0.000	- / 0.000	- / 0.000
P-3a	4 / DC018 - AN/SPY-1 RM&A IMPROVEMENTS (TBD)				- / 53.330	- / 32.351	- / 30.333	- / 23.501	- / 0.000	- / 23.501
P-40	Total Gross/Weapon System Cost				- / 506.344	- / 116.111	- / 140.092	- / 168.436	- / 0.000	- / 168.436

Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Items less than \$5 Million	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / DC001 - SPS-73 RADAR (TBD)				- / 91.976	- / 102.144	- / 102.582	- / 61.075	- / 22.842	- / 612.052
P-3a	2 / DC009 - AN/SPS-48G RADAR OBSOLESCENCE AND AVAILABILITY RECOVERY (ROAR) (TBD)				- / 7.355	- / 0.950	- / 1.750	- / 0.950	- / 4.675	- / 359.448
P-3a	3 / DC015 - TACTICAL ENVIRONMENTAL PROCESSOR (TEP) (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 9.948
P-3a	4 / DC018 - AN/SPY-1 RM&A IMPROVEMENTS (TBD)				- / 30.585	- / 15.198	- / 15.412	- / 56.594	- / 310.186	- / 567.490
P-40	Total Gross/Weapon System Cost				- / 167.338	- / 155.362	- / 151.093	- / 154.091	- / 570.820	- / 2,129.687

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10							P-1 Line Item Number / Title: 2980 / Items less than \$5 Million								Aggregated Items Title: Items less than \$5 Million					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
1) DC001 SPS-73 RADAR																				
1.1) TECH REFRESH	A		209,565.89	129	27.034	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) DC001 SPS-73 RADAR			-	-	27.034	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2) DC004 CALIBRATION STANDARDS																				
2.1) CALIBRATION STANDARDS ^{(1)(f)}	A		32,811.15	789	25.888	24,264.96	117	2.839	24,133.82	411	9.919	24,757.49	367	9.086	-	-	-	24,757.49	367	9.086
Subtotal: 2) DC004 CALIBRATION STANDARDS			-	-	25.888	-	-	2.839	-	-	9.919	-	-	9.086	-	-	-	-	-	9.086
3) DC019 RADAR RESTORATION AN/SPS-67 ANTENNA																				
3.1) HARDWARE	A		493,000.00	5	2.465	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.2) OTHER	A		-	-	1.716	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 3) DC019 RADAR RESTORATION AN/SPS-67 ANTENNA			-	-	4.181	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4) DC020 DUAL BAND RADAR (DBR)																				
4.1) DBR PRODUCTION SUPPORT	A		-	-	6.896	-	-	2.587	-	-	2.816	-	-	2.916	-	-	-	-	-	2.916
4.2) DBR ENGINEERING CHANGE PROPOSALS (ECPS) ⁽²⁾	A		-	-	20.661	-	-	13.768	-	-	11.382	-	-	13.675	-	-	-	-	-	13.675
4.3) DBR SPECIAL TEST EQUIPMENT AND INFRASTRUCTURE ⁽³⁾	A		-	-	-	-	-	-	-	-	21.613	-	-	5.307	-	-	-	-	-	5.307
Subtotal: 4) DC020 DUAL BAND RADAR (DBR)			-	-	27.557	-	-	16.355	-	-	35.811	-	-	21.898	-	-	-	-	-	21.898
5) DC021 AN/SPS-67(V)5 MARITIME RADAR PROCESSOR (MRP)																				
5.1) AN/SPS-67(V)5 MARITIME RADAR PROCESSOR	A		-	-	2.922	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 5) DC021 AN/SPS-67(V)5 MARITIME RADAR PROCESSOR (MRP)			-	-	2.922	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6) DC012 AN/SPS-74(V) PERISCOPE DETECTION RADAR																				
6.1) PRODUCTION SUPPORT ⁽⁴⁾	A		-	-	2.998	-	-	0.696	-	-	0.674	-	-	-	-	-	-	-	-	-
Subtotal: 6) DC012 AN/SPS-74(V) PERISCOPE DETECTION RADAR			-	-	2.998	-	-	0.696	-	-	0.674	-	-	-	-	-	-	-	-	-
7) RED FALCON (OCO)																				

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10						P-1 Line Item Number / Title: 2980 / Items less than \$5 Million									Aggregated Items Title: Items less than \$5 Million				

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
7.1) RED FALCON (OCO)	A		-	-	5.870	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 7) RED FALCON (OCO)			-	-	5.870	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8) DC022 RADAR RESTORATION MATERIAL ⁽⁵⁾																				
8.1) 48 ARRAYS ^(†)	A		-	-	-	9,827.78	360	3.538	10,011.11	360	3.604	10,191.67	360	3.669	-	-	-	10,191.67	360	3.669
8.2) ANTENNA SUB-ASSEMBLIES	A		-	-	-	-	-	0.242	-	-	0.246	-	-	0.252	-	-	-	-	-	0.252
8.3) ENGINEERING CHANGE PROPOSALS (ECPS)	A		-	-	-	-	-	0.420	-	-	0.343	-	-	0.277	-	-	-	-	-	0.277
Subtotal: 8) DC022 RADAR RESTORATION MATERIAL			-	-	0.000	-	-	4.200	-	-	4.193	-	-	4.198	-	-	-	-	-	4.198
Total			-	-	96.450	-	-	24.090	-	-	50.597	-	-	35.182	-	-	-	-	-	35.182

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

(†) indicates the presence of a P-5a

Footnotes:

- (1) Calibration Standards equipment unit costs and quantities vary due to the diversity and varying complexity of Calibration Standards equipment being procured from year to year; the requested funding addresses calibration and maintenance operational requirements across shipboard/shore-based activities and programs.
- (2) During land based and at-sea testing, limitations were identified in the Dual Band Radar (DBR) performance that directly impacted CVN 78 and DDG 1000 class readiness. These limitations are documented in System Trouble Reports (STRs) and these STRs require Engineering Change Proposals (ECPs) to resolve the issues identified (e.g. General Tracking STRs and Air Traffic Control STRs). The Prime Contractor and Government Technical Team have documented critical radar issues that currently require correction and predicted the new discovery STRs through FY19-FY24. Funding for these ECP efforts increases starting in FY18 due to the engineering and technical complexity of the change proposals needed to satisfy combat system qualification requirements. The increased ECP funding in FY20 is to support CVN 78 Combat System Ship Qualification Testing (CSSQT), DDG 1000 and DDG 1001 Combat System activation testing, as well as ECPs identified during DBR Self Defense Test Ship (SDTS) events.
- (3) DBR Special Test Equipment and Infrastructure funding from FY19-FY24 provides for: (1) test equipment and support for a repair depot for assemblies and subassemblies for DBR components, including Common Array Power System (CAPS) and Common Array Cooling System (CACS); (2) resolution of system obsolescence issues that will prevent a degradation of system Ao; and, (3) establishment of product support engineering infrastructure. The additional Dual Band Radar (DBR) sustainment and infrastructure efforts will facilitate the transition of material sparing support of DBR to NAVSUP. The Navy will initially procure critical special test equipment and infrastructure equipment in FY19 needed to support a repair depot for assemblies and subassemblies for DBR components, including radiation control system, Common Array Power System (CAPS), and Common Array Cooling System (CACS) equipment. FY20-FY24 funding supports DBR special test equipment capabilities and depot repair capacity needed for NAVSUP sparing. (3) DBR ECP funding in FY18 increased due to SPY-1 to DBR funds realignment for software fixes. (4) FY19 funding is decreased due to a program reduction.
- (4) PDR funding for SPS-74 ends in FY19.
- (5) Radar Restoration funding in this line procures components to support radar restoration (Arrays and miscellaneous Antenna Sub-Assemblies) and Engineering Change Proposals (ECPs) to address obsolescence and improve supportability.

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10				P-1 Line Item Number / Title: 2980 / Items less than \$5 Million					Aggregated Items: Items less than \$5 Million			
Item Number / Title [DODIC]	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
2) DC004 CALIBRATION STANDARDS												
2.1) CALIBRATION STANDARDS (1)		2018	NSWC/CHINA LAKE / CHINA LAKE	WR	CHINA LAKE	Nov 2017	Mar 2018	117	24,264.96	Y		
2.1) CALIBRATION STANDARDS (1)		2019	NSWC/CHINA LAKE / CHINA LAKE	WR	CHINA LAKE	Nov 2018	Mar 2019	411	24,133.82	Y		
2.1) CALIBRATION STANDARDS (1)		2020	NSWC/CHINA LAKE / CHINA LAKE	WR	CHINA LAKE	Nov 2019	Mar 2020	367	24,757.49	Y		
8) DC022 RADAR RESTORATION MATERIAL												
8.1) 48 ARRAYS		2018	NSWC CRANE / CRANE, IN	Various	NSWC CRANE	Jul 2018	Apr 2019	360	9,827.78	Y		
8.1) 48 ARRAYS		2019	NSWC CRANE / CRANE, IN	Various	NSWC CRANE	Jan 2019	Nov 2019	360	10,011.11	Y		
8.1) 48 ARRAYS		2020	NSWC CRANE / CRANE, IN	Various	NSWC CRANE	Jan 2020	Nov 2020	360	10,191.67	Y		

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Exhibit P-3a, Individual Modification: PB 2020 Navy						Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10				P-1 Line Item Number / Title: 2980 / Items less than \$5 Million				Modification Number / Title: 1 / DC001 - SPS-73 RADAR			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	59.168	19.416	52.172	100.677	0.000	100.677	91.976	102.144	102.582	61.075	22.842	612.052
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	59.168	19.416	52.172	100.677	0.000	100.677	91.976	102.144	102.582	61.075	22.842	612.052
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	59.168	19.416	52.172	100.677	0.000	100.677	91.976	102.144	102.582	61.075	22.842	612.052
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The AN/SPS-73(V) Radar provides navigation and general surface search radar functionality on all U.S. Navy ships. The AN/SPS-73(V)12 is the Automatic Radar Plotting Aid (ARPA) Navigation Radar for the U.S. Navy. Funding will be utilized for engineering changes which will improve surface combatant's ability to engage fast attack craft/fast in shore attack craft (FAC/FIAC) tracking and periscope detection and discrimination, as well as address cybersecurity shortfalls and Commercial-Off-The-Shelf (COTS) obsolescence of the legacy AN/SPS-73 systems. The AN/SPS-73 Next Generation Surface Search Radar (NGSSR) will update the current AN/SPS-73(V)12 and replace the AN/SPS-67(V) and all commercially provided Navigation Radars fielded in the fleet. NGSSR production has been accelerated as a result of the October 2017 Commander Fleet Forces Comprehensive Review which was directly related to the McCain and Fitzgerald collisions. Increased NGSSR funding in FY18 will accelerate the program schedule and procurement of qualification units. NRE is required in FY18 thru FY20 to mitigate FAC/FIAC and cybersecurity shortfalls, and to capitalize on periscope detection and discrimination capabilities. Funding will also complete software development, procure and test NGSSR qualification units, finalize NGSSR hardware configuration and conduct combat system integration and testing.

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10				P-1 Line Item Number / Title: 2980 / Items less than \$5 Million				Modification Number / Title: 1 / DC001 - SPS-73 RADAR					
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: AN/SPS-73				Modification Type: TBD				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: DC001 - SPS-73 RADAR													
B Kits													
Recurring													
1.1.1) SPS-73 SYSTEMS - NonOrganic		79 / 18.452	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	79 / 18.452	
1.1.2) NEXT GENERATION NON RECURRING ENGINEERING - Organic ⁽⁶⁾		- / 7.333	- / 14.038	- / 9.419	- / 2.351	- / -	- / 2.351	- / -	- / -	- / -	- / -	- / 33.141	
1.1.3) NEXT GENERATION SURFACE SEARCH RADAR - NonOrganic ⁽⁷⁾		- / -	- / -	40 / 34.200	33 / 31.241	- / -	33 / 31.241	40 / 36.283	40 / 37.371	40 / 38.492	- / -	7 / 7.146	200 / 184.733
1.1.4) NEXT GENERATION SURFACE SEARCH RADAR SHORE SITES - NonOrganic		- / -	3 / 3.241	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 3.241	
Subtotal: Recurring		- / 25.785	- / 17.279	- / 43.619	- / 33.592	- / -	- / 33.592	- / 36.283	- / 37.371	- / 38.492	- / -	- / 7.146	- / 239.567
Subtotal: DC001 - SPS-73 RADAR		79 / 25.785	3 / 17.279	40 / 43.619	33 / 33.592	- / -	33 / 33.592	40 / 36.283	40 / 37.371	40 / 38.492	- / -	7 / 7.146	282 / 239.567
Subtotal: Procurement, All Modification Items		- / 25.785	- / 17.279	- / 43.619	- / 33.592	- / -	- / 33.592	- / 36.283	- / 37.371	- / 38.492	- / -	- / 7.146	- / 239.567
Support (All Modification Items)													
2.1) PRODUCTION SUPPORT ⁽⁸⁾		- / -	- / 1.673	- / 3.202	- / 2.687	- / -	- / 2.687	- / 3.397	- / 3.498	- / 3.604	- / 1.026	- / -	- / 19.087
2.2) MISCELLANEOUS ECP SUPPORT ⁽⁹⁾		- / 3.548	- / 0.464	- / 4.857	- / 5.172	- / -	- / 5.172	- / 6.683	- / 5.643	- / 5.376	- / 5.603	- / 6.000	- / 43.346
Subtotal: Support		- / 3.548	- / 2.137	- / 8.059	- / 7.859	- / -	- / 7.859	- / 10.080	- / 9.141	- / 8.980	- / 6.629	- / 6.000	- / 62.433
Installation													
Modification Item 1 of 1: DC001 - SPS-73 RADAR		- / 29.835	- / 0.000	- / 0.494	- / 59.226	- / 0.000	- / 59.226	- / 45.613	- / 55.632	- / 55.110	- / 54.446	- / 9.696	- / 310.052
Subtotal: Installation		- / 29.835	- / -	- / 0.494	- / 59.226	- / -	- / 59.226	- / 45.613	- / 55.632	- / 55.110	- / 54.446	- / 9.696	- / 310.052
Total													
Total Cost (Procurement + Support + Installation)		59.168	19.416	52.172	100.677	0.000	100.677	91.976	102.144	102.582	61.075	22.842	612.052

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Exhibit P-3a, Individual Modification: PB 2020 Navy											Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10											P-1 Line Item Number / Title: 2980 / Items less than \$5 Million											Modification Number / Title: 1 / DC001 - SPS-73 RADAR										
ID Code (A=Service Ready, B=Not Service Ready) :																MDAP/MAIS Code:																
Modification Item 1 of 1: DC001 - SPS-73 RADAR																																
Manufacturer Information																																
Manufacturer Name: AN/SPS-73 Next Generation Navigation Radar - TBD														Manufacturer Location: TBD																		
Administrative Leadtime <i>(in Months)</i> : 0														Production Leadtime <i>(in Months)</i> : 12																		
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024						
Contract Dates		Sep 2018				Dec 2018				Mar 2020				Mar 2021				Mar 2022				Mar 2023										
Delivery Dates		Sep 2019				Jul 2020				Mar 2021				Mar 2022				Mar 2023				Mar 2024										
Installation Information																																
Method of Implementation: [none specified]:: Installation Name: SPS-73 SYSTEMS																																
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total								
		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>								
Prior Years		79 / 29.835		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		79 / 29.835						
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
Total		79 / 29.835		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		79 / 29.835						
Installation Schedule																																
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot	
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
In	79	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	79	
Out	79	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	79	
Method of Implementation: [none specified]:: Installation Name: NEXT GENERATION SURFACE SEARCH RADAR																																
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total								
		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>								
Prior Years		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						

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Exhibit P-3a, Individual Modification: PB 2020 Navy																		Date: March 2019													
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10										P-1 Line Item Number / Title: 2980 / Items less than \$5 Million								Modification Number / Title: 1 / DC001 - SPS-73 RADAR													
ID Code (A=Service Ready, B=Not Service Ready) :														MDAP/MAIS Code:																	
Modification Item 1 of 1: DC001 - SPS-73 RADAR																															
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: NEXT GENERATION SURFACE SEARCH RADAR																															
Installation Cost		Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total																		
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																	
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2019		- / -	- / -	- / -	40 / 52.906	0 / 0.000	40 / 52.906	- / -	- / -	- / -	- / -	0 / 0.000	40 / 52.906																		
FY 2020		- / -	- / -	- / -	0 / 5.690	0 / 0.000	0 / 5.690	33 / 39.128	- / -	- / -	- / -	0 / 0.000	33 / 44.818																		
FY 2021		- / -	- / -	- / -	0 / 0.630	0 / 0.000	0 / 0.630	0 / 5.505	40 / 51.179	- / -	- / -	0 / 0.000	40 / 57.314																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.980	0 / 4.173	40 / 48.452	- / -	0 / 0.000	40 / 53.605																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.280	0 / 6.658	40 / 54.446	0 / 0.000	40 / 61.384																		
FY 2024		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	7 / 9.696	7 / 9.696																		
Total		- / -	- / -	- / -	40 / 59.226	0 / 0.000	40 / 59.226	33 / 45.613	40 / 55.632	40 / 55.110	40 / 54.446	7 / 9.696	200 / 279.723																		
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	-	-	-	-	-	-	-	-	-	-	-	20	20	-	-	13	20	-	5	15	20	-	5	15	20	-	5	15	20	7	200
Out	-	-	-	-	-	-	-	-	-	-	-	20	20	-	-	13	20	-	5	15	20	-	5	15	20	-	5	15	20	7	200
Method of Implementation: [none specified]:: Installation Name: NEXT GENERATION SURFACE SEARCH RADAR SHORE SITES																															
Installation Cost		Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total																		
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																	
Prior Years		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2018		- / -	- / -	3 / 0.494	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 0.494																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2024		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		- / -	- / -	3 / 0.494	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 0.494																		

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019																													
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2980 / Items less than \$5 Million	Modification Number / Title: 1 / DC001 - SPS-73 RADAR																													
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:																													
Modification Item 1 of 1: DC001 - SPS-73 RADAR																															
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: NEXT GENERATION SURFACE SEARCH RADAR SHORE SITES																															
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
Out	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3

Footnotes:

- (6) Non-Recurring Engineering (NRE) funding is required to accelerate updating the aging and obsolete SPS-73 to the Next Generation Surface Search Radar (NGSSR) configuration which will address Cyber and Electro-magnetic Warfare threats that did not exist at the time of the original SPS-73 design. NRE funds will be utilized for government efforts to finalize NGSSR specifications, including design/cost trade-offs to assess different features that could affect cost/schedule such as dual system installations, track fusion, tactical training, AEGIS and SSDS combat system interfaces, and cybersecurity. Increased NGSSR funding in FY18 will accelerate the program schedule and procurement of qualifications units. NRE is required in FY18 thru FY20 to mitigate FAC/FIAC and cybersecurity shortfalls, and to capitalize on periscope detection and discrimination capabilities. Funding will also complete software development, procure and test NGSSR qualification units, finalize NGSSR hardware configuration and conduct combat system integration and testing. Qualification testing includes navigation radar International Maritime Organization (IMO) and Safety Of Life At Sea (SOLAS) compliance, Periscope Detection and Discrimination (PDD) interface, Combat System Interface validation, Surface Search Radar validation, cybersecurity, shock, Electromagnetic interference (EMI) and environmental.
- (7) NGSSR production units will be procured as a result of the October 2017 Commander Fleet Forces Comprehensive Review; this priority requirement is directly related to the McCain and Fitzgerald collisions. Installation funding which was required in FY19 for the planning yards to let contracts for Advanced Planning (AP) and planning yard Design Services Allocation (DSA) efforts in advance of the forty FY20 system installations was reduced as the result of a program reduction to installation funding which resulted in an increase to DSA funding in FY20 to maintain requirements prior to installation. In addition, funding for system procurements were decreased in FY20 and the associated FY21 installs due to the funding reduction. Installation funding for AP and planning yard DSA is customarily required at least one year prior to the year of installation to support individual ship class drawing packages, ship checks and long lead material unique to the installation in order to maintain alignment with ship availability schedules. Prior year funding for AP and DSA efforts for installs occurring in FY20 is not required as the installations in that year will be occurring at the end of FY20.
- (8) Production Support funding is required for production of hardware and hardware components and is composed primarily of Warfare Center Activity support, Software Support Activity (SSA), Integrated Logistics Agent (ILA), Acquisition Engineering Agent (AEA), Technical Design Agent (TDA) and Professional Support Services (PSS). This funding also includes support for cybersecurity compliance and software certification.
- (9) Miscellaneous ECP support is required to address hardware and software obsolescence/availability issues which requires research and investigation by the ISEA to locate, test, and provide suitable substitutes to maintain Fleet Navigation Readiness and Safety of Life at Sea (SOLAS). It is also required for NGSSR integration and testing. Miscellaneous ECP funding will continue to be required for SPS-73 efforts throughout the outyears until sufficient quantities of NGSSR are fielded, reducing the burden of the legacy systems.

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2980 / Items less than \$5 Million	Modification Number / Title: 2 / DC009 - AN/SPS-48G RADAR OBSCOLESCENCE AND AVAILABILITY RECOVERY (ROAR)

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	290.101	38.943	5.648	9.076	0.000	9.076	7.355	0.950	1.750	0.950	4.675	359.448
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	290.101	38.943	5.648	9.076	0.000	9.076	7.355	0.950	1.750	0.950	4.675	359.448
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	290.101	38.943	5.648	9.076	0.000	9.076	7.355	0.950	1.750	0.950	4.675	359.448
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The AN/SPS-48G 3-D Air Surveillance Radar is a follow-on to the existing AN/SPS-48E onboard Aircraft Carriers and large-deck Amphibious ships. AN/SPS-48G was initiated in response to Fleet complaints regarding AN/SPS-48E reliability and supportability. Upgrade of the AN/SPS-48E with the AN/SPS-48G remains a high Fleet priority as it will reduce Operation and Support (O&S) costs and improve Operational Availability. Both factors are cited by the Fleet as unsatisfactory for the AN/SPS-48E. The goal is to replace the AN/SPS-48E as rapidly as possible so the Fleet can realize this cost avoidance. Current efforts include the manufacturing of the AN/SPS-48G upgrade kits with associated production support as well as modifications to the AN/SPS-48G brought about by initial Fleet introduction and Fleet operations. Production lead time is 24 months for the initial unit with subsequent units delivered at two month intervals after initial delivery. Equipment delivery for installation is required thirty days prior to FMP availability start in accordance with Navy Modernization Process Management. Engineering Change Order funding is required to address Fleet recommended modifications/requirements and Information Assurance, Obsolescence, and Diminishing Manufacturing Sources (DMS) issues. Engineering Change Proposal funding is required to initiate incorporation of High Diver Detection and Tracking functionality. This capability was designed and incorporated into the AN/SPS-48E after design of the AN/SPS-48G had been initiated. This change needs to be translated into the different hardware and software architectures of the AN/SPS-48G. FY18 was the last year of AN/SPS-48G procurements.

Installation funding for advanced planning (AP) and planning yard design services allocation (DSA) is required up to one year prior to the year of installation. DSA funds are used for Ship Installation Drawings (SIDs), Alteration Installation Team (AIT) contracting fees, and shipchecks. The FY17 \$4M reduction to installation has resulted in movement of LHA 6 to outside the FYDP and LPD 22 to FY21. LPD 20 was moved from FY21 to FY23 and LPD 18 was moved from FY22 to "To Complete" due to ships' schedules.

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10				P-1 Line Item Number / Title: 2980 / Items less than \$5 Million				Modification Number / Title: 2 / DC009 - AN/SPS-48G RADAR OBSOLESCENCE AND AVAILABILITY RECOVERY (ROAR)					
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: AN/SPS-48G				Modification Type: TBD				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: DC009 - AN/SPS-48G RADAR OBSOLESCENCE AND AVAILABILITY RECOVERY (ROAR)													
B Kits													
Recurring													
1.1.1) AN/SPS-48G HARDWARE - FMP - NonOrganic (10)	21 / 131.237	4 / 25.372	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	25 / 156.609	
1.1.2) EQUIPMENT NONRECURRING - Organic	- / 11.191	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 11.191	
1.1.3) ENGINEERING CHANGE PROPOSALS - Organic ⁽¹¹⁾	- / 18.971	- / 2.763	- / 0.461	- / 0.441	- / -	- / 0.441	- / 0.430	- / -	- / -	- / -	- / -	- / 23.066	
1.1.4) ENGINEERING CHANGE ORDERS - Organic	- / 54.723	- / 1.871	- / 0.579	- / 0.561	- / -	- / 0.561	- / 0.475	- / -	- / -	- / -	- / -	- / 58.209	
1.1.5) AN/SPS-48G HARDWARE - NON-FMP - NonOrganic	2 / 12.973	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 12.973	
Subtotal: Recurring	- / 229.095	- / 30.006	- / 1.040	- / 1.002	- / -	- / 1.002	- / 0.905	- / -	- / -	- / -	- / 0.000	- / 262.048	
Subtotal: DC009 - AN/SPS-48G RADAR OBSOLESCENCE AND AVAILABILITY RECOVERY (ROAR)	23 / 229.095	4 / 30.006	- / 1.040	- / 1.002	- / -	- / 1.002	- / 0.905	- / -	- / -	- / -	- / -	27 / 262.048	
Subtotal: Procurement, All Modification Items	- / 229.095	- / 30.006	- / 1.040	- / 1.002	- / -	- / 1.002	- / 0.905	- / -	- / -	- / -	- / 0.000	- / 262.048	
Support (All Modification Items)													
2.1) PRODUCTION SUPPORT ⁽¹²⁾	- / 23.966	- / 1.037	- / 0.384	- / 0.342	- / -	- / 0.342	- / -	- / -	- / -	- / -	- / -	- / 25.729	
Subtotal: Support	- / 23.966	- / 1.037	- / 0.384	- / 0.342	- / -	- / 0.342	- / -	- / -	- / -	- / -	- / 0.000	- / 25.729	
Installation													
Modification Item 1 of 1: DC009 - AN/SPS-48G RADAR OBSOLESCENCE AND AVAILABILITY RECOVERY (ROAR)	- / 37.040	- / 7.900	- / 4.224	- / 7.732	- / 0.000	- / 7.732	- / 6.450	- / 0.950	- / 1.750	- / 0.950	- / 4.675	- / 71.671	
Subtotal: Installation	- / 37.040	- / 7.900	- / 4.224	- / 7.732	- / -	- / 7.732	- / 6.450	- / 0.950	- / 1.750	- / 0.950	- / 4.675	- / 71.671	
Total													
Total Cost (Procurement + Support + Installation)	290.101	38.943	5.648	9.076	0.000	9.076	7.355	0.950	1.750	0.950	4.675	359.448	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10										P-1 Line Item Number / Title: 2980 / Items less than \$5 Million										Modification Number / Title: 2 / DC009 - AN/SPS-48G RADAR OBSOLESCENCE AND AVAILABILITY RECOVERY (ROAR)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: DC009 - AN/SPS-48G RADAR OBSOLESCENCE AND AVAILABILITY RECOVERY (ROAR)																															
Manufacturer Information																															
Manufacturer Name: Exelis															Manufacturer Location: VAN NUYS, CA																
Administrative Leadtime (in Months): 0															Production Leadtime (in Months): 24																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates		Mar 2018																													
Delivery Dates		Mar 2020																													
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: AN/SPS-48G HARDWARE - FMP																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		12 / 32.674		3 / 7.900		1 / 4.224		3 / 6.807		0 / 0.000		3 / 6.807		2 / 4.300		- / -		- / -		- / -		0 / 0.000		21 / 55.905							
FY 2018		- / -		- / -		- / -		0 / 0.925		0 / 0.000		0 / 0.925		1 / 2.150		0 / 0.950		1 / 1.750		0 / 0.950		2 / 4.675		4 / 11.400							
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		12 / 32.674		3 / 7.900		1 / 4.224		3 / 7.732		0 / 0.000		3 / 7.732		3 / 6.450		0 / 0.950		1 / 1.750		0 / 0.950		2 / 4.675		25 / 67.305							
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	12	1	-	2	-	-	-	-	1	-	-	-	3	-	-	1	2	-	-	-	-	-	-	-	1	-	-	-	-		
Out	11	-	-	-	2	-	-	-	2	-	-	-	1	-	-	-	3	-	-	1	2	-	-	-	-	-	-	-	-		

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2980 / Items less than \$5 Million	Modification Number / Title: 2 / DC009 - AN/SPS-48G RADAR OBSOLESCENCE AND AVAILABILITY RECOVERY (ROAR)

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:

Modification Item 1 of 1: DC009 - AN/SPS-48G RADAR OBSOLESCENCE AND AVAILABILITY RECOVERY (ROAR)

Installation Information

Method of Implementation: AIT:: Installation Name: AN/SPS-48G HARDWARE - NON-FMP

Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	2 / 4.366	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 4.366
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	2 / 4.366	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 4.366

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Out	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2

Footnotes:

(10) Installation funding for Advanced Planning (AP) and Planning Yard Design Services Allocation (DSA) is required up to one year prior to the year of installation. DSA funds are used for Ship Installation Drawings (SIDs), Alteration Installation Team (AIT) contracting fees, and shipchecks. Although on the P-3a it may appear that the installation unit cost has increased significantly from FY18 to FY19, this is misleading due to the combination of installation, AP, and DSA costs into one single figure. The installation unit cost is approximately \$1.5M per hull across the FYDP, with the difference being the AP and DSA costs associated with the next year's installations.

(11) Engineering Change Proposal funding is primarily to incorporate High Diver Detection and Tracking functionality. This capability was designed and incorporated into the AN/SPS-48E after design of the AN/SPS-48G had been initiated. This change now needs to be translated into the different hardware and software architectures of the AN/SPS-48G.

(12) Production Support provides for Government oversight of production, Government and Original Equipment Manufacturer (OEM) support of production related software and hardware problems, and engineering as well as Integrated Logistics Support (ILS) efforts in support of production and fielding.

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10					P-1 Line Item Number / Title: 2980 / Items less than \$5 Million					Modification Number / Title: 3 / DC015 - TACTICAL ENVIRONMENTAL PROCESSOR (TEP)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	7.295	1.311	1.342	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	9.948
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	7.295	1.311	1.342	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	9.948
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	7.295	1.311	1.342	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	9.948
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Provides real-time valunumeric wind profiles, convective weather detection/display, and radar refractivity assessments from AN/SPY-1 radar returns. TEP will be an adjunct processor and display, tapping radar data from weather and refractivity data, with users able to access information through Secret Internet Protocol Router (SIPR). Funding for TEP ends in FY19. FY19 funding is being used to remove equipment and closeout program.												

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10					P-1 Line Item Number / Title: 2980 / Items less than \$5 Million					Modification Number / Title: 3 / DC015 - TACTICAL ENVIRONMENTAL PROCESSOR (TEP)			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: TACTICAL ENVIRONMENTAL PROCESSOR (TEP)				Modification Type: TBD				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: DC015 - TACTICAL ENVIRONMENTAL PROCESSOR (TEP)													
B Kits													
Recurring													
1.1.1) DDG HARDWARE - FMP - NonOrganic ⁽¹³⁾	6 / 1.800	2 / 0.556	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	8 / 2.356	
1.1.2) DDG COTS REFRESH - Organic	- / 0.075	- / 0.100	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.175	
1.1.3) TEP SHORE SITES HARDWARE - NonOrganic	3 / 0.499	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 0.499	
Subtotal: Recurring	- / 2.374	- / 0.656	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 3.030	
Subtotal: DC015 - TACTICAL ENVIRONMENTAL PROCESSOR (TEP)	9 / 2.374	2 / 0.656	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	11 / 3.030	
Subtotal: Procurement, All Modification Items	- / 2.374	- / 0.656	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 3.030	
Support (All Modification Items)													
2.1) PRODUCTION SUPPORT	- / 4.300	- / 0.483	- / 1.042	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 5.825	
Subtotal: Support	- / 4.300	- / 0.483	- / 1.042	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 5.825	
Installation													
Modification Item 1 of 1: DC015 - TACTICAL ENVIRONMENTAL PROCESSOR (TEP)	- / 0.621	- / 0.172	- / 0.300	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 1.093	
Subtotal: Installation	- / 0.621	- / 0.172	- / 0.300	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 1.093	
Total													
Total Cost (Procurement + Support + Installation)	7.295	1.311	1.342	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	9.948	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10					P-1 Line Item Number / Title: 2980 / Items less than \$5 Million					Modification Number / Title: 3 / DC015 - TACTICAL ENVIRONMENTAL PROCESSOR (TEP)																					
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:																					
Modification Item 1 of 1: DC015 - TACTICAL ENVIRONMENTAL PROCESSOR (TEP)																															
Manufacturer Information																															
Manufacturer Name: BASIC COMMERCE AND INDUSTRIES, INC										Manufacturer Location: MOORESTOWN, NJ																					
Administrative Leadtime (in Months): 0										Production Leadtime (in Months): 11																					
Dates		FY 2018		FY 2019		FY 2020		FY 2021		FY 2022		FY 2023		FY 2024																	
Contract Dates		Apr 2018																													
Delivery Dates		Mar 2019																													
Installation Information																															
Method of Implementation: AIT:: Installation Name: DDG HARDWARE - FMP																															
Installation Cost		Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total																		
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																		
Prior Years		4 / 0.476	2 / 0.156	0 / 0.200	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	6 / 0.832																		
FY 2018		- / -	0 / 0.016	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	- / 0.016																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2024		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		4 / 0.476	2 / 0.172	0 / 0.200	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	6 / 0.848																		
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	4	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
Out	3	-	-	-	1	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2980 / Items less than \$5 Million	Modification Number / Title: 3 / DC015 - TACTICAL ENVIRONMENTAL PROCESSOR (TEP)

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:

Modification Item 1 of 1: DC015 - TACTICAL ENVIRONMENTAL PROCESSOR (TEP)

Installation Information

Method of Implementation: [none specified]:: Installation Name: TEP SHORE SITES HARDWARE

Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	3 / 0.145	- / -	0 / 0.100	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 0.245
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	3 / 0.145	- / -	0 / 0.100	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 0.245

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
Out	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3

Footnotes:

(13) FY2020-FY2024 funding zero'd due to higher priority requirement for resources. Directed to terminate program and remove DDG equipment. Funding reallocated to execute program closeout and equipment removal.

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10					P-1 Line Item Number / Title: 2980 / Items less than \$5 Million					Modification Number / Title: 4 / DC018 - AN/SPY-1 RM&A IMPROVEMENTS		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	53.330	32.351	30.333	23.501	0.000	23.501	30.585	15.198	15.412	56.594	310.186	567.490
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	53.330	32.351	30.333	23.501	0.000	23.501	30.585	15.198	15.412	56.594	310.186	567.490
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	53.330	32.351	30.333	23.501	0.000	23.501	30.585	15.198	15.412	56.594	310.186	567.490
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: DC018 AN/SPY-1 RM&A IMPROVEMENTS - These Reliability, Maintainability, and Availability (RM&A) improvements are intended to reduce cascading failures, mitigate obsolescence issues, and improve reliability in support of Anti-Air Warfare (AAW) and Ballistic Missile Defense (BMD) missions while still providing AN/SPY-1 Radar Total Ownership Cost (TOC) reductions. The improvements include, but are not limited to, installation for Sidewall Capacitor Circuit Protection and 10kW Traveling Wave Tube (TWT) Monitoring Circuits Ordnance Alterations (ORDALTS) for AN/SPY-1; B (V), D, D (V), CG and DDGs. Solid State Switch Assemblies (SSSA) will replace legacy switch tube modulator deck via an ORDALT. Multi-Mission Signal Processor (MMSP) is the signal processor for the AN/SPY-1 radar. MMSP Refresh (MMSP-R) cabinets will be procured to provide production representative configurations for land-based testing and training to support AEGIS ships at AEGIS Training and Readiness Center (ATRC) and Surface Combat System Center (SCSC) Wallops Island. Procurement and installation of SSSA for DDG Ships, Shore Sites and Spares are aligned with the DDG Modernization availability periods.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10				P-1 Line Item Number / Title: 2980 / Items less than \$5 Million				Modification Number / Title: 4 / DC018 - AN/SPY-1 RM&A IMPROVEMENTS					
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: AN/SPY-1 RM&A IMPROVEMENTS				Modification Type: TBD				Related RDT&E PEs: 0604501N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: DC018 - AN/SPY-1 RM&A IMPROVEMENTS													
B Kits													
Recurring													
1.1.1) SIDEWALL AND 10KW TWT DDG HARDWARE - NonOrganic ⁽¹⁴⁾	54 / 6.736	8 / 1.212	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	62 / 7.948	
1.1.2) PACK UP KITS - Organic	3 / 4.125	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 4.125	
1.1.3) SIDEWALL AND 10KW TWT CG HARDWARE - NonOrganic	16 / 3.742	- / -	2 / 0.688	4 / 0.713	- / -	4 / 0.713	- / -	2 / 0.186	- / -	- / -	- / -	24 / 5.329	
1.1.4) SIDEWALL AND 10KW TWT SHORE SITE HARDWARE - NonOrganic	8 / 1.172	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	8 / 1.172	
1.1.5) SOLID STATE SWITCH ASSEMBLY DDG HARDWARE - NonOrganic	3 / 15.644	3 / 13.889	2 / 8.867	3 / 13.301	- / -	3 / 13.301	5 / 22.283	2 / 9.307	1 / 4.687	10 / 47.114	46 / 213.893	75 / 348.985	
1.1.6) SOLID STATE SWITCH ASSEMBLY SHORE SITE HARDWARE - NonOrganic	2 / 8.216	- / -	3 / 13.500	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 21.716	
1.1.7) SOLID STATE SWITCH ASSEMBLY SPARES - Organic ⁽¹⁵⁾	9 / 4.621	3 / 1.631	- / -	6 / 3.453	- / -	6 / 3.453	2 / 1.195	2 / 1.195	6 / 3.585	10 / 5.975	25 / 17.533	63 / 39.188	
1.1.8) SOLID STATE SWITCH ASSEMBLY FINAL POWER AMPLIFIER ENV/QUAL - Organic	- / -	1 / 3.874	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 3.874	
1.1.9) MMSP-R SHORE SITE HARDWARE - NonOrganic ⁽¹⁶⁾	- / -	2 / 9.223	- / 0.005	- / 0.005	- / -	- / 0.005	- / -	- / -	- / -	- / -	- / -	2 / 9.233	
Subtotal: Recurring	- / 44.256	- / 29.829	- / 23.060	- / 17.472	- / -	- / 17.472	- / 23.478	- / 10.688	- / 8.272	- / 53.089	- / 231.426	- / 441.570	
Subtotal: DC018 - AN/SPY-1 RM&A IMPROVEMENTS	95 / 44.256	17 / 29.829	7 / 23.060	13 / 17.472	- / -	13 / 17.472	7 / 23.478	6 / 10.688	7 / 8.272	20 / 53.089	71 / 231.426	243 / 441.570	
Subtotal: Procurement, All Modification Items	- / 44.256	- / 29.829	- / 23.060	- / 17.472	- / -	- / 17.472	- / 23.478	- / 10.688	- / 8.272	- / 53.089	- / 231.426	- / 441.570	
Support (All Modification Items)													
2.1) PRODUCTION SUPPORT ⁽¹⁷⁾	- / 5.245	- / 1.033	- / 1.150	- / 0.942	- / -	- / 0.942	- / 0.892	- / 1.123	- / 1.026	- / 1.002	- / 8.509	- / 20.922	
Subtotal: Support	- / 5.245	- / 1.033	- / 1.150	- / 0.942	- / -	- / 0.942	- / 0.892	- / 1.123	- / 1.026	- / 1.002	- / 8.509	- / 20.922	
Installation													
Modification Item 1 of 1: DC018 - AN/SPY-1 RM&A IMPROVEMENTS	- / 3.829	- / 1.489	- / 6.123	- / 5.087	- / 0.000	- / 5.087	- / 6.215	- / 3.387	- / 6.114	- / 2.503	- / 70.251	- / 104.998	
Subtotal: Installation	- / 3.829	- / 1.489	- / 6.123	- / 5.087	- / -	- / 5.087	- / 6.215	- / 3.387	- / 6.114	- / 2.503	- / 70.251	- / 104.998	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Navy									Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10				P-1 Line Item Number / Title: 2980 / Items less than \$5 Million					Modification Number / Title: 4 / DC018 - AN/SPY-1 RM&A IMPROVEMENTS				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: AN/SPY-1 RM&A IMPROVEMENTS				Modification Type: TBD					Related RDT&E PEs: 0604501N				
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Total													
Total Cost (Procurement + Support + Installation)	53.330	32.351	30.333	23.501	0.000	23.501	30.585	15.198	15.412	56.594	310.186	567.490	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Navy							Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10				P-1 Line Item Number / Title: 2980 / Items less than \$5 Million				Modification Number / Title: 4 / DC018 - AN/SPY-1 RM&A IMPROVEMENTS				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Modification Item 1 of 1: DC018 - AN/SPY-1 RM&A IMPROVEMENTS												
Manufacturer Information												
Manufacturer Name: SIDEWALL AND 10KW TWT ORDALTs - RAYTHEON							Manufacturer Location: Chesapeake, VA					
Administrative Leadtime (in Months): 0							Production Leadtime (in Months): 12					
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates	Dec 2018	Mar 2019	Mar 2020		Mar 2022							
Delivery Dates	Dec 2019	Mar 2020	Mar 2021		Mar 2034							
Manufacturer Name: SOLID STATE SWITCH ASSEMBLY (SSSA) - RAYTHEON							Manufacturer Location: Andover, MA					
Administrative Leadtime (in Months): 0							Production Leadtime (in Months): 18					
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates	Mar 2018	Mar 2019	Mar 2020	Mar 2021	Mar 2022	Mar 2023	Mar 2024					
Delivery Dates	Sep 2019	Sep 2020	Sep 2021	Sep 2022	Sep 2023	Sep 2024	Sep 2025					
Manufacturer Name: MMSP-R DIGITAL CABINETS - LOCKHEED MARTIN							Manufacturer Location: Moorestown, NJ					
Administrative Leadtime (in Months): 0							Production Leadtime (in Months): 12					
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates	Sep 2018											
Delivery Dates	Sep 2019											
Installation Information												
Method of Implementation: AIT:: Installation Name: SIDEWALL AND 10KW TWT DDG HARDWARE												
Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	43 / 2.726	3 / 0.369	8 / 0.792	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	54 / 3.887
FY 2018	- / -	- / -	4 / 0.385	4 / 0.482	0 / 0.000	4 / 0.482	- / -	- / -	- / -	- / -	0 / 0.000	8 / 0.867
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	43 / 2.726	3 / 0.369	12 / 1.177	4 / 0.482	0 / 0.000	4 / 0.482	- / -	- / -	- / -	- / -	0 / 0.000	62 / 4.754

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Navy																								Date: March 2019								
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10												P-1 Line Item Number / Title: 2980 / Items less than \$5 Million												Modification Number / Title: 4 / DC018 - AN/SPY-1 RM&A IMPROVEMENTS								
ID Code (A=Service Ready, B=Not Service Ready) :																		MDAP/MAIS Code:														
Modification Item 1 of 1: DC018 - AN/SPY-1 RM&A IMPROVEMENTS																																
Installation Information																																
Method of Implementation: AIT:: Installation Name: SIDEWALL AND 10KW TWT DDG HARDWARE																																
Installation Schedule																																
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot	
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
In	43	-	-	-	3	-	-	8	-	4	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	62
Out	43	-	-	-	3	-	-	-	8	-	4	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	62
Method of Implementation: AIT:: Installation Name: SIDEWALL AND 10KW TWT CG HARDWARE																																
Installation Cost		Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total																			
		<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>																		
Prior Years		10 / 1.029	- / -	6 / 0.462	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	16 / 1.491																			
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
FY 2019		- / -	- / -	- / -	2 / 0.157	0 / 0.000	2 / 0.157	- / -	- / -	- / -	- / -	0 / 0.000	2 / 0.157																			
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	4 / 0.323	- / -	- / -	- / -	0 / 0.000	4 / 0.323																			
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.302	- / -	0 / 0.000	2 / 0.302																			
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
FY 2024		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
Total		10 / 1.029	- / -	6 / 0.462	2 / 0.157	0 / 0.000	2 / 0.157	4 / 0.323	- / -	2 / 0.302	- / -	0 / 0.000	24 / 2.273																			
Installation Schedule																																
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot	
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
In	10	-	-	-	-	6	-	-	-	-	-	2	-	-	-	-	4	-	-	-	-	-	-	2	-	-	-	-	-	-	24	
Out	10	-	-	-	-	-	-	-	2	-	-	4	-	-	-	-	2	4	-	-	-	-	-	-	2	-	-	-	-	-	24	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2980 / Items less than \$5 Million	Modification Number / Title: 4 / DC018 - AN/SPY-1 RM&A IMPROVEMENTS

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:

Modification Item 1 of 1: DC018 - AN/SPY-1 RM&A IMPROVEMENTS

Installation Information

Method of Implementation: AIT:: Installation Name: SIDEWALL AND 10KW TWT SHORE SITE HARDWARE

Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	8 / 0.074	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	8 / 0.074
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	8 / 0.074	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	8 / 0.074

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
Out	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8

Method of Implementation: [none specified]:: Installation Name: SOLID STATE SWITCH ASSEMBLY DDG HARDWARE

Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	2 / 2.105	1 / 1.084	0 / 0.000	1 / 1.084	- / -	- / -	- / -	- / -	0 / 0.000	3 / 3.189
FY 2018	- / -	- / -	- / -	2 / 2.169	0 / 0.000	2 / 2.169	1 / 1.119	- / -	- / -	- / -	0 / 0.000	3 / 3.288
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	2 / 2.236	- / -	- / -	- / -	0 / 0.000	2 / 2.236
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 3.387	- / -	- / -	0 / 0.000	3 / 3.387
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 5.812	- / -	0 / 0.000	5 / 5.812
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 2.503	0 / 0.000	2 / 2.503
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 1.396	1 / 1.396
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 12.995	10 / 12.995

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2980 / Items less than \$5 Million	Modification Number / Title: 4 / DC018 - AN/SPY-1 RM&A IMPROVEMENTS

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:

Modification Item 1 of 1: DC018 - AN/SPY-1 RM&A IMPROVEMENTS

Installation Information

Method of Implementation: [none specified]:: Installation Name: SOLID STATE SWITCH ASSEMBLY DDG HARDWARE

Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	46 / 55.860	46 / 55.860
Total	- / -	- / -	2 / 2.105	3 / 3.253	0 / 0.000	3 / 3.253	3 / 3.355	3 / 3.387	5 / 5.812	2 / 2.503	57 / 70.251	75 / 90.666

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	2	-	-	-	1	2	-	1	2	-	-	2	-	1	-	-	-	2	3	2	2	3	3	49	75
Out	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	2	1	-	2	-	1	-	1	-	2	-	2	1	2	59	75

Method of Implementation: [none specified]:: Installation Name: SOLID STATE SWITCH ASSEMBLY SHORE SITE HARDWARE

Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	1 / 1.120	1 / 1.173	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 2.293
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	1 / 1.195	0 / 0.000	1 / 1.195	2 / 2.537	- / -	- / -	- / -	0 / 0.000	3 / 3.732
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	1 / 1.120	1 / 1.173	1 / 1.195	0 / 0.000	1 / 1.195	2 / 2.537	- / -	- / -	- / -	0 / 0.000	5 / 6.025

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Exhibit P-3a, Individual Modification: PB 2020 Navy																							Date: March 2019								
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10											P-1 Line Item Number / Title: 2980 / Items less than \$5 Million											Modification Number / Title: 4 / DC018 - AN/SPY-1 RM&A IMPROVEMENTS									
ID Code (A=Service Ready, B=Not Service Ready) :																	MDAP/MAIS Code:														
Modification Item 1 of 1: DC018 - AN/SPY-1 RM&A IMPROVEMENTS																															
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: SOLID STATE SWITCH ASSEMBLY SHORE SITE HARDWARE																															
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
In	-	-	-	1	-	-	-	-	1	-	-	2	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	5	
Out	-	-	-	-	1	-	-	-	-	1	-	-	1	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	5	
Method of Implementation: AIT:: Installation Name: MMSP-R SHORE SITE HARDWARE																															
Installation Cost		Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total																		
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																		
Prior Years		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2018		- / -	- / -	2 / 1.206	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 1.206																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2024		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		- / -	- / -	2 / 1.206	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 1.206																		
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
In	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	
Out	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	
Method of Implementation (Organic): PACK UP KITS																															
																							Installation Quantity: 3								
Method of Implementation (Organic): SOLID STATE SWITCH ASSEMBLY SPARES																															
																							Installation Quantity: 63								

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2980 / Items less than \$5 Million	Modification Number / Title: 4 / DC018 - AN/SPY-1 RM&A IMPROVEMENTS
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
Modification Item 1 of 1: DC018 - AN/SPY-1 RM&A IMPROVEMENTS		
Installation Information		
Method of Implementation (Organic): SOLID STATE SWITCH ASSEMBLY FINAL POWER AMPLIFIER ENV/QUAL		Installation Quantity: 1
Footnotes: (14) Sidewall and 10KW ORDALT kit costs vary depending on ship and radar configurations and the mix of 10KW TWT monitoring circuit and Sidewall Capacitor kits. Exercised option to buy additional 4 DDG SWCs in FY18. (15) SSSA Spares include initial spares and INCOs which are required for installations. (16) MMSP-R FY18 reduction is based on contract cost. (17) Production support includes installation engineering services, Integrated Logistics Support (ILS) documentation updates, ORDALT instructions, engineering change proposals and Diminishing Manufacturing Sources and Material Shortages (DMSMS) analysis.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 11: Shipboard Communications							P-1 Line Item Number / Title: 3010 / Shipboard Tactical Comms					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	32.358	23.695	45.450	55.853	0.000	55.853	61.870	65.792	61.409	62.637	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	32.358	23.695	45.450	55.853	0.000	55.853	61.870	65.792	61.409	62.637	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	32.358	23.695	45.450	55.853	0.000	55.853	61.870	65.792	61.409	62.637	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	0.567	0.598	0.444	-	0.444	0.768	0.908	1.283	0.883	Continuing	Continuing
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
 Description: This system is formally specified by both Fleet Commanders as a threshold capability for global maritime command control and communications in a Distributed Maritime Environment to execute current warfighting plans and is required for National Command and Control capability. Funding provides for the procurement and installation of Integrated Waveform (IW) and Mobile User Objective System (MUOS) Digital Modular Radio (DMR) systems and IW and MUOS upgrade kits. DMR with IW and MUOS hardware is a four-channel software defined radio that provides satellite communications, Line of Sight (LOS) and High Frequency (HF), Very High Frequency (VHF) and Ultra High Frequency (UHF) communication capability to surface, submarine, and shore facilities. This variant of the DMR, including upgrade kits, provides hardware with IW/MUOS capability.												

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 11: Shipboard Communications						P-1 Line Item Number / Title: 3010 / Shipboard Tactical Comms				
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A			Other Related Program Elements: N/A			
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	1 / (DN 110) DMR IW and MUOS Systems (TBD)				- / 30.127	- / 14.061	- / 27.287	- / 39.422	- / 0.000	- / 39.422
P-3a	2 / (DN 111) DMR IW and MUOS Upgrade Kits (TBD)				- / 2.231	- / 9.634	- / 18.163	- / 16.431	- / 0.000	- / 16.431
P-40	Total Gross/Weapon System Cost				- / 32.358	- / 23.695	- / 45.450	- / 55.853	- / 0.000	- / 55.853
Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	1 / (DN 110) DMR IW and MUOS Systems (TBD)				- / 40.252	- / 55.233	- / 52.702	- / 54.777	Continuing	Continuing
P-3a	2 / (DN 111) DMR IW and MUOS Upgrade Kits (TBD)				- / 21.618	- / 10.559	- / 8.707	- / 7.860	Continuing	Continuing
P-40	Total Gross/Weapon System Cost				- / 61.870	- / 65.792	- / 61.409	- / 62.637	Continuing	Continuing
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										
Justification: The FY2020 funding request was reduced by \$5.473 million to account for the availability of prior year execution balances. FY 2020 funding provides for the procurement of 18 DMR IW & MUOS systems and 11 DMR IW & MUOS upgrade kits. In addition, FY 2020 includes funding to implement cybersecurity upgrades and cryptographic modernization to increase system performance and security for fielded DMRs.										

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Exhibit P-3a, Individual Modification: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11				P-1 Line Item Number / Title: 3010 / Shipboard Tactical Comms					Modification Number / Title: 1 / (DN 110) DMR IW and MUOS Systems			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	30.127	14.061	27.287	39.422	0.000	39.422	40.252	55.233	52.702	54.777	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	30.127	14.061	27.287	39.422	0.000	39.422	40.252	55.233	52.702	54.777	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	30.127	14.061	27.287	39.422	0.000	39.422	40.252	55.233	52.702	54.777	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Integrated Waveform (IW) and Mobile User Objective System (MUOS) Digital Modular Radio (DMR) Systems. Quantities between radios and kits may change from year to year as a result of ship availabilities and fleet priority.

[DMR IW and MUOS System Procurement - Afloat] FY 2020 funding provides for eighteen (18 QTY) DMR IW & MUOS afloat systems.

DMR IW & MUOS system annual unit cost variances for procurements and installations are driven by system configurations. There are 3 different DMR IW & MUOS System afloat configurations (2 surface & 1 subsurface) and 5 different DMR IW & MUOS Upgrade Kit afloat configurations (3 surface & 2 subsurface). Additionally, shore sites do not have a standard configuration and are unique to each individual shore site. For shore, the budget reflects individual radios vice afloat configurations.

For the DMR IW & MUOS System, the configuration ranges from 1 - 3 DMR radios and requires a unique set of ancillary equipment dependent upon ship class (racks, power amplifiers & antenna upgrades). For example, a CVN requires 3 DMR radios and would need 4 racks to complete installation. When compared to a small ship such as LCS, which needs only 1 DMR radio and 2 racks to complete installation. One (1) DMR system will range in cost depending on the type of configuration and Economic Order Quantity Pricing relevant at time of contract award.

The nineteen (19) month Production Lead Time (PLT) for DMR System delivery is due to varying PLT's from multiple ancillary equipment vendors that are then integrated into the final product. Ancillary equipment is provided to SPAWAR Systems Center (SSC) Pacific for integration, assembly and test. The seven (7) month Administrative Lead Time (ALT) for DMR System procurements allows for the identification and receipt of other customer funds in order to take advantage of favorable quantity pricing.

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11				P-1 Line Item Number / Title: 3010 / Shipboard Tactical Comms						Modification Number / Title: 1 / (DN 110) DMR IW and MUOS Systems			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: AN/USC-61(C)				Modification Type: TBD				Related RDT&E PEs: 0604280N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	
Procurement													
<i>Modification Item 1 of 1:</i> (DN 110) DMR IW and MUOS Systems													
B Kits													
Recurring													
1.1.1) DMR IW and MUOS System Procurement - Shore - NonOrganic	6 / 6.615	10 / 9.025	6 / 7.119	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing	
1.1.2) DMR IW and MUOS System Procurement - Afloat - NonOrganic ⁽¹⁾	16 / 16.041	4 / 3.830	8 / 12.937	18 / 30.491	- / -	18 / 30.491	16 / 28.192	22 / 35.877	21 / 33.810	18 / 31.446	Continuing	Continuing	
<i>Subtotal: Recurring</i>	- / 22.656	- / 12.855	- / 20.056	- / 30.491	- / -	- / 30.491	- / 28.192	- / 35.877	- / 33.810	- / 31.446	Continuing	Continuing	
<i>Subtotal: (DN 110) DMR IW and MUOS Systems</i>	22 / 22.656	14 / 12.855	14 / 20.056	18 / 30.491	- / -	18 / 30.491	16 / 28.192	22 / 35.877	21 / 33.810	18 / 31.446	Continuing	Continuing	
<i>Subtotal: Procurement, All Modification Items</i>	- / 22.656	- / 12.855	- / 20.056	- / 30.491	- / -	- / 30.491	- / 28.192	- / 35.877	- / 33.810	- / 31.446	Continuing	Continuing	
Support (All Modification Items)													
2.1) DMR IW and MUOS System Production Support	- / 2.866	- / 0.691	- / 1.087	- / 1.751	- / -	- / 1.751	- / 1.544	- / 1.757	- / 1.944	- / 1.514	Continuing	Continuing	
2.2) DMR IW and MUOS System DSA ⁽²⁾	- / 0.645	- / 0.515	- / 2.112	- / 1.871	- / -	- / 1.871	- / 3.648	- / 3.743	- / 4.520	- / 5.159	Continuing	Continuing	
<i>Subtotal: Support</i>	- / 3.511	- / 1.206	- / 3.199	- / 3.622	- / -	- / 3.622	- / 5.192	- / 5.500	- / 6.464	- / 6.673	Continuing	Continuing	
Installation													
<i>Modification Item 1 of 1:</i> (DN 110) DMR IW and MUOS Systems	- / 3.960	- / 0.000	- / 4.032	- / 5.309	- / 0.000	- / 5.309	- / 6.868	- / 13.856	- / 12.428	- / 16.658	Continuing	Continuing	
<i>Subtotal: Installation</i>	- / 3.960	- / -	- / 4.032	- / 5.309	- / -	- / 5.309	- / 6.868	- / 13.856	- / 12.428	- / 16.658	Continuing	Continuing	
Total													
Total Cost (Procurement + Support + Installation)	30.127	14.061	27.287	39.422	0.000	39.422	40.252	55.233	52.702	54.777	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11										P-1 Line Item Number / Title: 3010 / Shipboard Tactical Comms										Modification Number / Title: 1 / (DN 110) DMR IW and MUOS Systems											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: (DN 110) DMR IW and MUOS Systems																															
Manufacturer Information																															
Manufacturer Name: General Dynamics															Manufacturer Location: Scottsdale, Arizona																
Administrative Leadtime <i>(in Months)</i> : 7															Production Leadtime <i>(in Months)</i> : 19																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates		Jan 2019				May 2019				May 2020																					
Delivery Dates		Aug 2020				Dec 2020				Dec 2021																					
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: DMR IW and MUOS System Procurement - Shore																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		2 / 1.800		- / -		2 / 0.500		- / -		- / -		- / -		- / -		2 / 0.500		- / -		- / -		0 / 0.000		6 / 2.800							
FY 2018		- / -		- / -		- / -		10 / 2.125		0 / 0.000		10 / 2.125		- / -		- / -		- / -		- / -		0 / 0.000		10 / 2.125							
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		6 / 1.095		- / -		- / -		- / -		0 / 0.000		6 / 1.095							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		Continuing		Continuing							
Total		2 / 1.800		- / -		2 / 0.500		10 / 2.125		0 / 0.000		10 / 2.125		6 / 1.095		2 / 0.500		- / -		- / -		Continuing		Continuing							
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	2	-	-	-	-	-	-	-	2	-	-	-	10	-	-	3	3	-	-	-	2	-	-	-	-	-	-	-	-	Cont.	Cont.
Out	-	2	-	-	-	-	-	-	-	2	-	-	-	10	-	-	3	3	-	-	-	2	-	-	-	-	-	-	-	Cont.	Cont.

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	P-1 Line Item Number / Title: 3010 / Shipboard Tactical Comms	Modification Number / Title: 1 / (DN 110) DMR IW and MUOS Systems

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:

Modification Item 1 of 1: (DN 110) DMR IW and MUOS Systems

Installation Information

Method of Implementation: [none specified]:: Installation Name: DMR IW and MUOS System Procurement - Afloat

Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	6 / 2.160	- / -	8 / 3.532	2 / 1.062	0 / 0.000	2 / 1.062	- / -	- / -	- / -	- / -	0 / 0.000	16 / 6.754
FY 2018	- / -	- / -	- / -	4 / 2.122	0 / 0.000	4 / 2.122	- / -	- / -	- / -	- / -	0 / 0.000	4 / 2.122
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	8 / 5.773	- / -	- / -	- / -	0 / 0.000	8 / 5.773
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	18 / 13.356	- / -	- / -	0 / 0.000	18 / 13.356
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	16 / 12.428	- / -	0 / 0.000	16 / 12.428
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	22 / 16.658	0 / 0.000	22 / 16.658
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	6 / 2.160	- / -	8 / 3.532	6 / 3.184	0 / 0.000	6 / 3.184	8 / 5.773	18 / 13.356	16 / 12.428	22 / 16.658	Continuing	Continuing

Installation Schedule

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	6	-	-	-	-	-	2	3	3	-	1	1	4	-	1	4	3	5	6	4	3	-	4	7	5	3	4	7	8	Cont.	Cont.
Out	3	3	-	-	-	-	-	2	3	3	-	1	1	4	-	1	4	3	5	6	4	3	-	4	7	5	3	4	7	Cont.	Cont.

Footnotes:

(1) The combination of configurations purchased in FY 2020 gives the appearance of an average unit cost increase. FY20 is procuring 1 more big deck (LCC/LHD/CVN) systems than in FY19 (\$4.142M/system), 1 more LSD class system (\$1.324M/system), 6 more DDG system (\$1.392M/system), 3 more USCG systems (\$1.392M/system), and 1 less submarine system (\$0.687M/system). Large-deck platforms require 3 DMR radios and more associated ancillary equipment, compared to 1 DMR radio for all other configurations.

(2) DSA estimates are based off a percentage of the total installation cost with 75% of costs being required the year prior for installation design work and 25% required the year of the actual installation. The DSA cost variance is due to ship configuration being installed. The DSA decrease from FY 2019 to FY 2020 is a result of the decrease in the number of installations planned: 10 installations in FY 2020 to 6 installations in FY 2021.

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11					P-1 Line Item Number / Title: 3010 / Shipboard Tactical Comms					Modification Number / Title: 2 / (DN 111) DMR IW and MUOS Upgrade Kits		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	2.231	9.634	18.163	16.431	0.000	16.431	21.618	10.559	8.707	7.860	Continuing	Continuing
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	2.231	9.634	18.163	16.431	0.000	16.431	21.618	10.559	8.707	7.860	Continuing	Continuing
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	2.231	9.634	18.163	16.431	0.000	16.431	21.618	10.559	8.707	7.860	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Description: This system is formally specified by both Fleet Commanders as a threshold capability for global maritime command control and communications in a Distributed Maritime Environment to execute current warfighting plans and is required for National Command and Control capability. Integrated Waveform (IW) and Mobile User Objective System (MUOS) Digital Modular Radio (DMR) Upgrade Kits. Quantities between radios and kits may change from year to year as a result of ship availabilities and fleet priority. [DMR IW and MUOS Upgrade Kits Procurement] FY 2020 funding provides for eleven (11 QTY) DMR IW & MUOS afloat upgrade kits. In addition, Engineering Change Orders (ECOs) are required to implement cybersecurity upgrades and cryptographic modernization to increase system performance and security for fielded Digital Modular Radios (DMRs). DMR IW & MUOS upgrade kit annual unit cost variances for procurements and installations are driven by system configurations. There are 3 different DMR IW & MUOS System afloat configurations (2 surface & 1 subsurface) and 5 different DMR IW & MUOS Upgrade Kit afloat configurations (3 surface & 2 subsurface). Additionally, shore sites do not have a standard configuration and are unique to each individual shore site. For shore, the budget reflects individual radios vice afloat configurations. For the DMR IW & MUOS Upgrade Kit, the configuration ranges from 1 - 3 DMR upgrade kits and requires a unique set of ancillary equipment dependent upon ship class (racks, power amplifiers & antenna upgrades). DMR upgrade kit cost will vary depending on the type of configuration and Economic Order Quantity Pricing relevant at time of contract award. The nineteen (19) month Production Lead Time (PLT) for DMR Upgrade Kit delivery is due to varying PLT's from multiple ancillary equipment vendors that are then integrated into the final product. Ancillary equipment is provided to SPAWAR Systems Center (SSC) Pacific for integration, assembly and test. The seven (7) month Administrative Lead Time (ALT) for DMR Upgrade Kit procurements allows for the identification and receipt of other customer funds in order to take advantage of favorable quantity pricing.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11				P-1 Line Item Number / Title: 3010 / Shipboard Tactical Comms				Modification Number / Title: 2 / (DN 111) DMR IW and MUOS Upgrade Kits					
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: AN/USC-61(C)				Modification Type: TBD				Related RDT&E PEs: 0604280N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: (DN 111) DMR IW and MUOS Upgrade Kits													
B Kits													
Recurring													
1.1.1) DMR IW and MUOS Upgrade Kits Procurement - NonOrganic ⁽³⁾	11 / 1.597	8 / 5.200	24 / 9.814	11 / 4.855	- / -	11 / 4.855	12 / 5.307	9 / 2.311	8 / 2.401	12 / 4.419	Continuing	Continuing	
1.1.2) Engineering Change Orders (ECOs) - Organic ⁽⁴⁾	- / -	- / 2.958	- / 4.703	- / 3.086	- / -	- / 3.086	- / 3.460	- / 2.000	- / -	- / -	- / -	- / 16.207	
Subtotal: Recurring	- / 1.597	- / 8.158	- / 14.517	- / 7.941	- / -	- / 7.941	- / 8.767	- / 4.311	- / 2.401	- / 4.419	Continuing	Continuing	
Subtotal: (DN 111) DMR IW and MUOS Upgrade Kits	11 / 1.597	8 / 8.158	24 / 14.517	11 / 7.941	- / -	11 / 7.941	12 / 8.767	9 / 4.311	8 / 2.401	12 / 4.419	Continuing	Continuing	
Subtotal: Procurement, All Modification Items	- / 1.597	- / 8.158	- / 14.517	- / 7.941	- / -	- / 7.941	- / 8.767	- / 4.311	- / 2.401	- / 4.419	Continuing	Continuing	
Support (All Modification Items)													
2.1) DMR IW and MUOS Upgrade Kits Production Support	- / 0.084	- / 0.280	- / 0.532	- / 0.279	- / -	- / 0.279	- / 0.290	- / 0.113	- / 0.138	- / 0.213	Continuing	Continuing	
2.2) DMR IW and MUOS Upgrade Kits DSA ⁽⁵⁾	- / 0.550	- / 0.312	- / 1.367	- / 2.405	- / -	- / 2.405	- / 1.530	- / 1.295	- / 0.515	- / 0.651	Continuing	Continuing	
Subtotal: Support	- / 0.634	- / 0.592	- / 1.899	- / 2.684	- / -	- / 2.684	- / 1.820	- / 1.408	- / 0.653	- / 0.864	Continuing	Continuing	
Installation													
Modification Item 1 of 1: (DN 111) DMR IW and MUOS Upgrade Kits	- / 0.000	- / 0.884	- / 1.747	- / 5.806	- / 0.000	- / 5.806	- / 11.031	- / 4.840	- / 5.653	- / 2.577	Continuing	Continuing	
Subtotal: Installation	- / 0.000	- / 0.884	- / 1.747	- / 5.806	- / -	- / 5.806	- / 11.031	- / 4.840	- / 5.653	- / 2.577	Continuing	Continuing	
Total													
Total Cost (Procurement + Support + Installation)	2.231	9.634	18.163	16.431	0.000	16.431	21.618	10.559	8.707	7.860	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11										P-1 Line Item Number / Title: 3010 / Shipboard Tactical Comms										Modification Number / Title: 2 / (DN 111) DMR IW and MUOS Upgrade Kits											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: (DN 111) DMR IW and MUOS Upgrade Kits																															
Manufacturer Information																															
Manufacturer Name: General Dynamics															Manufacturer Location: Scottsdale, Arizona																
Administrative Leadtime <i>(in Months)</i> : 7															Production Leadtime <i>(in Months)</i> : 19																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates		Jan 2019				May 2019				May 2020																					
Delivery Dates		Aug 2020				Dec 2020				Dec 2021																					
Installation Information																															
Method of Implementation: Method:: Installation Name: DMR MUOS Upgrade Kits																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		- / -		4 / 0.884		5 / 1.747		2 / 1.162		0 / 0.000		2 / 1.162		- / -		- / -		- / -		- / -		0 / 0.000		11 / 3.793							
FY 2018		- / -		- / -		- / -		8 / 4.644		0 / 0.000		8 / 4.644		- / -		- / -		- / -		- / -		0 / 0.000		8 / 4.644							
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		24 / 11.031		- / -		- / -		- / -		0 / 0.000		24 / 11.031							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		11 / 4.840		- / -		- / -		0 / 0.000		11 / 4.840							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		12 / 5.653		- / -		0 / 0.000		12 / 5.653							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		9 / 2.577		0 / 0.000		9 / 2.577							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		Continuing		Continuing							
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		Continuing		Continuing							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		Continuing		Continuing							
Total		- / -		4 / 0.884		5 / 1.747		10 / 5.806		0 / 0.000		10 / 5.806		24 / 11.031		11 / 4.840		12 / 5.653		9 / 2.577		Continuing		Continuing							
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	1	3	-	1	2	2	-	1	1	8	4	9	8	3	1	2	6	2	2	4	3	3	3	3	2	1	Cont.	Cont.
Out	-	-	-	-	1	3	-	1	2	2	-	1	1	8	4	9	8	3	1	2	6	2	2	4	3	3	3	3	2	Cont.	Cont.
Footnotes: ⁽³⁾ Unit Cost variances for procurements are driven by afloat upgrade kit configurations and ancillary equipment (racks, power amplifiers & antenna upgrades), which is dependent upon ship class. There are 5 different DMR IW & MUOS Upgrade Kit afloat configurations (3 surface & 2 subsurface) where each configuration ranges from 1 - 3 DMR upgrade kits and a unique set of ancillary equipment.																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	P-1 Line Item Number / Title: 3010 / Shipboard Tactical Comms	Modification Number / Title: 2 / (DN 111) DMR IW and MUOS Upgrade Kits
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
(4) Engineering Change Orders (ECOs) are required to implement cybersecurity upgrades and cryptographic modernization to increase system performance and security for fielded Digital Modular Radios (DMRs). FY 2018-2020 procures and installs Win 10 upgrades and performs associated integration, assembly and test. FY 2018-2022 includes engineering changes associated with cryptographic modernization as directed by National Security Agency (NSA). DMRs current embedded cryptographic systems will no longer be able to communicate securely after Crypto Keys expire due to cease key dates as directed by NSA. In order to ensure warfighters continued secure (i.e. encrypted) communications, DMRs must modernize their cryptographic capabilities by implementing the latest algorithms. (5) DSA estimates are based off a percentage of the total installation cost with 75% of costs being required the year prior for installation design work and 25% required the year of the actual installation. The DSA cost variance is due to ship configuration being installed. The DSA increase from FY 2019 to FY 2020 is a result of the increase in the number of installations planned: 10 installations in FY 2020 to 24 installations in FY 2021.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 11: Shipboard Communications							P-1 Line Item Number / Title: 3050 / Ship Communications Automation					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A					Other Related Program Elements: 0204163N			
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	615.392	99.545	105.087	137.861	0.000	137.861	122.421	94.494	96.577	92.889	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	615.392	99.545	105.087	137.861	0.000	137.861	122.421	94.494	96.577	92.889	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	615.392	99.545	105.087	137.861	0.000	137.861	122.421	94.494	96.577	92.889	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	0.665	1.062	1.005	-	1.005	0.814	0.628	0.607	0.769	Continuing	Continuing
Flyaway Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-
Description:												
Ship Communication Automation (52PQ): With the evolution of afloat networks programs migrating into the Consolidated Afloat Networks and Enterprise Services (CANES) program , the Ship Communications Automation budget line will continue to support Automated Digital Network System (ADNS), Legacy Network Operation Rolling Tide (ORT), Command and Control Official Information eXchange (C2OIX) (formerly Tactical Messaging), Shore Tactical Assured Command and Control (STACC) (formerly Tactical Switching) and Piers / Enterprise Pier Connectivity Architecture (EPCA) programs.												
Automated Digital Network System (ADNS): ADNS provides routing, switching, baseband, configuration and monitoring capabilities for interconnecting naval and coalition enclaves worldwide. ADNS utilizes Commercial Off-the-Shelf/ Government Off-the-Shelf (COTS/GOTS) equipment and network protocols as specified by the joint technical architecture. ADNS Increment (INC) I provides ship to shore Internet Protocol (IP) connectivity, separation of enclaves, reuse of unused enclave bandwidth, and ship to tactical shore IP connectivity. ADNS INC II provides capabilities of network to Satellite Communications, Load Balancing, Radio Frequency (RF) restoral, and Quality of Service (QoS) to include application prioritization, Traffic Management, compression and enhancements designed to maximize use of "effective" available bandwidth for surface, shore, and airborne platforms. ADNS INC III combines all Navy Tactical Voice, secure Communications Interoperability Protocol Inter-Working Function, Video, data requirements into a converged IP data stream, and Assured Command and Control (C2) capabilities. This includes Secure Communication Interoperability- Protocol Interworking Function (SCIP-IWF) for secure telephony over IP. In addition, the INC III architecture will incorporate an IPv4/IPv6 dual stack and a Cipher-Text security architecture to align to the Global Information Grid (GIG) in order to mesh Navy tactical surface, subsurface, airborne platforms, and Aegis Ashore sites into a single IP environment with gateway functions to joint and coalition networks. Technical Insertions are minor upgrades to existing system hardware and software baseline that are required to maximize C4ISR capability and interface functionality between ADNS and applicable programs.												
Legacy Network Cyber Resiliency/Operation Rolling Tide (ORT): ORT is a Navy-wide cyber remediation effort to secure government databases and improve the overall security protocols for Navy computer networks. Specifically, Legacy Network Cyber Resiliency/ORT will fund planned legacy network upgrades and mitigate security vulnerabilities on the highest End of Life (EOL) platforms that are not targeted to be replaced by a CANES system. These upgrades will mitigate known targeted cyber vulnerabilities and include eradication of old Windows Operating Systems, critical EOL firewalls and routers and improved anti-malware solutions. Legacy Network Cyber Resiliency/ORT will improve the networks ability to detect known and unknown vulnerabilities and attacks by upgrading sensor and monitoring technologies and accelerating post-attack containment and recovery.												
Piers / Enterprise Pier Connectivity Architecture (EPCA): Commander Pacific Fleet, Commander United States Naval European Command and Commander United States Naval Central Command have declared pier IT infrastructure modernization to be a Force Protection matter of urgency. A fully capable and modern Enterprise pier IT infrastructure allows US Naval ships, while pier-side at 26 global locations (15 CONUS/11 OCONUS), to secure their Radio Frequency (RF) systems for critical maintenance, perform battle force training, while continuing to send and receive operational and intelligence traffic. This element of the BLII program installs state-of-the-art, Automated Digital Network System compatible IT infrastructure to Navy operated piers worldwide, including public and commercial shipyards and authorized												

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 11: Shipboard Communications		P-1 Line Item Number / Title: 3050 / Ship Communications Automation
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0204163N
Line Item MDAP/MAIS Code: N/A		
DON foreign ports. EPCA provides expanded NIPRNET/SIPRNET capability to piers to meet Fleet Commander stated requirements in order to maintain situational awareness related to anti-terrorist military operations. Further, it ensures bandwidth requirements are met in order to download critical security patches and updates required for ships to maintain proper IA security posture. While in port, ships are connected by either an Umbilical Cable Assembly (UCA) or a Wireless solution from the skin of the ship to the first Navy Network Operations Center (NOC). Beginning in FY20, Piers/EPCA transitions from LI 8164 Navy/Marine Corps Intranet (NMCI) OCONUS (OCONUS Piers Technical Refresh) to LI 3050 Ship Communications Automation. Command and Control Official Information eXchange (C2OIX): C2OIX consolidates the Tactical Messaging and Defense Messaging System (DMS) programs and manages the Official Information Exchange (OIX) of organizational record message traffic, providing sustainment support and modernization for all afloat and ashore platforms. The modernization effort within C2OIX for afloat platforms replaces older Naval Modular Automated Communication System (NAVMACS) that lacked adherence to current cyber security requirements. It also automates and increases the speed and efficiency of handling organizational message traffic aboard ships and submarines, as well as replaces ten NAVMACS surface shipboard variants distributed across United States Navy (USN), Military Sealift Command (MSC) and United States Coast Guard (USCG) ships with a single shipboard variant. The ashore component of C2OIX Project is the IP-based C2OIX Shore Gateway system. C2OIX will virtualize all Government Official Information Exchange System (GOES) software suites on shore gateway UNCLASSIFIED, SECRET and TOP SECRET message enclaves and provide an integrated Cross Domain Solution (CDS) at the two Naval Computer Telecommunication Area Master Stations (NCTAMS PACIFIC and NCTAMS ATLANTIC). C2OIX shore and afloat will satisfy Navy record messaging requirements and implement products that are developed with an open system architecture. Shore Tactical Assured Command and Control (STACC) is the Navy's Program of Record to consolidate and modernize the ashore wide area network services infrastructure supporting afloat forces and shore commands assigned with tactical, operational, and strategic missions. STACC directly supports afloat legacy networks (e.g., ISNS), Consolidated Afloat Networks and Enterprise Services (CANES) and Automated Digital Network System (ADNS) and all associated systems installed on those networks by providing direct interfaces to the Defense Information Systems Network (DISN), thus enabling interoperability within Navy tactical forces and with combatant commands, joint forces, coalition/mission partners, and other Services/Agencies. STACC fields capability at five regions, covering over 40 facilities in both CONUS and OCONUS locations. STACC supports over 410 surface and subsurface platforms. The STACC portfolio includes wide area terrestrial transport services, core network services, network monitoring and management, and is comprised of hardware, software, computing/processing, network, and storage technologies. These services span several security classification levels to include unclassified, secret, Combined Enterprise Regional Information Exchange System - Maritime (CENTRIXS-M), Sensitive Compartmented Information (SCI), and Virtual Secure Enclave (VSE). VSE is a resilient network designed to survive in a highly contested cyber environment. VSE provides resilient networking for command and control applications at the operational level of war in denied environment scenarios. The network management service provides users with access to near real time situational awareness of the health and status of the network. STACC enables operators the ability to understand what is and is not normal on the network and provides a pre-emptive cyberspace capability to fight and win in a cyber-denied information environment. The STACC's network monitoring and management system is also a critical and foundational data set provider to the Navy's Cyber Situational Awareness (NCSA) program/system which performs further processing, correlation, and impact assessment. The STACC network core service offerings provide afloat platforms reach back services such as email, chat, Domain Name System (DNS), patching and C2 application hosting services for programs that need to be in a tactical environment. The hosting services include Infrastructure as a Service (IaaS) and Platform as a Service (PaaS) offerings. STACC's systems are located in 5 regions: 1) Eastern Pacific supporting Commander Pacific Fleet and Commander Third Fleet (Naval Computer & Telecommunications Area Master Station Pacific (NCTAMS PAC) and Naval Computer & Telecommunications Station San Diego (NCTS San Diego); 2) Western Pacific supporting Commander Seventh Fleet; 3) Indian Ocean supporting Commander Fifth (NCTS BAHRAIN); 4) European supporting Commander Sixth Fleet (NCTS NAPLES); and 5) Atlantic supporting US Fleet Forces Command, Commander Tenth Fleet and Commander Fourth Fleet (NCTAMS LANT); to include Joint and Coalition Partners within each region. STACC systems will also be procured in support of NCTAMS LANT's new integrated Communications Center.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy			Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 11: Shipboard Communications			P-1 Line Item Number / Title: 3050 / Ship Communications Automation		
ID Code (A=Service Ready, B=Not Service Ready): A		Program Elements for Code B Items: N/A		Other Related Program Elements: 0204163N	
Line Item MDAP/MAIS Code: N/A					

Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / Ship Communications Automation	P-5a			- / 90.730	- / 17.049	- / 2.900	- / 2.900	- / 0.000	- / 2.900
P-3a	1 / PQ065 Command and Control Official Information eXchange (C2OIX) (TBD)				- / 129.899	- / 4.048	- / 9.323	- / 8.525	- / 0.000	- / 8.525
P-3a	2 / PQ069 Automated Digital Network System (ADNS) - Afloat (TBD)				- / 86.397	- / 49.436	- / 63.408	- / 65.943	- / 0.000	- / 65.943
P-3a	3 / PQ070 Shore Tactical Assured Command and Control (STACC) (formerly Tactical Switching) (TBD)				- / 308.366	- / 29.012	- / 29.456	- / 50.607	- / 0.000	- / 50.607
P-3a	5 / PQ020 Piers / Enterprise Pier Connectivity Architecture (EPCA) (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 9.886	- / 0.000	- / 9.886
P-40	Total Gross/Weapon System Cost				- / 615.392	- / 99.545	- / 105.087	- / 137.861	- / 0.000	- / 137.861

Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / Ship Communications Automation	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / PQ065 Command and Control Official Information eXchange (C2OIX) (TBD)				- / 4.347	- / 4.392	- / 4.505	- / 4.413	Continuing	Continuing
P-3a	2 / PQ069 Automated Digital Network System (ADNS) - Afloat (TBD)				- / 63.582	- / 55.379	- / 59.577	- / 57.332	Continuing	Continuing
P-3a	3 / PQ070 Shore Tactical Assured Command and Control (STACC) (formerly Tactical Switching) (TBD)				- / 41.560	- / 21.625	- / 19.200	- / 17.652	Continuing	Continuing
P-3a	5 / PQ020 Piers / Enterprise Pier Connectivity Architecture (EPCA) (TBD)				- / 10.032	- / 10.198	- / 10.395	- / 10.592	Continuing	Continuing
P-40	Total Gross/Weapon System Cost				- / 122.421	- / 94.494	- / 96.577	- / 92.889	Continuing	Continuing

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:

In FY20, ADNS continues integration of Assured Command and Control capabilities to meet fleet requirements as well as fielding at Aegis Ashore sites. In FY20, ADNS funds are for the procurement of (34) INC III Afloat units, (57) INC III Afloat Technical Insertion units, (4) Ashore INC I/INC II units, and (6) Ashore INC III units (to include one Aegis Ashore system), with integration, and associated costs for pre-installation design. In addition, the FY20 ADNS investment will fund installation of (33) INC III Afloat units, (57) INC III Afloat Technical Insertion units, (4) Ashore INC I/INC II units, and (6) Ashore INC III units. The increase in ADNS technical insertion units is driven by the need to field additional ADNS capabilities required by other programs.

In FY20, Piers / EPCA will procure (3) and install (3) EPCA units pier side to address pier IT infrastructure modernization in of support Force Protection matter of urgency. Funds will support pre-installation design, site surveys, procurement of hardware and software, production support, and installation of Piers IT infrastructure. Beginning in FY20, Piers / EPCA transitions from LI 8164 Navy/Marine Corps Intranet (NMCi) OCONUS (OCONUS Piers Technical Refresh) to LI 3050 Ship Communications Automation.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 11: Shipboard Communications		P-1 Line Item Number / Title: 3050 / Ship Communications Automation
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0204163N
Line Item MDAP/MAIS Code: N/A		
In FY20, C2OIX will procure (34), and install & integrate (60) C2OIX Afloat (NAVMACS) units. Funds will support associated costs for pre-installation design to replace old legacy equipment onboard ships and submarines. FY20 funds continue to modernize NAVMACS components on 72 legacy systems to eliminate a legacy cross domain solution mandated by the DoD Information Security Risk Management Committee (ISRMC). FY20-FY24 fluctuation in installation costs is due to cost decrease when C2OIX installations are combined with CANES installations. In FY20, STACC begins the expansion of the Virtual Secure Enclave (VSE) to support additional MOC users, as well as their Commander Task Forces (CTF) in support of the Resilient Command and Control (C2) initiative. FY20 funding will engineer, integrate, procure, and install hardware and software to expand VSE user capacity from 1,250 to 3,500 in order to support specific operation plans, adding critical C2 applications for MOC and Commander Task Forces (CTF) users for operation in contested environment situations. The capability is being expanded across 26 sites in the Pacific and Atlantic regions. In FY20, funding for STACC will also engineer, integrate, procure, and install hardware and software for redundancy and resiliency to: transition legacy serial transport to an IP environment; expand IP services (Unclassified, SECRET, CENTRIXS-M, and SCI) to include application hosting services and expand storage capability; and enhance Network Operations monitoring and management, provide cyber remediation solutions to detect, deter and mitigate network threats and for Assured Command and Control to support terrestrial communications and routing changes.		

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11						P-1 Line Item Number / Title: 3050 / Ship Communications Automation						Item Number / Title [DODIC]: 1 / Ship Communications Automation						
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Resource Summary				Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total				
Procurement Quantity (Units in Each)				-		-		-		-		-		-				
Gross/Weapon System Cost (\$ in Millions)				90.730		17.049		2.900		2.900		0.000		2.900				
Less PY Advance Procurement (\$ in Millions)				-		-		-		-		-		-				
Net Procurement (P-1) (\$ in Millions)				90.730		17.049		2.900		2.900		0.000		2.900				
Plus CY Advance Procurement (\$ in Millions)				-		-		-		-		-		-				
Total Obligation Authority (\$ in Millions)				90.730		17.049		2.900		2.900		0.000		2.900				
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																		
Initial Spares (\$ in Millions)				-		-		-		-		-		-				
Gross/Weapon System Unit Cost (\$ in Thousands)				-		-		-		-		-		-				
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Hardware Cost																		
Recurring Cost																		
1.1.1) Automated Digital Network System (ADNS) - Ashore - INC I&II ^(†) (1)	100.000	8	0.800	100.000	4	0.400	100.000	4	0.400	100.000	4	0.400	-	-	0.000	100.000	4	0.400
1.1.2) Automated Digital Network System (ADNS) - Ashore - INC III ^(†) (2)	422.222	18	7.600	416.667	6	2.500	416.667	6	2.500	416.667	6	2.500	-	-	0.000	416.667	6	2.500
1.1.3) Legacy Network Cyber Resiliency/ Operation Rolling Tide (ORT) ^(†) (3)	784.095	105	82.330	943.267	15	14.149	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	90.730	-	-	17.049	-	-	2.900	-	-	2.900	-	-	0.000	-	-	2.900
Subtotal: Hardware Cost	-	-	90.730	-	-	17.049	-	-	2.900	-	-	2.900	-	-	0.000	-	-	2.900
Gross/Weapon System Cost	-	-	90.730	-	-	17.049	-	-	2.900	-	-	2.900	-	-	0.000	-	-	2.900
Remarks: ADNS Ashore/ Network Operations Center (NOC) ORT Legacy Network Cyber Resiliency/Operation Rolling Tide (†) indicates the presence of a P-5a																		

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Exhibit P-5, Cost Analysis: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	P-1 Line Item Number / Title: 3050 / Ship Communications Automation	Item Number / Title [DODIC]: 1 / Ship Communications Automation
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
Footnotes: ⁽¹⁾ Automated Digital Network System (ADNS): Tech refresh is required to field hardware to address End of Life issues at (4) ADNS Network Operation Centers (NOC): NCTS Bahrain, NCTAMS EURCENT, NCTAMS LANT, and NCTAMS PAC sites. ⁽²⁾ - Automated Digital Network System (ADNS): FY18-24 procurement quantities represent minor tech refreshes at 6 sites that include 2 Broadcast Control Authority and 4 NOCs (NCTS Bahrain, NCTAMS EURCENT, NCTAMS LANT, and NCTAMS PAC). INC III Ashore units require 3 months integration, assembly, testing and shipping after delivery, prior to installation start. Installs do not begin until 10 months after procurement contract award (7 months production lead time + 3 months integration). ⁽³⁾ Legacy Network Cyber Resiliency/Operation Rolling Tide (ORT): ORT is a Navy-wide cyber remediation effort to secure government databases and improve the overall security protocols for Navy computer networks. Specifically, Legacy Network Cyber Resiliency/ORT funded legacy network upgrades and mitigated security vulnerabilities on the highest End of Life platforms that were not targeted to be replaced by a Consolidated Afloat Networks & Enterprise Services (CANES) system. The purpose of the upgrades were to mitigate known targeted cyber vulnerabilities and include eradication of old Windows Operating Systems, critical End of Life (EOL) firewalls and routers and improved anti-malware solutions. Legacy Network Cyber Resiliency/ORT efforts improve the networks ability to detect known and unknown vulnerabilities and attacks by upgrading sensor and monitoring technologies and accelerate post-attack containment and recovery. Average unit cost fluctuations are attributable to variances in system configuration requirements among platforms. The average procurement unit cost for larger deck unit level platforms range: \$.1M-\$5.7M. Smaller deck unit level platforms range: \$.1M-\$6M. Installation cost fluctuations are attributed to and dependent on class, level of the platform, variant of predecessor system the hull currently has installed, geographic location of the installation, and length of the availability. Installation cost range: \$.1M - \$2.8M.		

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11				P-1 Line Item Number / Title: 3050 / Ship Communications Automation				Item Number / Title [DODIC]: 1 / Ship Communications Automation				
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) Automated Digital Network System (ADNS) - Ashore - INC I&II		2018	SSC PAC ⁽⁴⁾ / San Diego, CA	C / IDIQ	SPAWAR	Nov 2017	Mar 2018	4	100.000	Y		
1.1.1) Automated Digital Network System (ADNS) - Ashore - INC I&II		2019	SSC PAC ⁽⁴⁾ / San Diego, CA	C / IDIQ	SPAWAR	Nov 2018	Mar 2019	4	100.000	Y		
1.1.1) Automated Digital Network System (ADNS) - Ashore - INC I&II		2020	SSC PAC ⁽⁴⁾ / San Diego, CA	C / IDIQ	SPAWAR	Nov 2019	Mar 2020	4	100.000	Y		
1.1.2) Automated Digital Network System (ADNS) - Ashore - INC III		2018	SSC PAC / San Diego, CA	C / IDIQ	SPAWAR	Nov 2017	Sep 2018	6	416.667	Y		
1.1.2) Automated Digital Network System (ADNS) - Ashore - INC III		2019	SSC PAC / San Diego, CA	C / IDIQ	SPAWAR	Nov 2018	Sep 2019	6	416.667	Y		
1.1.2) Automated Digital Network System (ADNS) - Ashore - INC III		2020	SSC PAC / San Diego, CA	C / IDIQ	SPAWAR	Nov 2019	Sep 2020	6	416.667	Y		
1.1.3) Legacy Network Cyber Resiliency/Operation Rolling Tide (ORT)		2018	SSC PAC / San Diego, CA	C / IDIQ	SPAWAR	Nov 2017	Mar 2018	15	943.267	Y		

Footnotes:

⁽⁴⁾ SSC PAC is the procuring agency for ADNS Ashore components and leverages multiple contract vehicles with various vendors.

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11					P-1 Line Item Number / Title: 3050 / Ship Communications Automation					Modification Number / Title: 1 / PQ065 Command and Control Official Information eXchange (C2OIX)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	129.899	4.048	9.323	8.525	0.000	8.525	4.347	4.392	4.505	4.413	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	129.899	4.048	9.323	8.525	0.000	8.525	4.347	4.392	4.505	4.413	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	129.899	4.048	9.323	8.525	0.000	8.525	4.347	4.392	4.505	4.413	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Command and Control Official Information eXchange (C2OIX) (formerly Tactical Messaging): C2OIX consolidates the Tactical Messaging and Defense Messaging System (DMS) programs and manages the Official Information Exchange (OIX) of organizational record message traffic, providing sustainment support and modernization for all afloat and ashore platforms. The modernization effort within C2OIX for afloat platforms replaces older Naval Modular Automated Communication System (NAVMACS) that lacked adherence to current cyber security requirements. It also automates and increases the speed and efficiency of handling organizational message traffic aboard ships and submarines, as well as replaces ten NAVMACS surface shipboard variants distributed across United States Navy (USN), Military Sealift Command (MSC) and United States Coast Guard (USCG) ships with a single shipboard variant. The ashore component of C2OIX Project is the IP-based C2OIX Shore Gateway system. C2OIX will virtualize all Government Official Information Exchange System (GOES) software suites on shore gateway UNCLASSIFIED, SECRET and TOP SECRET message enclaves and provide an integrated Cross Domain Solution (CDS) at the two Naval Computer Telecommunication Area Master Stations (NCTAMS PACIFIC and NCTAMS ATLANTIC). C2OIX shore and afloat will satisfy Navy record messaging requirements and implement products that are developed with an open system architecture.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy									Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11				P-1 Line Item Number / Title: 3050 / Ship Communications Automation					Modification Number / Title: 1 / PQ065 Command and Control Official Information eXchange (C2OIX)				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: Tactical Messaging / C2OIX / NAVMACS				Modification Type: TBD					Related RDT&E PEs:				
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: PQ065 Command and Control Official Information eXchange (C2OIX)													
B Kits													
Recurring													
1.1.1) Consolidated Prior Year Requirements - Organic	237 / 97.338	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	237 / 97.338	
1.1.2) C2OIX Equipment (Afloat) - NonOrganic ⁽⁵⁾	49 / 10.981	11 / 1.958	63 / 4.537	34 / 2.448	- / -	34 / 2.448	10 / 1.790	9 / 1.127	10 / 1.979	10 / 1.883	Continuing	Continuing	
1.1.3) C2OIX Equipment (Ashore) - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.380	- / -	- / -	Continuing	Continuing	
Subtotal: Recurring	- / 108.319	- / 1.958	- / 4.537	- / 2.448	- / -	- / 2.448	- / 1.790	- / 1.507	- / 1.979	- / 1.883	Continuing	Continuing	
Subtotal: PQ065 Command and Control Official Information eXchange (C2OIX)	286 / 108.319	11 / 1.958	63 / 4.537	34 / 2.448	- / -	34 / 2.448	10 / 1.790	11 / 1.507	10 / 1.979	10 / 1.883	Continuing	Continuing	
Subtotal: Procurement, All Modification Items	- / 108.319	- / 1.958	- / 4.537	- / 2.448	- / -	- / 2.448	- / 1.790	- / 1.507	- / 1.979	- / 1.883	Continuing	Continuing	
Support (All Modification Items)													
2.1) Production Support	- / 8.613	- / 0.045	- / 0.193	- / 0.193	- / 0.000	- / 0.193	- / 0.106	- / 0.091	- / 0.092	- / 0.091	Continuing	Continuing	
2.2) DSA ⁽⁶⁾	- / 7.575	- / 0.545	- / 0.971	- / 1.241	- / 0.000	- / 1.241	- / 0.954	- / 0.217	- / 0.216	- / 0.222	Continuing	Continuing	
Subtotal: Support	- / 16.188	- / 0.590	- / 1.164	- / 1.434	- / -	- / 1.434	- / 1.060	- / 0.308	- / 0.308	- / 0.313	Continuing	Continuing	
Installation													
Modification Item 1 of 1: PQ065 Command and Control Official Information eXchange (C2OIX)	- / 5.392	- / 1.500	- / 3.622	- / 4.643	- / 0.000	- / 4.643	- / 1.497	- / 2.577	- / 2.218	- / 2.217	Continuing	Continuing	
Subtotal: Installation	- / 5.392	- / 1.500	- / 3.622	- / 4.643	- / -	- / 4.643	- / 1.497	- / 2.577	- / 2.218	- / 2.217	Continuing	Continuing	
Total													
Total Cost (Procurement + Support + Installation)	129.899	4.048	9.323	8.525	0.000	8.525	4.347	4.392	4.505	4.413	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11										P-1 Line Item Number / Title: 3050 / Ship Communications Automation										Modification Number / Title: 1 / PQ065 Command and Control Official Information eXchange (C2OIX)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: PQ065 Command and Control Official Information eXchange (C2OIX)																															
Manufacturer Information																															
Manufacturer Name: General Dynamics															Manufacturer Location: Taunton, MA																
Administrative Leadtime (in Months): 2															Production Leadtime (in Months): 1																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates		Dec 2017				Feb 2019				Dec 2019																					
Delivery Dates		Jan 2018				Mar 2019				Jan 2020																					
Installation Information																															
Method of Implementation: Method:: Installation Name: Installation of Equipment - C2OIX Afloat																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		49 / 5.392		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		49 / 5.392							
FY 2018		- / -		11 / 1.500		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		11 / 1.500							
FY 2019		- / -		- / -		37 / 3.622		26 / 2.028		0 / 0.000		26 / 2.028		- / -		- / -		- / -		- / -		0 / 0.000		63 / 5.650							
FY 2020		- / -		- / -		- / -		34 / 2.615		0 / 0.000		34 / 2.615		- / -		- / -		- / -		- / -		0 / 0.000		34 / 2.615							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		10 / 1.497		- / -		- / -		- / -		0 / 0.000		10 / 1.497							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		11 / 2.577		- / -		- / -		0 / 0.000		11 / 2.577							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		10 / 2.218		- / -		0 / 0.000		10 / 2.218							
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		10 / 2.217		0 / 0.000		10 / 2.217							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		Continuing		Continuing							
Total		49 / 5.392		11 / 1.500		37 / 3.622		60 / 4.643		0 / 0.000		60 / 4.643		10 / 1.497		11 / 2.577		10 / 2.218		10 / 2.217		Continuing		Continuing							
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	47	2	3	3	3	2	5	15	17	-	24	19	17	-	3	4	3	-	3	3	5	-	3	3	4	-	3	3	4	Cont.	Cont.
Out	47	2	3	3	3	2	5	15	17	-	24	19	17	-	3	4	3	-	3	3	5	-	3	3	4	-	3	3	4	Cont.	Cont.
Method of Implementation (Organic): Consolidated Prior Year Requirements - Not Installed																															
																				Installation Quantity: 237											
Footnotes:																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	P-1 Line Item Number / Title: 3050 / Ship Communications Automation	Modification Number / Title: 1 / PQ065 Command and Control Official Information eXchange (C2OIX)
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
⁽⁵⁾ FY20-FY24 fluctuation in installation costs is due to cost decrease when C2OIX installations are combined with CANES installations. ⁽⁶⁾ C2OIX budgets DSA when installations are not combined with CANES. CANES budgets for DSA costs for combined C2OIX / CANES installations. In FY19-20 the majority of installations are C2OIX only installations resulting in an increased DSA budget requirement.		

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11					P-1 Line Item Number / Title: 3050 / Ship Communications Automation					Modification Number / Title: 2 / PQ069 Automated Digital Network System (ADNS) - Afloat		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	86.397	49.436	63.408	65.943	0.000	65.943	63.582	55.379	59.577	57.332	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	86.397	49.436	63.408	65.943	0.000	65.943	63.582	55.379	59.577	57.332	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	86.397	49.436	63.408	65.943	0.000	65.943	63.582	55.379	59.577	57.332	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: ADNS is the gateway to the tactical Wide Area Network (WAN) afloat for Internet Protocol (IP) network operations, supporting information dissemination and external connectivity. ADNS allows services and applications to interconnect to the Defense Information Systems Network (DISN) ashore via multiple Radio Frequency (RF) resources and pier connectivity. [Automated Digital Network System (ADNS) - Afloat- INC III] ADNS is the gateway to tactical Wide Area Network (WAN) afloat for Internet Protocol (IP) network operations, supporting information dissemination and external connectivity. ADNS provides the only Quality and Class of Service (QoS/CoS) routing for Multi-Service Voice, Video, and Data domains across available Radio Frequency (RF) paths.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11					P-1 Line Item Number / Title: 3050 / Ship Communications Automation					Modification Number / Title: 2 / PQ069 Automated Digital Network System (ADNS) - Afloat			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: [No Model Specified]				Modification Type: TBD				Related RDT&E PEs: 0204163N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: PQ069 Automated Digital Network System (ADNS) - Afloat													
B Kits													
Recurring													
1.1.1) Automated Digital Network System (ADNS) - Afloat- INC III - NonOrganic ⁽⁷⁾	67 / 50.667	32 / 30.448	33 / 35.510	34 / 34.437	- / -	34 / 34.437	35 / 32.821	31 / 26.240	31 / 31.650	30 / 30.404	Continuing	Continuing	
1.1.2) ADNS Tech Insertions - NonOrganic ⁽⁸⁾	48 / 6.733	29 / 5.800	49 / 8.800	57 / 8.550	- / -	57 / 8.550	60 / 6.000	47 / 4.700	42 / 4.200	46 / 4.600	Continuing	Continuing	
Subtotal: Recurring	- / 57.400	- / 36.248	- / 44.310	- / 42.987	- / -	- / 42.987	- / 38.821	- / 30.940	- / 35.850	- / 35.004	Continuing	Continuing	
Subtotal: PQ069 Automated Digital Network System (ADNS) - Afloat	115 / 57.400	61 / 36.248	82 / 44.310	91 / 42.987	- / -	91 / 42.987	95 / 38.821	78 / 30.940	73 / 35.850	76 / 35.004	Continuing	Continuing	
Subtotal: Procurement, All Modification Items	- / 57.400	- / 36.248	- / 44.310	- / 42.987	- / -	- / 42.987	- / 38.821	- / 30.940	- / 35.850	- / 35.004	Continuing	Continuing	
Support (All Modification Items)													
2.1) ADNS - Production Support	- / 2.500	- / 1.300	- / 1.900	- / 1.734	- / -	- / 1.734	- / 1.580	- / 1.488	- / 1.540	- / 1.539	Continuing	Continuing	
2.2) ADNS - DSA ⁽⁹⁾	- / 3.556	- / 1.352	- / 1.464	- / 3.098	- / -	- / 3.098	- / 3.100	- / 3.483	- / 2.599	- / 2.892	Continuing	Continuing	
Subtotal: Support	- / 6.056	- / 2.652	- / 3.364	- / 4.832	- / -	- / 4.832	- / 4.680	- / 4.971	- / 4.139	- / 4.431	Continuing	Continuing	
Installation													
Modification Item 1 of 1: PQ069 Automated Digital Network System (ADNS) - Afloat	- / 22.941	- / 10.536	- / 15.734	- / 18.124	- / 0.000	- / 18.124	- / 20.081	- / 19.468	- / 19.588	- / 17.897	Continuing	Continuing	
Subtotal: Installation	- / 22.941	- / 10.536	- / 15.734	- / 18.124	- / -	- / 18.124	- / 20.081	- / 19.468	- / 19.588	- / 17.897	Continuing	Continuing	
Total													
Total Cost (Procurement + Support + Installation)	86.397	49.436	63.408	65.943	0.000	65.943	63.582	55.379	59.577	57.332	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11				P-1 Line Item Number / Title: 3050 / Ship Communications Automation				Modification Number / Title: 2 / PQ069 Automated Digital Network System (ADNS) - Afloat				
ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Modification Item 1 of 1: PQ069 Automated Digital Network System (ADNS) - Afloat												
Manufacturer Information												
Manufacturer Name: SSC PAC-- San Diego, CA						Manufacturer Location: San Diego, CA						
Administrative Leadtime <i>(in Months)</i> : 1						Production Leadtime <i>(in Months)</i> : 1						
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates	Dec 2017	Nov 2018	Nov 2019									
Delivery Dates	Feb 2018	Dec 2018	Dec 2019									
Manufacturer Name: VARIOUS ⁽¹⁰⁾						Manufacturer Location: VARIOUS						
Administrative Leadtime <i>(in Months)</i> : 1						Production Leadtime <i>(in Months)</i> : 7						
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates	Dec 2017	Nov 2018	Nov 2019									
Delivery Dates	Jul 2018	Jun 2019	Jun 2020									
Installation Information												
Method of Implementation: [none specified]:: Installation Name: Automated Digital Network System (ADNS) - Afloat- INC III												
Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>
Prior Years	48 / 20.061	19 / 8.680	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	67 / 28.741
FY 2018	- / -	- / -	32 / 12.654	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	32 / 12.654
FY 2019	- / -	- / -	- / -	33 / 14.362	0 / 0.000	33 / 14.362	- / -	- / -	- / -	- / -	0 / 0.000	33 / 14.362
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	34 / 16.061	- / -	- / -	- / -	0 / 0.000	34 / 16.061
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	35 / 16.272	- / -	- / -	0 / 0.000	35 / 16.272
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	31 / 16.690	- / -	0 / 0.000	31 / 16.690
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	31 / 14.677	0 / 0.000	31 / 14.677
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	48 / 20.061	19 / 8.680	32 / 12.654	33 / 14.362	0 / 0.000	33 / 14.362	34 / 16.061	35 / 16.272	31 / 16.690	31 / 14.677	Continuing	Continuing

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019									
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11					P-1 Line Item Number / Title: 3050 / Ship Communications Automation					Modification Number / Title: 2 / PQ069 Automated Digital Network System (ADNS) - Afloat									

ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:									

Modification Item 1 of 1: PQ069 Automated Digital Network System (ADNS) - Afloat																													

Installation Information																													

Method of Implementation: [none specified]:: Installation Name: Automated Digital Network System (ADNS) - Afloat- INC III																													

Installation Schedule																													

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
In	48	6	6	5	2	7	10	9	6	9	11	3	10	8	12	11	3	7	10	10	8	5	14	6	6	7	9	10	5	Cont.	Cont.
Out	48	1	5	8	3	2	7	10	9	12	7	8	2	13	4	14	10	3	8	9	11	8	4	14	7	7	7	9	10	Cont.	Cont.

Method of Implementation: [none specified]:: Installation Name: ADNS Tech Insertions																													

Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	48 / 2.880	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	48 / 2.880
FY 2018	- / -	29 / 1.856	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	29 / 1.856
FY 2019	- / -	- / -	49 / 3.080	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	49 / 3.080
FY 2020	- / -	- / -	- / -	57 / 3.762	0 / 0.000	57 / 3.762	- / -	- / -	- / -	- / -	0 / 0.000	57 / 3.762
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	60 / 4.020	- / -	- / -	- / -	0 / 0.000	60 / 4.020
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	47 / 3.196	- / -	- / -	0 / 0.000	47 / 3.196
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	42 / 2.898	- / -	0 / 0.000	42 / 2.898
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	46 / 3.220	0 / 0.000	46 / 3.220
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	48 / 2.880	29 / 1.856	49 / 3.080	57 / 3.762	0 / 0.000	57 / 3.762	60 / 4.020	47 / 3.196	42 / 2.898	46 / 3.220	Continuing	Continuing

Installation Schedule																													

	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
In	48	6	9	3	11	11	12	13	13	12	13	16	16	11	16	17	16	10	12	8	17	6	15	8	13	7	14	14	11	Cont.	Cont.
Out	48	1	5	9	5	13	13	9	13	10	12	14	17	15	14	18	14	17	8	10	11	15	11	11	10	13	5	14	13	Cont.	Cont.

Footnotes: (7) ADNS INC III Afloat procurement cost range: \$.5M - \$1.5M; installation cost range: \$.3M - \$1.0M. Average unit cost fluctuations for procurement and installation are due to varying system configurations required for surface and submarine platforms. INC III units require 3 months integration, assembly, testing and shipping after delivery, prior to installation start. Installs do not begin until 10 months after procurement contract award (7 months production lead time + 3 months integration).																													

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	P-1 Line Item Number / Title: 3050 / Ship Communications Automation	Modification Number / Title: 2 / PQ069 Automated Digital Network System (ADNS) - Afloat
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
⁽⁸⁾ FY20: Technical Insertions (TI) will be fielded to include hardware and software baseline updates to Afloat units required to maximize C4ISR capability and interface functionality between ADNS and applicable Satellite Communications (SATCOM) systems such as Navy Multi-Band Terminal(NMT), Global Broadcast System(GBS) and Battle Force Tactical Network (BFTN). Tech Insertion unit cost includes production engineering/integration requirements associated with the initial fielding of tech insertion capability. TI(s) require (1) month administrative lead time and (1) month production lead time. ⁽⁹⁾ DSA costs per unit fluctuates based on the type of platform (submarine vs CVN) and the type of system (Backfit vs new install) and can vary between \$15K - \$200K. ⁽¹⁰⁾ ADNS: Full Production Contract has 4 possible vendors on MAC award: SERCO, Inc, SAIC, DRS Laurel Technologies, and Leidos. Contract will be used for Increment III production units.		

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11					P-1 Line Item Number / Title: 3050 / Ship Communications Automation					Modification Number / Title: 3 / PQ070 Shore Tactical Assured Command and Control (STACC) (formerly Tactical Switching)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	308.366	29.012	29.456	50.607	0.000	50.607	41.560	21.625	19.200	17.652	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	308.366	29.012	29.456	50.607	0.000	50.607	41.560	21.625	19.200	17.652	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	308.366	29.012	29.456	50.607	0.000	50.607	41.560	21.625	19.200	17.652	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Shore Tactical Assured Command and Control (STACC) is the Navy's Program of Record to consolidate and modernize the ashore network infrastructure supporting afloat forces and shore commands assigned with tactical, operational, and strategic missions. STACC directly supports afloat legacy networks (e.g., ISNS), CANES and ADNS and all associated systems installed on those networks by providing direct interfaces to the Defense Information Systems Network (DISN), thus enabling interoperability within Navy tactical forces and with combatant commands, joint forces, coalition/mission partners, and other Services/Agencies. STACC fields capability at five regions, covering over 40 facilities in both CONUS and OCONUS locations, to include Naval Computer and Telecommunications Area Master Stations (NCTAMS), Naval Computer and Telecommunications Stations (NCTS), Maritime Operations Centers (MOCs), Fleet Network Operations Centers, Satellite Gateways, and Broadcast Control Authorities (BCAs). STACC supports over 410 surface and subsurface platforms. The STACC portfolio includes transport services, core network services, and network monitoring and management and is comprised of hardware, software, computing/processing, network, and storage technologies. These services span several security classification levels to include unclassified, secret, Combined Enterprise Regional Information Exchange System - Maritime (CENTRIXS-M), Sensitive Compartmented Information (SCI), and Virtual Secure Enclave (VSE). VSE is a resilient network designed to survive in a highly contested cyber environment. VSE provides resilient networking for command and control applications at the operational level of war in denied environment scenarios. The network management service provides users with access to near real time situational awareness of the health and status of the network. STACC enables operators the ability to understand what is and is not normal on the network and provides a pre-emptive cyberspace capability to fight and win in a cyber-denied information environment. The STACC's network monitoring and management system is also a critical and foundational data set provider to the Navy's Cyber Situational Awareness (NCSA) program/system which performs further processing, correlation, and impact assessment. The STACC network core service offerings provide afloat platforms reach back services such as email, chat, Domain Name System (DNS), patching and C2 application hosting services for programs that need to be in a tactical environment. The hosting services include Infrastructure as a Service (IaaS) and Platform as a Service (PaaS) offerings. [MILCON P913:Shore Based Enterprise Network Enhancements] Shore Tactical Assured Command and Control (STACC) new suite of systems for the outfitting of the MILCON P-913 NCTAMS LANT new communication facility. The new NCTAMS LANT building will provide a secure, efficient, sustainable and adaptable communications facility to support all telecommunications requirements within the Atlantic Area of Operations.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11				P-1 Line Item Number / Title: 3050 / Ship Communications Automation				Modification Number / Title: 3 / PQ070 Shore Tactical Assured Command and Control (STACC) (formerly Tactical Switching)				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Models of Systems Affected: [No Model Specified]			Modification Type: TBD					Related RDT&E PEs:				
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Procurement												
Modification Item 1 of 1: PQ070 Shore Tactical Assured Command and Control (STACC) (formerly Tactical Switching)												
B Kits												
Recurring												
1.1.1) Consolidated Prior Year Requirements - Organic	10 / 35.760	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 35.760
1.1.2) Equipment - STACC - NonOrganic ⁽¹¹⁾	55 / 215.675	5 / 22.260	5 / 20.352	5 / 33.507	- / -	5 / 33.507	5 / 31.288	5 / 17.902	5 / 16.237	5 / 15.050	Continuing	Continuing
1.1.3) MILCON P913:Shore Based Enterprise Network Enhancements - NonOrganic ⁽¹²⁾	- / -	- / -	1 / 5.985	1 / 5.504	- / -	1 / 5.504	- / -	- / -	- / -	- / -	- / -	2 / 11.489
Subtotal: Recurring	- / 251.435	- / 22.260	- / 26.337	- / 39.011	- / -	- / 39.011	- / 31.288	- / 17.902	- / 16.237	- / 15.050	Continuing	Continuing
Subtotal: PQ070 Shore Tactical Assured Command and Control (STACC) (formerly Tactical Switching)	65 / 251.435	5 / 22.260	6 / 26.337	6 / 39.011	- / -	6 / 39.011	5 / 31.288	5 / 17.902	5 / 16.237	5 / 15.050	Continuing	Continuing
Subtotal: Procurement, All Modification Items	- / 251.435	- / 22.260	- / 26.337	- / 39.011	- / -	- / 39.011	- / 31.288	- / 17.902	- / 16.237	- / 15.050	Continuing	Continuing
Support (All Modification Items)												
2.1) STACC Production Support	- / 20.038	- / 1.500	- / 0.701	- / 2.097	- / -	- / 2.097	- / 1.774	- / 0.684	- / 0.663	- / 0.692	Continuing	Continuing
2.2) MILCON P913: Production	- / -	- / -	- / 0.315	- / 0.321	- / -	- / 0.321	- / 0.328	- / -	- / -	- / -	- / -	- / 0.964
Subtotal: Support	- / 20.038	- / 1.500	- / 1.016	- / 2.418	- / -	- / 2.418	- / 2.102	- / 0.684	- / 0.663	- / 0.692	Continuing	Continuing
Installation												
Modification Item 1 of 1: PQ070 Shore Tactical Assured Command and Control (STACC) (formerly Tactical Switching)	- / 36.893	- / 5.252	- / 2.103	- / 9.178	- / 0.000	- / 9.178	- / 8.170	- / 3.039	- / 2.300	- / 1.910	Continuing	Continuing
Subtotal: Installation	- / 36.893	- / 5.252	- / 2.103	- / 9.178	- / -	- / 9.178	- / 8.170	- / 3.039	- / 2.300	- / 1.910	Continuing	Continuing
Total												
Total Cost (Procurement + Support + Installation)	308.366	29.012	29.456	50.607	0.000	50.607	41.560	21.625	19.200	17.652	Continuing	Continuing

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Exhibit P-3a, Individual Modification: PB 2020 Navy							Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11				P-1 Line Item Number / Title: 3050 / Ship Communications Automation				Modification Number / Title: 3 / PQ070 Shore Tactical Assured Command and Control (STACC) (formerly Tactical Switching)				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Modification Item 1 of 1: PQ070 Shore Tactical Assured Command and Control (STACC) (formerly Tactical Switching)												
Manufacturer Information												
Manufacturer Name: Georgia Technical Research Institute (GTRI)							Manufacturer Location: Atlanta, GA					
Administrative Leadtime (<i>in Months</i>): 5							Production Leadtime (<i>in Months</i>): 2					
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates	Mar 2018	Mar 2019	Mar 2020									
Delivery Dates	May 2018	May 2019	May 2020									
Manufacturer Name: Georgia Technical Research Institute (GTRI) (MILCON P-913) ⁽¹³⁾							Manufacturer Location: Atlanta, GA					
Administrative Leadtime (<i>in Months</i>): 5							Production Leadtime (<i>in Months</i>): 5					
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates		Mar 2019	Mar 2020									
Delivery Dates		Aug 2019	Aug 2020									
Installation Information												
Method of Implementation: Method:: Installation Name: PQ070 Shore Tactical Assured Command and Control (STACC)												
Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>
Prior Years	55 / 36.893	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	55 / 36.893
FY 2018	- / -	5 / 5.252	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	5 / 5.252
FY 2019	- / -	- / -	5 / 2.103	1 / 4.300	0 / 0.000	1 / 4.300	- / -	- / -	- / -	- / -	0 / 0.000	6 / 6.403
FY 2020	- / -	- / -	- / -	5 / 4.878	0 / 0.000	5 / 4.878	1 / 3.684	- / -	- / -	- / -	0 / 0.000	6 / 8.562
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	5 / 4.486	- / -	- / -	- / -	0 / 0.000	5 / 4.486
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 3.039	- / -	- / -	0 / 0.000	5 / 3.039
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 2.300	- / -	0 / 0.000	5 / 2.300
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 1.910	0 / 0.000	5 / 1.910
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	55 / 36.893	5 / 5.252	5 / 2.103	6 / 9.178	0 / 0.000	6 / 9.178	6 / 8.170	5 / 3.039	5 / 2.300	5 / 1.910	Continuing	Continuing

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019																													
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11		P-1 Line Item Number / Title: 3050 / Ship Communications Automation																													
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:																													
Modification Item 1 of 1: PQ070 Shore Tactical Assured Command and Control (STACC) (formerly Tactical Switching)																															
Installation Information																															
Method of Implementation: Method:: Installation Name: PQ070 Shore Tactical Assured Command and Control (STACC)																															
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	55	-	-	5	-	-	-	5	-	-	-	6	-	-	1	5	-	-	-	5	-	-	-	5	-	-	-	5	-	Cont.	Cont.
Out	50	5	-	-	5	-	-	-	5	-	-	-	5	1	-	-	6	-	-	-	5	-	-	-	5	-	-	-	5	Cont.	Cont.
Method of Implementation (Organic): Consolidated Prior Year Requirements - Not Installed																															
Installation Quantity: 10																															
Footnotes: (11) The increase from FY19 to FY20 allows for Virtual Secure Enclave (VSE) capability expansion, in support of the Resilient Command and Control (RC2) initiative. The capability is being expanded across 26 new sites in the Pacific and Atlantic Regions in FY20-FY22. STACC capability is currently at 42 sites across the 5 major shore regions. This requirement will add STACC VSE RC2 capability to (3) three Application Service Points (ASPs) and 26 Commander Task Force (CTFs) sites. Funding will procure, engineer, integrate, and install hardware and software to expand VSE user capacity 1,250 to 3,500 users. Expansion supports the hosting of Critical C2 applications for the additional ASPs and CTF Sites will support operational plans for users in highly contested environments.// STACC's unit and installation costs vary each year depending on what modernization must be done to maintain the cyber resiliency of the network and what site(s) within each region is included in the modernization effort. Factors that relate to the cost include whether or not the modernization addresses increased bandwidth, risk vulnerabilities, and/or increased survivability and reliability. Installations at various sites could be as simple as a server replacement or as complex as a complete network refresh.// There will be over 1,000 different STACC devices fielded at 68 sites across the five major shore regions. Installations can include routers, switches, servers, workstations, multi-level thin clients, firewalls across the five security enclaves.// STACC quantities represent 5 major shore regions: 1) Eastern Pacific supporting Commander Pacific Fleet and Commander Third Fleet (Naval Computer & Telecommunications Area Master Station Pacific (NCTAMS PAC) and Naval Computer & Telecommunications Station San Diego (NCTS San Diego); 2) Western Pacific supporting Commander Seventh Fleet; 3) Indian Ocean supporting Commander Fifth (NCTS BAHRAIN); 4) European supporting Commander Sixth Fleet (NCTS NAPLES); and 5) Atlantic supporting US Fleet Forces Command, Commander Tenth Fleet and Commander Fourth Fleet (NCTAMS LANT); and Joint and Coalition Partners within each region.// Cost Element 1.1.2 was formerly identified as Equipment Increment II, but the items procured are the same.// (12) The various STACC systems, which make up the network, will be procured and installed in two phases to align with the P-913 MILCON transition schedule. (13) Manufacturer for MILCON P-913 STACC equipment. Integration efforts required prior to installation																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11				P-1 Line Item Number / Title: 3050 / Ship Communications Automation						Modification Number / Title: 5 / PQ020 Piers / Enterprise Pier Connectivity Architecture (EPCA)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	0.000	0.000	9.886	0.000	9.886	10.032	10.198	10.395	10.592	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	0.000	0.000	9.886	0.000	9.886	10.032	10.198	10.395	10.592	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	0.000	0.000	9.886	0.000	9.886	10.032	10.198	10.395	10.592	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Piers/EPCA quantities represent the number of operational US NAVY pierside locations that will be "touched" in some capacity each fiscal year. Unit cost fluctuations are a direct result of the various sizes of each location. Location size determines the cost and amount of equipment that needs to be procured and installed. Beginning in FY20, Piers/EPCA transitions from LI 8164 Navy/Marine Corps Intranet (NMCI) OCONUS (OCONUS Piers Technical Refresh) to LI 3050 Ship Communications Automation.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11				P-1 Line Item Number / Title: 3050 / Ship Communications Automation				Modification Number / Title: 5 / PQ020 Piers / Enterprise Pier Connectivity Architecture (EPCA)					
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: [No Model Specified]				Modification Type: TBD				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: PQ020 Piers / Enterprise Pier Connectivity Architecture (EPCA)													
A Kits													
Recurring													
1.1.1) Global Piers - Ashore - NonOrganic													
Subtotal: Recurring													
Subtotal: PQ020 Piers / Enterprise Pier Connectivity Architecture (EPCA)													
Subtotal: Procurement, All Modification Items													
Support (All Modification Items)													
2.1) Piers - Production Support													
Subtotal: Support													
Installation													
Modification Item 1 of 1: PQ020 Piers / Enterprise Pier Connectivity Architecture (EPCA)													
Subtotal: Installation													
Total													
Total Cost (Procurement + Support + Installation)													

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11										P-1 Line Item Number / Title: 3050 / Ship Communications Automation										Modification Number / Title: 5 / PQ020 Piers / Enterprise Pier Connectivity Architecture (EPCA)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: PQ020 Piers / Enterprise Pier Connectivity Architecture (EPCA)																															
Manufacturer Information																															
Manufacturer Name: SSC PAC															Manufacturer Location: San Diego, CA																
Administrative Leadtime <i>(in Months)</i> : 2															Production Leadtime <i>(in Months)</i> : 4																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates										Dec 2019																					
Delivery Dates										Apr 2020																					
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: Global Piers - Ashore																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2020		- / -		- / -		- / -		3 / 2.700		0 / 0.000		3 / 2.700		- / -		- / -		- / -		- / -		- / -		0 / 0.000		3 / 2.700					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		3 / 2.750		- / -		- / -		- / -		- / -		0 / 0.000		3 / 2.750					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		3 / 2.580		- / -		- / -		- / -		0 / 0.000		3 / 2.580					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		4 / 2.760		- / -		- / -		0 / 0.000		4 / 2.760					
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		5 / 3.300		0 / 0.000		5 / 3.300		5 / 3.300					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		Continuing		Continuing					
Total		- / -		- / -		- / -		3 / 2.700		0 / 0.000		3 / 2.700		3 / 2.750		3 / 2.580		4 / 2.760		5 / 3.300		Continuing		Continuing		Continuing					
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	3	-	-	-	3	-	-	-	4	-	-	-	5	-	Cont.	Cont.
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	-	-	1	2	-	-	1	2	-	-	2	2	-	-	Cont.	Cont.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 11: Shipboard Communications							P-1 Line Item Number / Title: 3057 / Communications Items under \$5M					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: 0604280N				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	142.089	16.280	39.081	35.093	0.000	35.093	40.398	42.410	31.530	32.112	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	142.089	16.280	39.081	35.093	0.000	35.093	40.398	42.410	31.530	32.112	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	142.089	16.280	39.081	35.093	0.000	35.093	40.398	42.410	31.530	32.112	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	0.010	-	0.010	0.020	-	0.012	-	-	0.042
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

[P5 / NU019 EPLRS-DR/EMUT]: Enhanced Position Location Reporting System - Data Radio (EPLRS-DR)/Enhanced Man-Pack UHF Tactical (EMUT) is a Blue in Support of Green (BISOG) program that provides secure Anti-Jam (AJ), Ultra High Frequency (UHF) (420-450 MHz) and Line of Sight (LOS) data communications in support of amphibious operations at throughputs of up to 54Kbps. EPLRS-DR provides embedded Position Location Information (PLI) between shipboard networks and the shore-based Marine Tactical Data Network (TDN) and the Army Tactical Internet (TI). To meet a National Security Agency (NSA) mandate, KOK13 cryptographic equipment was replaced with KOK23/CKG cryptographic equipment. EPLRs and EMUT efforts will include antenna upgrades. EPLRS-DR will also include Landing Force Iridium infrastructure.

[P5 / NU790 Navy Expeditionary C4I]: Navy Expeditionary Command, Control, Communications, Computers, & Intelligence (C4I): Provides procurement and integration for outfitting Table of Allowance (TOA) buy lists within the Expeditionary forces. Ensures common C4I solutions are being coordinated, tracked, procured and integrated across Navy Expeditionary Combat Command (NECC) forces. The increase in funding reflects establishment, approval and funding of NSW service-common Table Of Allowance to begin correcting shortfalls and bring NSW forces into alignment with required outfitting standards in accordance with SOCOM-USN Memorandum of Agreement.

[P5 / NU239 PORT NSW]: NU239 - PORT NSW: The FY20 budget request has been combined with NU790 to streamline acquisition efforts.

Portable Radio/Naval Special Warfare (PORT NSW) tactical radio: PORT NSW procures hand held and man pack/vehicular radios for NSW. Procurement needed to support Force Protection operations, especially with joint forces. NSW operational elements (SEAL platoons and Combatant Craft Detachments) rely on tactical communications and electronics equipment to accomplish all missions assigned in support of the Joint and Fleet commanders. Navy resourced tactical communications equipment is considered mission essential and will be employed by individual SEAL personnel and NSW combat elements in man pack configurations as well as onboard tactical vehicles and NSW combatant craft in tactical operations centers in fixed mount configurations.

[P5 / ESB SOF (BSO 24)]: Expeditionary Mobile Base Special Operations Forces (ESB SOF) - The SOF component requires an ESB (a type of boat) to have the capability for planning and conducting Intelligence, Surveillance, and Reconnaissance (ISR) for Boat Assault Force (BAF) and Helicopter Assault Force (HAF) missions. These funds procure and install equipment to support SOF communications, consisting of a radio backbone infrastructure and increasing the bandwidth to support SOF missions. These additional capabilities will be back fitted during ESB 4's Post Shakedown Availability.

[P3A / Battle Force Tactical Network]: Battle Force Tactical Network (BFTN): This system is formally specified by both Fleet Commanders as a threshold capability for global maritime command control and communications in a Distributed Maritime Environment to execute current warfighting plans. BFTN enables delivery of Internet Protocol (IP) based collaboration services over legacy High Frequency (HF) assets.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 11: Shipboard Communications		P-1 Line Item Number / Title: 3057 / Communications Items under \$5M
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0604280N
Line Item MDAP/MAIS Code: N/A The system provides an interoperable, low data rate, multi-node, Beyond-Line-of-Sight (BLOS) tactical edge networking capability using existing HF radio infrastructure. BFTN provides data path backbone for both airborne and afloat forces and increased data exchange with Allied Coalition forces. BFTN provides National, Allied, and Coalition maritime units with a medium band IP-based, tactical ship to ship at-sea networking capability, using legacy half-duplex Ultra High Frequency (UHF) Line-of-Sight and provides the only Allied Coalition HF/UHF Communications in a satellite denied/degraded situation. BFTN will provide a bridge between legacy radio systems and future emerging wideband networking technologies.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 11: Shipboard Communications						P-1 Line Item Number / Title: 3057 / Communications Items under \$5M				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: 0604280N				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / Communications Items under \$5M	P-5a			- / 124.992	- / 15.202	- / 29.358	- / 20.532	- / 0.000	- / 20.532
P-3a	1 / Battle Force Tactical Network (TBD)				- / 17.097	- / 1.078	- / 9.723	- / 14.561	- / 0.000	- / 14.561
P-40	Total Gross/Weapon System Cost				- / 142.089	- / 16.280	- / 39.081	- / 35.093	- / 0.000	- / 35.093
Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / Communications Items under \$5M	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / Battle Force Tactical Network (TBD)				- / 20.290	- / 21.405	- / 9.887	- / 10.085	Continuing	Continuing
P-40	Total Gross/Weapon System Cost				- / 40.398	- / 42.410	- / 31.530	- / 32.112	Continuing	Continuing
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										
Justification: The FY2020 funding request was reduced by \$0.577 million to account for the availability of prior year execution balances. NU239 - PORT NSW: The FY20 budget request has been combined with NU790 to streamline acquisition efforts. NU295 - Battle Force Tactical Network (BFTN): FY20 OPN funds the procurement of twelve (12) BFTN systems required to meet emerging communications threat environment. In addition, FY20 funds engineering changes to strengthen cyber security posture by implementing WIN 10 upgrades on previously fielded systems. NU019 - EPLRS-DR/EMUT: FY20 funding procures and installs 8 Enhanced Position Location Reporting System - Data Radio (EPLRS-DR)/Enhanced Man-Pack UHF Tactical (EMUT). A complete unit consists of one AN/VRC-114(V)2 radio mount, one RF-5051PS power supply, and associated equipment. The quantity procured in any given year is determined by the Fleet's demand signal and platform availability. NU385 - FY20 funding is for the installation of the remaining components to provide Special Operations Forces (SOF) capability on Expeditionary Mobile Base (ESB) 4. These funds will procure one Commercial Broadband Satellite Program (CBSP), one UHF SATCOM antenna, two HF antennas, one UHF/VHF System, two VHF Lo Antenna, two VHF Hi antennas and two UHF antennas. The cost delta between ESB 3 and ESB 4 are for the refurbished CBSP asset (ESB 3) vs new system (ESB 4) and the difference in labor rates (East Coast vs West Coast) for the Post Shakedown Availability (PSA) Efforts. NU790 - Navy Expeditionary FY20 funding is for procurement of service-common support communications and Automated Data Processing (ADP) equipment in the approved Table of Allowances (TOA) equipment list. This equipment directly supports forward deployed special operations forces with real-time, actionable, time-sensitive transmission and reception of mission orders, intelligence, action and engagement status reporting, imaging, and target specification simultaneously in multiple theaters throughout the world. Investment in communications equipment, to include portable hand held radios, man pack radios, secure satellite telephones, UAV communications devices, ruggedized laptops, and encryption-decryption devices essential to the readiness and battlefield effectiveness of Naval Special Warfare (NSW) forces in winning the current fight against ISIS and other extremist elements. Additionally, it ensures the warfighter is optimally equipped with cutting edge communications equipment for the future fight and in compliance with crypto modernization directives found in CJCSI 6510.02E.										

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 11: Shipboard Communications		P-1 Line Item Number / Title: 3057 / Communications Items under \$5M
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0604280N
Line Item MDAP/MAIS Code: N/A		
Funding increase for FY20 due to increased requirements in support of Expeditionary Mine Countermeasures (ExMCM) equipment procurements, production and fielding efforts.		

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11						P-1 Line Item Number / Title: 3057 / Communications Items under \$5M						Item Number / Title [DODIC]: 1 / Communications Items under \$5M						
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Resource Summary				Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total				
Procurement Quantity <i>(Units in Each)</i>				-		-		-		-		-		-				
Gross/Weapon System Cost <i>(\$ in Millions)</i>				124.992		15.202		29.358		20.532		0.000		20.532				
Less PY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Net Procurement (P-1) <i>(\$ in Millions)</i>				124.992		15.202		29.358		20.532		0.000		20.532				
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Total Obligation Authority <i>(\$ in Millions)</i>				124.992		15.202		29.358		20.532		0.000		20.532				
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																		
Initial Spares <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>				-		-		-		-		-		-				
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Hardware - NU019 EPLRS-DR/EMUT Cost																		
Non Recurring Cost																		
1.1.1) EPLRS-DR Procurement ^{(†) (1)}	58.449	49	2.864	143.125	8	1.145	142.625	8	1.141	145.500	8	1.164	-	-	0.000	145.500	8	1.164
Subtotal: Non Recurring Cost	-	-	2.864	-	-	1.145	-	-	1.141	-	-	1.164	-	-	0.000	-	-	1.164
Subtotal: Hardware - NU019 EPLRS-DR/EMUT Cost	-	-	2.864	-	-	1.145	-	-	1.141	-	-	1.164	-	-	0.000	-	-	1.164
Hardware - NU790 Navy Expeditionary C4I Cost																		
Recurring Cost																		
3.1.1) Navy Expeditionary C4I Procurement ⁽²⁾	265.500	12	3.186	-	-	6.790	-	-	9.783	-	-	16.018	-	-	0.000	-	-	16.018
Subtotal: Recurring Cost	-	-	3.186	-	-	6.790	-	-	9.783	-	-	16.018	-	-	0.000	-	-	16.018
Subtotal: Hardware - NU790 Navy Expeditionary C4I Cost	-	-	3.186	-	-	6.790	-	-	9.783	-	-	16.018	-	-	0.000	-	-	16.018
Hardware - NU239 PORT NSW Cost																		
Recurring Cost																		
4.1.1) PORT NSW Hand Held Procurement ^{(†) (3)}	15.423	1,420	21.901	15.728	136	2.139	15.714	266	4.180	-	-	0.000	-	-	0.000	-	-	0.000
4.1.2) PORT NSW Man Pack Procurement ^(†)	35.451	1,132	40.131	38.082	61	2.323	38.849	106	4.118	-	-	0.000	-	-	0.000	-	-	0.000

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11						P-1 Line Item Number / Title: 3057 / Communications Items under \$5M						Item Number / Title [DODIC]: 1 / Communications Items under \$5M						
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Subtotal: Recurring Cost	-	-	62.032	-	-	4.462	-	-	8.298	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Hardware - NU239 PORT NSW Cost	-	-	62.032	-	-	4.462	-	-	8.298	-	-	0.000	-	-	0.000	-	-	0.000
Hardware - NU385 ESB SOF (BSO 24) Cost																		
Recurring Cost																		
5.1.1) ESB SOF (BSO 24) ⁽⁴⁾	-	-	4.006	-	-	0.539	-	-	2.790	-	-	0.000	-	-	0.000	-	-	0.000
5.1.2) ESB SOF Install ⁽⁵⁾	-	-	4.701	-	-	0.000	-	-	5.148	-	-	1.326	-	-	0.000	-	-	1.326
Subtotal: Recurring Cost	-	-	8.707	-	-	0.539	-	-	7.938	-	-	1.326	-	-	0.000	-	-	1.326
Subtotal: Hardware - NU385 ESB SOF (BSO 24) Cost	-	-	8.707	-	-	0.539	-	-	7.938	-	-	1.326	-	-	0.000	-	-	1.326
Support - NU777 Installations FMP Cost																		
6.1) EPLRS-DR FMP	-	-	0.744	-	-	1.498	-	-	1.526	-	-	1.600	-	-	0.000	-	-	1.600
Subtotal: Support - NU777 Installations FMP Cost	-	-	0.744	-	-	1.498	-	-	1.526	-	-	1.600	-	-	0.000	-	-	1.600
Support - NU777 DSA Cost																		
7.1) EPLRS-DR DSA	-	-	0.294	-	-	0.496	-	-	0.475	-	-	0.374	-	-	0.000	-	-	0.374
Subtotal: Support - NU777 DSA Cost	-	-	0.294	-	-	0.496	-	-	0.475	-	-	0.374	-	-	0.000	-	-	0.374
Support - NU555 Production Support Cost																		
8.1) EPLRS-DR Production Support	-	-	0.301	-	-	0.048	-	-	0.052	-	-	0.050	-	-	0.000	-	-	0.050
8.2) PORT NSW Production Support ⁽⁶⁾	-	-	3.339	-	-	0.224	-	-	0.145	-	-	0.000	-	-	0.000	-	-	0.000
8.4) Consolidated Prior Year Requirements ⁽⁷⁾	-	-	43.525	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Support - NU555 Production Support Cost	-	-	47.165	-	-	0.272	-	-	0.197	-	-	0.050	-	-	0.000	-	-	0.050
Gross/Weapon System Cost	-	-	124.992	-	-	15.202	-	-	29.358	-	-	20.532	-	-	0.000	-	-	20.532
(†) indicates the presence of a P-5a																		
Footnotes:																		

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Exhibit P-5, Cost Analysis: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	P-1 Line Item Number / Title: 3057 / Communications Items under \$5M	Item Number / Title [DODIC]: 1 / Communications Items under \$5M
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
(1) Funding in FY20 includes procurement and installation for Enhanced Position Location reporting System - Data Radio (EPLRS-DR), Enhanced Man-Pack UHF Tactical (EMUT) MUOS antennas, and Landing Force Iridium to meet Marine Embarked Units (MEU) to support HF/UHF communications between the Landing Force Operations Center (LFOC) and Marines ashore to ensure interoperability between the Navy and Marine Corps. The quantity procured and installed (in any given year) is determined by the fleet's demand signal and platform availability and leverages the ISEA to combine installs. (2) Quantities are not provided since thousands of various communications and Automated Data Processing equipment is being procured in support of correcting Table of Allowances (TOA) equipment shortfalls and bring NSW forces into alignment with required SOCOM and USN outfitting standards. Funding increase for FY20 due to additional requirements in support of procurements, engineering integration and fielding efforts for common-service communications and Automated Data Processing (ADP) equipment identified in the approved Table of Allowances (TOA) equipment list. This equipment directly supports forward deployed special operations forces with real-time, actionable, time-sensitive transmission and reception of mission orders, intelligence, action and engagement status reporting, imaging, and target specification simultaneously in multiple theaters throughout the world. Equipment provided is mission specific and can range from a portable hand held radio to a large scale communication system such as the Navy Enterprise Tactical Command and Control System. This funding provides Commercial Off the Shelf (COTS) Tactical Radio Communications, equipment for 5,000+ C4I Vehicle Integration efforts include integrating communication systems, tactical radio installation, family of computer systems as required by specific mission. Additionally, equipment to support Expeditionary Surveillance Command and Control, this can include basic generators and trailer platforms to high tech surveillance cameras. Communication equipment is also procured for small craft C4I Integration on 300+ boats. (3) NU239 - PORT NSW: The FY20 budget request has been combined with NU790 to streamline acquisition efforts. (4) Quantities are not provided since various equipment is being procured to provide Special Operations Forces (SOF) capability on Expeditionary Mobile Base (ESB) 4. Cost increase is to procure remaining SOF components to include several VHF and UHF antennas to be installed during the boats Post Shakedown Availability. (5) The installations costs are being broken out for transparency. The last time an installation occurred was in FY16. In FY 16 the installation cost (for ESB 3) were included in the recurring cost. (6) NU555 - PORT NSW Production Support: The FY20 budget request has been combined with NU790 to streamline acquisition efforts. (7) Consolidated prior years for PORT RAD - Hand Held Procurement, Hydra Procurement, NAVSEA HYDRA Requirement, DAMA IW Procurement, Hydra Installations FMP, HF SAR Installations FMP, and Navy Expeditionary C4I Production Support		

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11			P-1 Line Item Number / Title: 3057 / Communications Items under \$5M					Item Number / Title [DODIC]: 1 / Communications Items under \$5M				
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$ K)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) EPLRS-DR Procurement		2018	Harris Corporation / Rochester, NY	C / FFP	SPAWAR	Dec 2017	May 2018	8	143.125	Y		Jun 2017
1.1.1) EPLRS-DR Procurement		2019	Harris Corporation / Rochester, NY	C / FFP	SPAWAR	Dec 2018	May 2019	8	142.625	Y		Jun 2018
1.1.1) EPLRS-DR Procurement		2020	Harris Corporation / Rochester, NY	C / FFP	SPAWAR	Dec 2019	May 2020	8	145.500	Y		Jun 2019
4.1.1) PORT NSW Hand Held Procurement		2018	Harris Corporation / NY	C / FFP	SPAWAR	Dec 2017	May 2018	136	15.728	Y		
4.1.1) PORT NSW Hand Held Procurement		2019	Harris Corporation / NY	C / FFP	SPAWAR	Dec 2018	May 2019	266	15.714	Y		
4.1.2) PORT NSW Man Pack Procurement		2018	Harris Corporation / NY	C / FFP	SPAWAR	Dec 2017	May 2018	61	38.082	Y		
4.1.2) PORT NSW Man Pack Procurement		2019	Harris Corporation / NY	C / FFP	SPAWAR	Dec 2018	May 2019	106	38.849	Y		

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Exhibit P-3a, Individual Modification: PB 2020 Navy						Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11				P-1 Line Item Number / Title: 3057 / Communications Items under \$5M				Modification Number / Title: 1 / Battle Force Tactical Network			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	17.097	1.078	9.723	14.561	0.000	14.561	20.290	21.405	9.887	10.085	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	17.097	1.078	9.723	14.561	0.000	14.561	20.290	21.405	9.887	10.085	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	17.097	1.078	9.723	14.561	0.000	14.561	20.290	21.405	9.887	10.085	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

This system is formally specified by both Fleet Commanders as a threshold capability for global maritime command control and communications in a Distributed Maritime Environment to execute current warfighting plans. Battle Force Tactical Network (BFTN) is the Navy's near-term solution to Resilient Command and Control (RC2) communications in a satellite denied/degraded environment. Funding in FY2020 is for the procurement of twelve (12) Battle Force Tactical Network (BFTN) systems required to meet the emerging communications threat environment. In addition, funding in FY2020 is for engineering changes required to strengthen cyber security posture by implementing WIN 10 upgrades on previously fielded BFTN systems.

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11				P-1 Line Item Number / Title: 3057 / Communications Items under \$5M				Modification Number / Title: 1 / Battle Force Tactical Network					
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: [No Model Specified]			Modification Type: TBD					Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: Battle Force Tactical Network													
B Kits													
Recurring													
1.1.1) BFTN System Procurement - NonOrganic ⁽⁸⁾		24 / 5.047	- / -	18 / 4.455	12 / 3.029	- / -	12 / 3.029	34 / 8.756	23 / 6.049	3 / 0.801	24 / 6.535	Continuing	Continuing
1.1.2) BFTN Engineering Change Order - Organic		- / -	- / 1.078	- / 3.618	- / 3.802	- / -	- / 3.802	- / 3.798	- / -	- / -	- / -	- / -	- / 12.296
Subtotal: Recurring		- / 5.047	- / 1.078	- / 8.073	- / 6.831	- / -	- / 6.831	- / 12.554	- / 6.049	- / 0.801	- / 6.535	Continuing	Continuing
Subtotal: Battle Force Tactical Network		24 / 5.047	- / 1.078	18 / 8.073	12 / 6.831	- / -	12 / 6.831	34 / 12.554	23 / 6.049	3 / 0.801	24 / 6.535	Continuing	Continuing
Subtotal: Procurement, All Modification Items		- / 5.047	- / 1.078	- / 8.073	- / 6.831	- / -	- / 6.831	- / 12.554	- / 6.049	- / 0.801	- / 6.535	Continuing	Continuing
Support (All Modification Items)													
2.1) BFTN Production Support		- / 1.177	- / 0.000	- / 0.267	- / 0.182	- / 0.000	- / 0.182	- / 0.525	- / 0.362	- / 0.048	- / 0.394	Continuing	Continuing
2.2) BFTN DSA ⁽⁹⁾		- / 2.560	- / 0.000	- / 1.383	- / 1.402	- / 0.000	- / 1.402	- / 3.031	- / 2.915	- / 0.703	- / 2.047	Continuing	Continuing
Subtotal: Support		- / 3.737	- / -	- / 1.650	- / 1.584	- / -	- / 1.584	- / 3.556	- / 3.277	- / 0.751	- / 2.441	Continuing	Continuing
Installation													
Modification Item 1 of 1: Battle Force Tactical Network		- / 8.313	- / 0.000	- / 0.000	- / 6.146	- / 0.000	- / 6.146	- / 4.180	- / 12.079	- / 8.335	- / 1.109	Continuing	Continuing
Subtotal: Installation		- / 8.313	- / -	- / -	- / 6.146	- / -	- / 6.146	- / 4.180	- / 12.079	- / 8.335	- / 1.109	Continuing	Continuing
Total													
Total Cost (Procurement + Support + Installation)		17.097	1.078	9.723	14.561	0.000	14.561	20.290	21.405	9.887	10.085	Continuing	Continuing

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11										P-1 Line Item Number / Title: 3057 / Communications Items under \$5M										Modification Number / Title: 1 / Battle Force Tactical Network											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: Battle Force Tactical Network																															
Manufacturer Information																															
Manufacturer Name: Unknown															Manufacturer Location: Unknown																
Administrative Leadtime <i>(in Months)</i> : 4															Production Leadtime <i>(in Months)</i> : 9																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates						Apr 2019				Feb 2020																					
Delivery Dates						Jan 2020				Nov 2020																					
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: BFTN System Procurement																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		24 / 8.313		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		24 / 8.313					
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2019		- / -		- / -		- / -		18 / 6.146		0 / 0.000		18 / 6.146		- / -		- / -		- / -		- / -		- / -		0 / 0.000		18 / 6.146					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		12 / 4.180		- / -		- / -		- / -		- / -		0 / 0.000		12 / 4.180					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		34 / 12.079		- / -		- / -		- / -		0 / 0.000		34 / 12.079					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		23 / 8.335		- / -		- / -		0 / 0.000		23 / 8.335					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		3 / 1.109		0 / 0.000		3 / 1.109					
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		Continuing		Continuing					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		Continuing		Continuing					
Total		24 / 8.313		- / -		- / -		18 / 6.146		0 / 0.000		18 / 6.146		12 / 4.180		34 / 12.079		23 / 8.335		3 / 1.109		Continuing		Continuing							
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	24	-	-	-	-	-	-	-	-	-	5	7	6	1	3	3	5	4	11	11	8	3	7	7	6	-	1	2	-	Cont.	Cont.
Out	24	-	-	-	-	-	-	-	-	-	-	5	7	6	1	3	3	5	4	11	11	8	3	7	7	6	-	1	2	Cont.	Cont.
Footnotes: ⁽⁸⁾ As a result of realized Production Lead Time (PLT) associated with FY19 BFTN requirements, PLT changed to (9) nine months from (4) four months. In this request, planned FY19 procurements increased and their installation was deferred to FY20 due to the PLT change. As a result of the FY 19 procurement change, FY 20 units were reduced and budget realigned to support the installation of the increased FY 19 units.																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	P-1 Line Item Number / Title: 3057 / Communications Items under \$5M	Modification Number / Title: 1 / Battle Force Tactical Network
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
⁽⁹⁾ DSA estimates are based off a percentage of the total installation cost with 75% of costs being required the year prior for installation design work and 25% required the year of the actual installation. The DSA cost variance is due to ship configuration being installed. The DSA increase from FY 2019 - FY 2020 is a result of the increase in the number of installations planned: 12 installations in FY 2020 to 34 installations in FY 2021.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 12: Submarine Communications							P-1 Line Item Number / Title: 3107 / Submarine Broadcast Support					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	81.838	42.640	25.883	50.833	0.000	50.833	60.033	59.368	39.312	41.176	-	401.083
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	81.838	42.640	25.883	50.833	0.000	50.833	60.033	59.368	39.312	41.176	-	401.083
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	81.838	42.640	25.883	50.833	0.000	50.833	60.033	59.368	39.312	41.176	-	401.083
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	0.064	0.121	0.123	-	0.123	0.138	0.151	0.144	0.146	Continuing	Continuing
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: The details of this Budget Line Item are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.												

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 12: Submarine Communications						P-1 Line Item Number / Title: 3107 / Submarine Broadcast Support				
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A			Other Related Program Elements: N/A			
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Submarine Broadcast Support				- / 81.838	- / 42.640	- / 25.883	- / 50.833	- / -	- / 50.833
P-40	Total Gross/Weapon System Cost				- / 81.838	- / 42.640	- / 25.883	- / 50.833	- / 0.000	- / 50.833
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										

Justification:

The details of this Budget Line Item are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 12								P-1 Line Item Number / Title: 3107 / Submarine Broadcast Support							Aggregated Items Title: Submarine Broadcast Support					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
1) Submarine Broadcast Support																				
1.1) Submarine Broadcast Support		A	-	-	81.838	-	-	42.640	-	-	25.883	-	-	50.833	-	-	-	-	-	50.833
Subtotal: 1) Submarine Broadcast Support			-	-	81.838	-	-	42.640	-	-	25.883	-	-	50.833	-	-	-	-	-	50.833
Total			-	-	81.838	-	-	42.640	-	-	25.883	-	-	50.833	-	-	-	-	-	50.833

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy	Date: March 2019

Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 12: Submarine Communications	P-1 Line Item Number / Title: 3130 / Submarine Communication Equipment

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ <i>in Millions</i>)	943.112	76.327	78.580	69.643	0.000	69.643	62.380	65.201	65.927	67.081	-	1,428.251
Less PY Advance Procurement (\$ <i>in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ <i>in Millions</i>)	943.112	76.327	78.580	69.643	0.000	69.643	62.380	65.201	65.927	67.081	-	1,428.251
Plus CY Advance Procurement (\$ <i>in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ <i>in Millions</i>)	943.112	76.327	78.580	69.643	0.000	69.643	62.380	65.201	65.927	67.081	-	1,428.251
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ <i>in Millions</i>)	-	0.701	1.377	0.765	-	0.765	1.178	0.816	0.654	0.833	Continuing	Continuing
Flyaway Unit Cost (\$ <i>in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ <i>in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The details of this Budget Line Item are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 12: Submarine Communications						P-1 Line Item Number / Title: 3130 / Submarine Communication Equipment				
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A			Other Related Program Elements: N/A			
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Submarine Communication Equipment				- / 943.112	- / 76.327	- / 78.580	- / 69.643	- / -	- / 69.643
P-40	Total Gross/Weapon System Cost				- / 943.112	- / 76.327	- / 78.580	- / 69.643	- / 0.000	- / 69.643
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										

Justification:

The details of this Budget Line Item are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 12							P-1 Line Item Number / Title: 3130 / Submarine Communication Equipment								Aggregated Items Title: Submarine Communication Equipment ⁽¹⁾					
Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
1) Submarine Communication Equipment																				
1.1) Submarine Communication Equipment	A		-	-	943.112	-	-	76.327	-	-	78.580	-	-	69.643	-	-	-	-	-	69.643
Subtotal: 1) Submarine Communication Equipment			-	-	943.112	-	-	76.327	-	-	78.580	-	-	69.643	-	-	-	-	-	69.643
Total			-	-	943.112	-	-	76.327	-	-	78.580	-	-	69.643	-	-	-	-	-	69.643

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

Footnotes:

⁽¹⁾ The details of this Budget Line Item are classified SECRET//NOFORN and are submitted to Congress in the classified budget justification books.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 13: Satellite Communications	P-1 Line Item Number / Title: 3215 / Satellite Communications Systems

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: 237

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1,254.652	14.654	41.902	45.841	0.000	45.841	51.129	42.221	32.953	27.854	2.100	1,513.306
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,254.652	14.654	41.902	45.841	0.000	45.841	51.129	42.221	32.953	27.854	2.100	1,513.306
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1,254.652	14.654	41.902	45.841	0.000	45.841	51.129	42.221	32.953	27.854	2.100	1,513.306

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	0.021	0.127	0.111	-	0.111	0.252	0.132	0.155	0.146	Continuing	Continuing
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Satellite Communications (SATCOM) Systems P-1 line provides funds for procurement of shipboard terminal equipment for ship-to-ship, ship-to-shore and ship-to-aircraft tactical communications via earth orbiting relay satellites. This includes Radio Frequency (RF) equipment and baseband equipment assembled and grouped into systems and subsystems structured to address specific naval communications requirements. These systems provide modem processors and peripheral equipment that control the RF links for message traffic, direct data transfer and secure voice communications. They are selected and oriented by communications traffic levels, types of communications and operational missions. Commercial Broadband Satellite Program (CBSP) technical refresh of system modems and Ka Kits will directly support Assured Command and Control (AC2) posture, SATCOM reliability, space resiliency via band diversity and redundancy. AC2 modems enable the use of Wideband Global Satellite (WGS) X-Band (ship/submarine transmit and receive) and Ka-band (shore receive and transmit) resources to maintain link connectivity to provide assured access to mission critical communications in Anti-Access Anti-Denial (A2AD) jamming environments.

[P5 / (NR112) Commercial Broadband Satellite Assured C2 Modems]: CBSP Assured C2 Modems: Directly support Assured Command and Control (C2) posture, SATCOM reliability, space resiliency via band diversity and redundancy for MILSATCOM.

FY20 continues the procurement of modems and peripheral equipment to the CBSP terminal to provide technology refresh and directly support Assured Command and Control (C2) communications.

[P5 / (NR112) CBSP Ka Kits]: CBSP KA Kits: Current National focus is on highly contested environments and has highlighted a growing need of protected communications, specifically in a satellite denied environment. Assured Command and Control (AC2) Ka Band Kits will increase band diversity and access to Wideband Global SATCOM (WGS) and mitigates risk of loss of Beyond Line of Sight (BLOS) wideband communications in a SATCOM-denied environment for the CBSP Program. With this capability, CBSP will be able to reduce risk of loss of C2 communications on Unit Level Variant (ULV)/ Field Level Variant (FLV) class Combatant ships in a denied environment which would assure Command and Control (C2) including ISR, NIPR/SIPR, VTC, and other critical capabilities.

In FY20, CBSP continues the procurement and installation of 2 ULV Ka Band Kits.

[P3A / (NR117) Global Broadcast Service (GBS)]: GLOBAL BROADCAST SERVICE (GBS - NR117): GBS is a Joint Military Satellite Communications (MILSATCOM) program with the Air Force as Executive Agent for all services. GBS provides a continuous, high speed, one way information flow of high volume data to units ashore, afloat or special operations. GBS supports routine operations, training and military exercises, special activities, crises, situational awareness, weapons targeting, and reconnaissance. Deployment of GBS internet protocol (IP) terminals will allow expanded use of military intelligence collection in

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 13: Satellite Communications		P-1 Line Item Number / Title: 3215 / Satellite Communications Systems
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: 237		
a broader spectrum using MILSATCOM architecture. The Navy GBS Split IP effort enables near-real-time duplex asymmetric communications connectivity to ships/subs. GBS plays a pivotal role to support the Assured Command and Control (AC2) environment. [P3A - 2 / (NR112) Commercial Broadband Satellite program (CBSP) - Afloat]: CBSP is the U.S. Navy next generation Commercial Satellite Communications (SATCOM) program that provides the only source of wideband SATCOM to Patrol Coastal (PC) and Mine Countermeasure (MCM) Ships, diversity for Military Satellite Communications (MILSATCOM) on Unit Level Variant (ULV) ships, and augments MILSATCOM on Force Level Variant (FLV) ships. CBSP will support the procurement and installation of a commercial terminal and service architecture that significantly increase data throughput, Navy A2AD posture, and communication reliability. CBSP also increases space resiliency by providing band diversity, assured access, and redundancy for MILSATCOM. Included in the program are Small Ship Variant (SSV - Patrol Coastal and Mine Countermeasure Ships), Unit Level Variant (ULV - including Guided Missile Destroyers and Guided Missile Frigates), and Force Level Variant (FLV - large combatant ships including Carriers).		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 13: Satellite Communications						P-1 Line Item Number / Title: 3215 / Satellite Communications Systems				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: 237										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / Satellite Communications Systems	P-5a			- / 916.626	- / 7.330	- / 10.700	- / 5.255	- / 0.000	- / 5.255
P-3a	1 / (NR117) Global Broadcast Service (GBS) (TBD)				- / 195.006	- / 5.221	- / 19.487	- / 24.630	- / 0.000	- / 24.630
P-3a	2 / (NR112) Commercial Broadband Satellite program (CBSP) - Afloat (upgrade)				- / 143.020	- / 2.103	- / 11.715	- / 15.956	- / 0.000	- / 15.956
P-40	Total Gross/Weapon System Cost				- / 1,254.652	- / 14.654	- / 41.902	- / 45.841	- / 0.000	- / 45.841
Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / Satellite Communications Systems	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / (NR117) Global Broadcast Service (GBS) (TBD)				- / 20.259	- / 11.571	- / 6.855	- / 3.938	- / 0.000	- / 286.967
P-3a	2 / (NR112) Commercial Broadband Satellite program (CBSP) - Afloat (upgrade)				- / 14.908	- / 15.085	- / 15.427	- / 15.708	Continuing	Continuing
P-40	Total Gross/Weapon System Cost				- / 51.129	- / 42.221	- / 32.953	- / 27.854	- / 2.100	- / 1,513.306
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										
Justification: The FY20 funding request increases meet Assured Command and Control (AC2) requirements for Global Broadcast System (GBS) Afloat Terminals and Commercial Broadband Satellite Program (CBSP) Terminals. Specifically, the GBS AC2 increase resides in the Engineering Change Order (ECO) and adds X-Band reception to provide coverage to Naval Forces when Ka-band beam coverage is not available or to support higher priority missions. The ECO procures hardware, engineering services and installations to support critical X-Band capability to the Fleet. CBSP increase provides an additional commercial Teleport Shore Site to support surge capacity and enable a worldwide, end-to-end AC2 capability for surface combatants, Military Sealift Command (MSC) ships, submarines, shore facilities and expeditionary forces. The FY20 funding request continues procurement of both Afloat and Portable Global Broadcast System (GBS) Program Receive Terminals and an Engineering Change Order (ECO) to meet the Navy's Microsoft Windows 10 requirement Cyber Security Mandate (dated 08 December 2016). The ECO procures Public Key Infrastructure (PKI) hardware, engineering services and installations to support critical information assurance to the Fleet. The FY20 funding request continues Commercial Broadband Satellite Program (CBSP) procurement and installation of Unit Level Variant (ULV) and Force Level Variant (FLV) Terminals. Continues procurement and installation of CBSP modem technical refresh and begins procurement and installation of Ka Kit upgrades. All of which are in direct support of Assured Command and Control (AC2) U.S. Navy afloat mission objectives.										

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13						P-1 Line Item Number / Title: 3215 / Satellite Communications Systems						Item Number / Title [DODIC]: 1 / Satellite Communications Systems						
ID Code (A=Service Ready, B=Not Service Ready) :									MDAP/MAIS Code:									
Resource Summary				Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total				
Procurement Quantity <i>(Units in Each)</i>				-		-		-		-		-		-				
Gross/Weapon System Cost <i>(\$ in Millions)</i>				916.626		7.330		10.700		5.255		0.000		5.255				
Less PY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Net Procurement (P-1) <i>(\$ in Millions)</i>				916.626		7.330		10.700		5.255		0.000		5.255				
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Total Obligation Authority <i>(\$ in Millions)</i>				916.626		7.330		10.700		5.255		0.000		5.255				
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																		
Initial Spares <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>				-		-		-		-		-		-				
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Flyaway - Consolidated Prior Year Requirements Cost																		
Recurring Cost																		
1.1.1) Consolidated PY Requirements ⁽¹⁾	-	-	911.688	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	911.688	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Flyaway - Consolidated Prior Year Requirements Cost	-	-	911.688	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Hardware - (NR101) DAMA/MINI DAMA Cost																		
Recurring Cost																		
2.1.1) DAMA/MINI DAMA Procurement	5.000	70	0.350	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	0.350	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Hardware - (NR101) DAMA/MINI DAMA Cost	-	-	0.350	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Hardware - (NR118) JMINI CS Shore Cost																		
Non Recurring Cost																		
3.1.1) MILCON P-913 Procurement ⁽²⁾	-	-	0.000	-	-	0.000	-	-	0.000	-	-	1.400	-	-	0.000	-	-	1.400
Subtotal: Non Recurring Cost	-	-	0.000	-	-	0.000	-	-	0.000	-	-	1.400	-	-	0.000	-	-	1.400
Subtotal: Hardware - (NR118) JMINI CS Shore Cost	-	-	0.000	-	-	0.000	-	-	0.000	-	-	1.400	-	-	0.000	-	-	1.400

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Exhibit P-5, Cost Analysis: PB 2020 Navy													Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13							P-1 Line Item Number / Title: 3215 / Satellite Communications Systems						Item Number / Title [DODIC]: 1 / Satellite Communications Systems					
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Hardware - (NR112) Commercial Broadband Satellite Assured C2 Modems Cost																		
Recurring Cost																		
4.1.1) Assured C2 Modems ^(†) (3)	-	-	0.000	18.007	150	2.701	17.250	112	1.932	19.615	52	1.020	-	-	0.000	19.615	52	1.020
4.1.2) Assured C2 Modem Upgrades - Not Installed ^(†)	-	-	0.000	18.000	30	0.540	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	0.000	-	-	3.241	-	-	1.932	-	-	1.020	-	-	0.000	-	-	1.020
Subtotal: Hardware - (NR112) Commercial Broadband Satellite Assured C2 Modems Cost	-	-	0.000	-	-	3.241	-	-	1.932	-	-	1.020	-	-	0.000	-	-	1.020
Hardware - (NR112) CBSP Ka Kits Cost																		
Recurring Cost																		
5.1.1) Unit Level Variant ^(†) (4)	-	-	0.000	-	-	0.000	251.667	3	0.755	265.000	2	0.530	-	-	0.000	265.000	2	0.530
Subtotal: Recurring Cost	-	-	0.000	-	-	0.000	-	-	0.755	-	-	0.530	-	-	0.000	-	-	0.530
Subtotal: Hardware - (NR112) CBSP Ka Kits Cost	-	-	0.000	-	-	0.000	-	-	0.755	-	-	0.530	-	-	0.000	-	-	0.530
Support - (NR555) Production Support Cost																		
6.1) (CBSP) AC2 Modems Production Support	-	-	0.000	-	-	0.210	-	-	0.120	-	-	0.068	-	-	0.000	-	-	0.068
6.2) (CBSP) Ka Kits Production Support	-	-	0.000	-	-	0.000	-	-	0.041	-	-	0.029	-	-	0.000	-	-	0.029
6.3) (CBSP) Ka Kit Non-Recurring Engineering (NRE)	-	-	0.000	-	-	0.000	-	-	3.562	-	-	0.000	-	-	0.000	-	-	0.000
6.4) DAMA/MINI DAMA	-	-	0.231	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
6.5) MILCON P-913 Shore Based Enterprise Network Enhancements-Organic	-	-	0.666	-	-	0.000	-	-	0.000	-	-	0.157	-	-	0.000	-	-	0.157
Subtotal: Support - (NR555) Production Support Cost	-	-	0.897	-	-	0.210	-	-	3.723	-	-	0.254	-	-	0.000	-	-	0.254
Support - (NR777) Install (Afloat) Cost																		
7.1) CBSP AC2 Modems Install	-	-	0.000	-	-	3.879	-	-	4.148	-	-	1.852	-	-	0.000	-	-	1.852
7.2) CBSP Ka Kits - ULV Install	-	-	0.000	-	-	0.000	-	-	0.090	-	-	0.063	-	-	0.000	-	-	0.063

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Exhibit P-5, Cost Analysis: PB 2020 Navy													Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13						P-1 Line Item Number / Title: 3215 / Satellite Communications Systems							Item Number / Title [DODIC]: 1 / Satellite Communications Systems					
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
7.4) MINI DAMA Ship	-	-	3.337	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Support - (NR777) Install (Afloat) Cost	-	-	3.337	-	-	3.879	-	-	4.238	-	-	1.915	-	-	0.000	-	-	1.915
Support - (NR777) DSA (Afloat) Cost																		
8.1) CBSP Ka Kits DSA	-	-	0.000	-	-	0.000	-	-	0.052	-	-	0.136	-	-	0.000	-	-	0.136
8.2) MINI DAMA DSA (SHIP)	-	-	0.354	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Support - (NR777) DSA (Afloat) Cost	-	-	0.354	-	-	0.000	-	-	0.052	-	-	0.136	-	-	0.000	-	-	0.136
Gross/Weapon System Cost	-	-	916.626	-	-	7.330	-	-	10.700	-	-	5.255	-	-	0.000	-	-	5.255

(t) indicates the presence of a P-5a

Footnotes:

- (1) Consolidated Prior Year Requirements costs of \$911,688K which includes GBS Modem Upgrades, GBS Interim Modem Upgrades, GBS Shore Pre-Installation Design, SHF, NESP, CBSP, and Spectral Warrior (SW) / Spider Net (SN), JMINI Control System shore and JMINI CS Shore install dollars.
- (2) [NR118 Hardware] Funding supports procurement of mission related JMINI CS equipment at new NCTAMS Atlantic facility.
- (3) 1. FY20 CBSP AC2 Modem Qty 12 procurements and installations provides for a single Commercial Teleport Shore Site. Qty 40 modem procurements and installations support Afloat units comprising of Force Level and Unit Level ship variants.
- (4) FY19-20 CBSP Ka-Kit Unit Level Variant (ULV) procurement and installation Average Unit Costs (AUC) changes from PB 19 reflect accurate cost estimates derived from completed NRE efforts. Increased procurement AUC is due to the cost of back-fitting CBSP Terminal Unit Level Variant (ULV) with a less costly installation. FY20 supports the procurement and installation of 2 Unit Level Variant Ka Kits in an effort to reduce risk of loss of C2 communications on Unit Level Variant (ULV) class Combatant ships in a denied environment which would assure Command and Control (C2).

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy								Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13				P-1 Line Item Number / Title: 3215 / Satellite Communications Systems				Item Number / Title [DODIC]: 1 / Satellite Communications Systems			

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
4.1.1) Assured C2 Modems		2018	COMTECH / Tempe, AZ	SS / IDDQ	** NO PCO **	Jan 2018	Apr 2018	150	18.007	Y		
4.1.1) Assured C2 Modems		2019	COMTECH / Tempe, AZ	SS / IDIQ	** NO PCO **	Jan 2019	Apr 2019	112	17.250	Y		
4.1.1) Assured C2 Modems		2020	COMTECH / Tempe, AZ	SS / IDIQ	** NO PCO **	Jan 2020	Apr 2020	52	19.615	Y		
4.1.2) Assured C2 Modem Upgrades - Not Installed		2018	COMTECH / Tempe, AZ	C / TBD	** NO PCO **	Jan 2018	Apr 2018	30	18.000	Y		
5.1.1) Unit Level Variant		2019	Harris Corporation - CBSP / Palm Beach, FL	C / TBD	** NO PCO **	Dec 2018	Mar 2019	3	251.667	Y		
5.1.1) Unit Level Variant		2020	Harris Corporation - CBSP / Palm Beach, FL	C / TBD	** NO PCO **	Dec 2019	Mar 2020	2	265.000	Y		

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13					P-1 Line Item Number / Title: 3215 / Satellite Communications Systems					Modification Number / Title: 1 / (NR117) Global Broadcast Service (GBS)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	195.006	5.221	19.487	24.630	0.000	24.630	20.259	11.571	6.855	3.938	0.000	286.967
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	195.006	5.221	19.487	24.630	0.000	24.630	20.259	11.571	6.855	3.938	0.000	286.967
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	195.006	5.221	19.487	24.630	0.000	24.630	20.259	11.571	6.855	3.938	0.000	286.967
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: GLOBAL BROADCAST SERVICE (GBS - NR117): GBS is a Joint Military Satellite Communications (MILSATCOM) program with the Air Force as Executive Agent for all services. GBS provides a continuous, high speed, one way information flow of high volume data to units ashore, afloat or special operations. GBS supports routine operations, training and military exercises, special activities, crises, situational awareness, weapons targeting, and reconnaissance. Deployment of GBS internet protocol (IP) terminals will allow expanded use of military intelligence collection in a broader spectrum using MILSATCOM architecture. The Navy GBS Split IP effort enables near-real-time duplex asymmetric communications connectivity to ships/subs. GBS plays a pivotal role to support the AC2 environment.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13				P-1 Line Item Number / Title: 3215 / Satellite Communications Systems						Modification Number / Title: 1 / (NR117) Global Broadcast Service (GBS)			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: [No Model Specified]				Modification Type: TBD				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
<i>Modification Item 1 of 1:</i> (NR117) Global Broadcast Service (GBS)													
B Kits													
Recurring													
1.1.1) Afloat Receive Terminal - NonOrganic ⁽⁵⁾	157 / 101.782	- / -	13 / 6.560	20 / 10.294	- / -	20 / 10.294	17 / 8.925	4 / 2.142	- / -	- / -	- / -	211 / 129.703	
1.1.2) Portable Receive Terminal - Organic ⁽⁶⁾	57 / 12.700	15 / 3.534	40 / 9.609	35 / 8.580	- / -	35 / 8.580	9 / 2.250	15 / 3.826	14 / 3.642	14 / 3.715	- / -	199 / 47.856	
<i>Subtotal: Recurring</i>	- / 114.482	- / 3.534	- / 16.169	- / 18.874	- / -	- / 18.874	- / 11.175	- / 5.968	- / 3.642	- / 3.715	- / 0.000	- / 177.559	
<i>Subtotal: (NR117) Global Broadcast Service (GBS)</i>	214 / 114.482	15 / 3.534	53 / 16.169	55 / 18.874	- / -	55 / 18.874	26 / 11.175	19 / 5.968	14 / 3.642	14 / 3.715	- / -	410 / 177.559	
<i>Subtotal: Procurement, All Modification Items</i>	- / 114.482	- / 3.534	- / 16.169	- / 18.874	- / -	- / 18.874	- / 11.175	- / 5.968	- / 3.642	- / 3.715	- / 0.000	- / 177.559	
Support (All Modification Items)													
2.1) Production Support	- / 22.152	- / 0.193	- / 0.878	- / 1.087	- / 0.000	- / 1.087	- / 0.711	- / 0.253	- / 0.191	- / 0.223	- / -	- / 25.688	
2.2) Afloat Receive Terminal DSA ⁽⁷⁾	- / 9.445	- / 0.225	- / 0.954	- / 1.671	- / 0.000	- / 1.671	- / 1.246	- / 0.260	- / 0.000	- / 0.000	- / -	- / 13.801	
2.3) Engineering Change Order ⁽⁸⁾	- / 3.114	- / 1.110	- / 0.350	- / 0.846	- / 0.000	- / 0.846	- / 3.412	- / 3.023	- / 3.022	- / 0.000	- / -	- / 14.877	
<i>Subtotal: Support</i>	- / 34.711	- / 1.528	- / 2.182	- / 3.604	- / -	- / 3.604	- / 5.369	- / 3.536	- / 3.213	- / 0.223	- / 0.000	- / 54.366	
Installation													
<i>Modification Item 1 of 1:</i> (NR117) Global Broadcast Service (GBS)	- / 45.813	- / 0.159	- / 1.136	- / 2.152	- / 0.000	- / 2.152	- / 3.715	- / 2.067	- / 0.000	- / 0.000	- / 0.000	- / 55.042	
<i>Subtotal: Installation</i>	- / 45.813	- / 0.159	- / 1.136	- / 2.152	- / -	- / 2.152	- / 3.715	- / 2.067	- / -	- / -	- / 0.000	- / 55.042	
Total													
Total Cost (Procurement + Support + Installation)	195.006	5.221	19.487	24.630	0.000	24.630	20.259	11.571	6.855	3.938	0.000	286.967	

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13				P-1 Line Item Number / Title: 3215 / Satellite Communications Systems				Modification Number / Title: 1 / (NR117) Global Broadcast Service (GBS)				
ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Modification Item 1 of 1: (NR117) Global Broadcast Service (GBS)												
Manufacturer Information												
Manufacturer Name: RAYTHEON						Manufacturer Location: Sterling, VA						
Administrative Leadtime (in Months): 2						Production Leadtime (in Months): 5						
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates		Dec 2018	Dec 2019									
Delivery Dates		May 2019	May 2020									
Manufacturer Name: Aqyr Technologies, Inc.						Manufacturer Location: Nashua, NH						
Administrative Leadtime (in Months): 2						Production Leadtime (in Months): 3						
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates	Dec 2017	Dec 2018	Dec 2019									
Delivery Dates	Mar 2018	Mar 2019	Mar 2020									
Installation Information												
Method of Implementation: [none specified]:: Installation Name: Afloat Receive Terminal												
Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	156 / 45.813	1 / 0.159	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	157 / 45.972
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	7 / 1.136	6 / 0.993	0 / 0.000	6 / 0.993	- / -	- / -	- / -	- / -	0 / 0.000	13 / 2.129
FY 2020	- / -	- / -	- / -	7 / 1.159	0 / 0.000	7 / 1.159	13 / 2.195	- / -	- / -	- / -	0 / 0.000	20 / 3.354
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	9 / 1.520	8 / 1.378	- / -	- / -	0 / 0.000	17 / 2.898
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 0.689	- / -	- / -	0 / 0.000	4 / 0.689
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	156 / 45.813	1 / 0.159	7 / 1.136	13 / 2.152	0 / 0.000	13 / 2.152	22 / 3.715	12 / 2.067	- / -	- / -	0 / 0.000	211 / 55.042

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Exhibit P-3a, Individual Modification: PB 2020 Navy																						Date: March 2019									
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13											P-1 Line Item Number / Title: 3215 / Satellite Communications Systems											Modification Number / Title: 1 / (NR117) Global Broadcast Service (GBS)									
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: (NR117) Global Broadcast Service (GBS)																															
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: Afloat Receive Terminal																															
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	156	-	1	-	-	-	-	4	3	3	3	4	3	7	6	6	3	4	4	4	-	-	-	-	-	-	-	-	-	-	-
Out	156	-	-	1	-	-	-	-	7	-	6	-	7	-	7	6	9	-	8	-	4	-	-	-	-	-	-	-	-	-	-
Method of Implementation (Organic): Portable Receive Terminal - Not Installed																						Installation Quantity: 199									
Footnotes: ⁽⁵⁾ 1. FY 2019 to FY 2020 GBS Afloat Receive Terminal Procurement and Installation increase is required to meet fielding requirements for Resilient Command and Control (RC2) that provides support to Fleet missions: Strike & Special Operations, Imagery and Intel Data (Live Streaming Video). ⁽⁶⁾ 1. GBS Portable Receive Terminals are turn-key and therefore do not have installation costs associated with them. ⁽⁷⁾ DSA estimates are based off a percentage of the total installation cost with 75% of costs required the year prior to Installation for design planning work and 25% required the year of the actual installation. The DSA increase from FY19 to FY20 is a result of an increase of the number installations from Qty 7 in FY19 to Qty 13 in FY20, an increase of Qty 6 installations planned in FY20. The DSA cost variance are also attributed to the type of ship configuration being installed. ⁽⁸⁾ Engineering Change Order (ECO) is required to implement Cybersecurity upgrades to increase system performance for fielded GBS Afloat Receive Terminals and Portable Receive Terminals. FY18-20 procures and installs Win 10 PKI upgrades and performs associated integration, assembly and test.																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13					P-1 Line Item Number / Title: 3215 / Satellite Communications Systems					Modification Number / Title: 2 / (NR112) Commercial Broadband Satellite program (CBSP) - Afloat		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	143.020	2.103	11.715	15.956	0.000	15.956	14.908	15.085	15.427	15.708	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	143.020	2.103	11.715	15.956	0.000	15.956	14.908	15.085	15.427	15.708	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	143.020	2.103	11.715	15.956	0.000	15.956	14.908	15.085	15.427	15.708	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: CBSP is the U.S. Navy next generation Commercial SATCOM program that provides the only source of wideband SATCOM to Patrol Coastal (PC) and Mine Countermeasure (MCM) Ships, diversity for MILSATCOM on Unit Level Variant (ULV) ships, and augments MILSATCOM on Force Level Variant (FLV) ships. CBSP will support the procurement and installation of a commercial terminal and service architecture that significantly increase data throughput, Navy A2AD posture, and communication reliability. CBSP also increases space resiliency by providing band diversity, assured access, and redundancy for MILSATCOM. Included in the program are Small Ship Variant (SSV - Patrol Coastal and Mine Countermeasure Ships), Unit Level Variant (ULV - including Guided Missile Destroyers and Guided Missile Frigates), and Force Level Variant (FLV - large combatant ships including Carriers).												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13				P-1 Line Item Number / Title: 3215 / Satellite Communications Systems						Modification Number / Title: 2 / (NR112) Commercial Broadband Satellite program (CBSP) - Afloat			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: Submarines, ships				Modification Type: upgrade				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
<i>Modification Item 1 of 1:</i> (NR112) Commercial Broadband Satellite program (CBSP) - Afloat													
B Kits													
Recurring													
1.1.1) Small Ship Variant (SSV) - NonOrganic	27 / 4.290	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	27 / 4.290	
1.1.2) Unit Level Variant (ULV) - NonOrganic ⁽⁹⁾	31 / 30.476	- / -	6 / 5.622	5 / 4.730	- / -	5 / 4.730	7 / 6.839	5 / 5.010	3 / 3.048	7 / 7.432	Continuing	Continuing	
1.1.3) Force Level Variant (FLV) - NonOrganic ⁽¹⁰⁾	24 / 40.684	- / -	- / -	1 / 1.914	- / -	1 / 1.914	- / -	- / -	- / -	- / -	- / -	25 / 42.598	
<i>Subtotal: Recurring</i>	- / 75.450	- / -	- / 5.622	- / 6.644	- / -	- / 6.644	- / 6.839	- / 5.010	- / 3.048	- / 7.432	Continuing	Continuing	
<i>Subtotal: (NR112) Commercial Broadband Satellite program (CBSP) - Afloat</i>	82 / 75.450	- / -	6 / 5.622	6 / 6.644	- / -	6 / 6.644	7 / 6.839	5 / 5.010	3 / 3.048	7 / 7.432	Continuing	Continuing	
<i>Subtotal: Procurement, All Modification Items</i>	- / 75.450	- / -	- / 5.622	- / 6.644	- / -	- / 6.644	- / 6.839	- / 5.010	- / 3.048	- / 7.432	Continuing	Continuing	
Support (All Modification Items)													
2.1) Engineering Change Orders ⁽¹¹⁾	- / 1.945	- / 0.059	- / 1.253	- / 1.326	- / -	- / 1.326	- / 0.040	- / 0.854	- / 1.267	- / 0.318	Continuing	Continuing	
2.2) Production Support	- / 0.275	- / -	- / 0.337	- / 0.448	- / -	- / 0.448	- / 0.454	- / 0.347	- / 0.213	- / 0.515	Continuing	Continuing	
2.3) Other (DSA) ⁽¹²⁾	- / 12.139	- / 0.264	- / 0.969	- / 1.418	- / -	- / 1.418	- / 2.265	- / 2.448	- / 2.160	- / 0.757	Continuing	Continuing	
<i>Subtotal: Support</i>	- / 14.359	- / 0.323	- / 2.559	- / 3.192	- / -	- / 3.192	- / 2.759	- / 3.649	- / 3.640	- / 1.590	Continuing	Continuing	
Installation													
<i>Modification Item 1 of 1:</i> (NR112) Commercial Broadband Satellite program (CBSP) - Afloat	- / 53.211	- / 1.780	- / 3.534	- / 6.120	- / 0.000	- / 6.120	- / 5.310	- / 6.426	- / 8.739	- / 6.686	Continuing	Continuing	
<i>Subtotal: Installation</i>	- / 53.211	- / 1.780	- / 3.534	- / 6.120	- / -	- / 6.120	- / 5.310	- / 6.426	- / 8.739	- / 6.686	Continuing	Continuing	
Total													
Total Cost (Procurement + Support + Installation)	143.020	2.103	11.715	15.956	0.000	15.956	14.908	15.085	15.427	15.708	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13										P-1 Line Item Number / Title: 3215 / Satellite Communications Systems										Modification Number / Title: 2 / (NR112) Commercial Broadband Satellite program (CBSP) - Afloat											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: (NR112) Commercial Broadband Satellite program (CBSP) - Afloat																															
Manufacturer Information																															
Manufacturer Name: Harris - CBSP FLV															Manufacturer Location: Palm Beach, FL																
Administrative Leadtime (in Months): 2															Production Leadtime (in Months): 6																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates						Dec 2018				Dec 2019																					
Delivery Dates						Jun 2019				Jun 2020																					
Installation Information																															
Method of Implementation: Tiger Team:: Installation Name: Small Ship Variant (SSV), Unit Level Variant (ULV) and Force Level V																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		80 / 53.211		2 / 1.780		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		82 / 54.991							
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2019		- / -		- / -		3 / 3.534		3 / 3.672		0 / 0.000		3 / 3.672		- / -		- / -		- / -		- / -		0 / 0.000		6 / 7.206							
FY 2020		- / -		- / -		- / -		2 / 2.448		0 / 0.000		2 / 2.448		4 / 4.260		- / -		- / -		- / -		0 / 0.000		6 / 6.708							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		1 / 1.050		6 / 6.426		- / -		- / -		Continuing		Continuing							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		5 / 5.462		- / -		0 / 0.000		5 / 5.462							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		3 / 3.277		- / -		0 / 0.000		3 / 3.277							
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		6 / 6.686		1 / 1.137		7 / 7.823							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		Continuing		Continuing							
Total		80 / 53.211		2 / 1.780		3 / 3.534		5 / 6.120		0 / 0.000		5 / 6.120		5 / 5.310		6 / 6.426		8 / 8.739		6 / 6.686		Continuing		Continuing							
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	80	-	1	1	-	-	-	2	1	-	3	1	1	1	3	1	-	3	3	-	-	3	2	3	-	-	-	6	-	Cont.	Cont.
Out	80	-	-	1	1	-	-	-	2	1	-	3	1	1	1	3	1	-	3	3	-	-	5	-	3	-	-	-	6	Cont.	Cont.
Footnotes:																															
⁽⁹⁾ 1. FY19-FY24 Engineering Change Order (ECO) updates are re-prioritized to adjudicate FY19-FY24 CBSP Terminal Install and DSA funding levels required to complete scheduled installations to reflect updated fielding plan synchronization. 2. FY20 installation cost increase compared to FY19 is driven by CBSP shipboard configuration type and platform type. 3. FY20 procures Qty 5 CBSP Unit Level Variant (ULV) terminals to meet DDG ship class fielding requirements.																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13	P-1 Line Item Number / Title: 3215 / Satellite Communications Systems	Modification Number / Title: 2 / (NR112) Commercial Broadband Satellite program (CBSP) - Afloat
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
(10) 1. Force Level Variant (FLV) terminals include single and dual antenna configurations which influences average unit cost. (11) Engineering changes required to implement bandwidth efficiency technologies to increase system performance for fielded Small Ship Variants (SSV) and Force Level Variants (FLV). (12) DSA estimates are based off of a percentage of the total installation, with 75% of costs being required the year prior for all pre-installation design work and 25% required the year of the actual installation.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 13: Satellite Communications							P-1 Line Item Number / Title: 3216 / Navy Multiband Terminal (NMT)					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: 290												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1,087.550	62.113	109.385	88.021	0.000	88.021	70.187	24.249	16.585	20.281	73.062	1,551.433
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,087.550	62.113	109.385	88.021	0.000	88.021	70.187	24.249	16.585	20.281	73.062	1,551.433
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1,087.550	62.113	109.385	88.021	0.000	88.021	70.187	24.249	16.585	20.281	73.062	1,551.433
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	0.224	0.231	0.159	-	0.159	-	-	-	-	-	0.614
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Navy Multiband Terminal (NMT) System provides funds for procurement of ship, submarine, and shore protected and wideband Military Satellite Communications (MILSATCOM) terminals via earth orbiting relay satellites in the Super High Frequency, Ka, and Extremely High Frequency (EHF) bands. The NMT provides warfighters with the assured, jam resistant, secure SATCOM for message traffic, data transfer and secure voice communications. These procurements are scheduled to meet the satellite communications requirements established by the Chief of Naval Operations in the Fleet Communications Planning and Programming documents.

NAVY MULTIBAND TERMINAL (NMT - NS108): The NMT program is the next generation maritime military satellite communications terminal. The NMT Program is the required Navy component to the Advanced Extremely High Frequency (AEHF) Program for enhancing protected and survivable satellite communications to Naval forces. NMT multiband capabilities communicate two way Ka-Band on Wideband Global SATCOM (WGS) and shipboard and submarine terminals to communicate with X-Band using the Defense Satellite Communications System and WGS. NMT is compatible with today's Navy Low Data Rate/Medium Data Rate terminals, X-Band terminals and will sustain the MILSATCOM architecture by providing connectivity across the spectrum of mission areas, to include land, air and naval warfare, special operations, strategic nuclear operations, strategic defense, theater missile defense, and space operations and intelligence. The NMT system will replenish and improve on the capabilities of both the Military Strategic and Tactical Relay System (MILSTAR) and WGS system by equipping the warfighters with the assured, jam resistant, secure communications as described in the Operational Requirements Document (Wideband Gapfiller System ORD, AFSPC ORD 004-99, May 3, 2000) for the joint AEHF Satellite Communications and WGS System.

The NMT protected system AN/WSC-9 V (Variant) is comprised of three configurations for ships, submarines and shore sites known as Communication Groups. Terminal Communication Groups will integrate protected and wideband signal processing to multiband Antenna Groups. The Antenna Groups align to the specific Terminal Variant for ship, submarine and shore platforms and provides the SATCOM capabilities known as Q/Ka and X/Ka assigned to platforms. NMT includes the Advanced Time Division Multiple Access (TDMA) Interface Processor (IP) and supports increased data transfers for the Automated Digital Network System (ADNS) router architecture supporting improved Quality of Service (QoS) capability, smaller form factor and easier integration into operational environments, further supporting network user access to protected MILSATCOM connectivity. Technical refresh of modems and the associated architectures will directly support Assured Command and Control (AC2) posture, SATCOM reliability, space resiliency via band diversity and redundancy. AC2 modems are an upgrade to enable the use of Wideband Global Satellite (WGS) X-Band (ship/submarine transmit and receive) and Ka-band (shore receive and transmit) resources to maintain link connectivity to provide assured access to mission critical communications in jamming environments.

This system is formally specified by both Fleet Commanders as a threshold capability for global maritime command control and communications in a Distributed Maritime Environment to execute current warfighting plans and is required for National Command and Control capability.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 13: Satellite Communications		P-1 Line Item Number / Title: 3216 / Navy Multiband Terminal (NMT)
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: 290		
[P5 / X/Ka Backfits]: X/Ka Backfits continue to be fielded on platforms with NMT Q/Ka Ship terminals that were procured during Low Rate Initial Production (LRIP) and require the wideband capability that the X/Ka Antenna Group provides. The X/Ka hardware was unavailable during the first two years of production but is required to provide the full Wideband capability to the Fleet. The PB 20 NMT Budget includes the breakout of Integration, Assembly and Test (IA&T) and System Operational Verification Test (SOVT) costs. IA&T efforts are performed once X/Ka Backfit terminals and antennas are delivered from Raytheon Production Facilities to the government site SSC Atlantic, Charleston SC. SSC Atlantic serves as the lead integrator and performs Pre-Installation, Test and Check-Out (PITCO) of the terminals and antennas required for NMT shore platforms. SOVT efforts are performed by SSC Atlantic, Charleston, SC and SSC Pacific, San Diego, CA and validate the NMT system is operational post installation on ashore platforms. [P5 / NMT Ashore Antennas]: Shore Antennas comprise of a Q Band configuration to provide SATCOM capabilities. The original NMT acquisition strategy was to re-use legacy FOT Shore Antennas that would be refurbished. However, antennas coming in for overhaul were in worse than expected condition; all required major overhaul parts including bearings, cable assemblies, motors, slip rings, and rotary joints. Refurbished FOT antennas posed long-term supportability problems due to obsolescence. Therefore, in Prior Year procurements (PY FY15), the program office procured 17 Shore antennas to provide optimal capability to the Fleet. Similar to the X/Ka Backfit hardware, the PB 20 Budget includes the breakout of Integration, Assembly and Test (IA&T) efforts which are performed once the Ashore Antennas are delivered from Raytheon Production Facilities to the government site at SSC Atlantic, Charleston SC. SSC Atlantic serves as the lead integrator and performs Pre-Installation, Test and Check-Out (PITCO) of the antennas required for NMT shore platforms. NMT Installations include System Operational Verification Test (SOVT) which are performed by SSC Atlantic, Charleston, SC and SSC Pacific, San Diego, CA and validate the NMT antenna is operational post installation on shore sites. [P5 / ATIP]: Initial NMT procurements included the Time Division Multiple Access (TDMA) Interface Processor (TIP) pending the development of the Advanced Time Division Multiple Access (TDMA) Interface Processor (IP). Although ATIP is required to receive NMT's full netted communications capability over the Extreme Data Rate (XDR), it also is fielded independently of NMT as a Back-Fit to replace the legacy TIP's from the Fleet thereby improving Cyber Security posture and Reliability of the system. ATIPs require Integration, Assembly and Test (IA&T). IA&T efforts are performed once ATIPS are delivered from COMTECH to the government sites at SSC Pacific, San Diego, CA. SSC Pacific serves as lead integrator and performs Pre-Installation, Test and Check-Out (PITCO) of the modems required for NMT ship and submarine afloat platforms. NMT Installation updates include System Operational Verification Test (SOVT). SOVT efforts are performed by SSC Pacific, San Diego, CA and validate ATIPS are operational post installation on afloat platforms and ashore sites. [P5 / Wideband Anti-Jam Modem System (WAMS)]: The Wideband Anti-Jam Modem System (WAMS) is a Navy technology upgrade that enhances communication capability of shipboard and submarine NMTs by providing wideband Anti-Jam (AJ) Satellite Communication throughput over Wideband Global SATCOM (WGS). WAMS is a major contributor in supporting the National Defense Strategy by investing in resilience to provide assured communications capabilities. WAMS enables space segment Anti Jam (AJ) diversity (EHF/AEHF and WGS), thus enabling NMT ships and submarines equipped with the modem to operate in wideband links closer to threat jammers.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 13: Satellite Communications						P-1 Line Item Number / Title: 3216 / Navy Multiband Terminal (NMT)				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: 290										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / Navy Multiband Terminal (NMT)				- / 220.529	- / 11.937	- / 14.619	- / 7.443	- / 0.000	- / 7.443
P-3a	1 / 3216 Navy Multiband Terminal (NMT) - Afloat (TBD)				- / 756.149	- / 33.518	- / 60.417	- / 50.589	- / 0.000	- / 50.589
P-3a	2 / 3216 Navy Multiband Terminal (NMT) - Ashore (TBD)				- / 110.872	- / 5.144	- / 7.854	- / 17.525	- / 0.000	- / 17.525
P-3a	3 / Assured C2 Modems (TBD)				- / 0.000	- / 11.514	- / 26.495	- / 12.464	- / 0.000	- / 12.464
P-40	Total Gross/Weapon System Cost				- / 1,087.550	- / 62.113	- / 109.385	- / 88.021	- / 0.000	- / 88.021
Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / Navy Multiband Terminal (NMT)				- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / 3216 Navy Multiband Terminal (NMT) - Afloat (TBD)				- / 47.050	- / 9.380	- / 5.458	- / 0.000	- / 73.062	- / 1,035.623
P-3a	2 / 3216 Navy Multiband Terminal (NMT) - Ashore (TBD)				- / 1.524	- / 8.082	- / 0.000	- / 0.000	- / 0.000	- / 151.001
P-3a	3 / Assured C2 Modems (TBD)				- / 18.981	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 69.454
P-40	Total Gross/Weapon System Cost				- / 70.187	- / 24.249	- / 16.585	- / 20.281	- / 73.062	- / 1,551.433
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding. Justification: The FY20 funding request refines estimates for the procurement of 11 NMT terminals and the installation of 6 NMT terminals to align with earliest remaining installation availabilities. FY20 continues the procurement and installation of NMT terminals, AC2 modems, ATIPs, and X/Ka Back-Fits. This exhibit has been updated to allow the program to maximize remaining Economic Order Quantity discounts reducing overall cost to the Navy and to meet Full Operational Capability (FOC) in FY23. As the program nears FOC in FY23, the hardware being procured supports specific ship platform variants. Should an installation slip, the hardware for that platform cannot necessarily be aligned to a different platform creating an appearance of ahead of need for prior year procurements. Beginning at PB20, the following efforts have been moved from the P-3a to the P-5 due to budget year (FY20) costs falling below the \$5M threshold and includes: - X/Ka Backfits - NMT Ashore Antennas - ATIP - Wideband Anti-Jam Modem System (WAMS) All associated costs (procurement, install, support) are broken out accordingly on the P-5 to ensure no loss of budget details.										

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13						P-1 Line Item Number / Title: 3216 / Navy Multiband Terminal (NMT)						Item Number / Title [DODIC]: 1 / Navy Multiband Terminal (NMT)						
ID Code (A=Service Ready, B=Not Service Ready) :									MDAP/MAIS Code:									
Resource Summary				Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total				
Procurement Quantity <i>(Units in Each)</i>				-		-		-		-		-		-				
Gross/Weapon System Cost <i>(\$ in Millions)</i>				220.529		11.937		14.619		7.443		0.000		7.443				
Less PY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Net Procurement (P-1) <i>(\$ in Millions)</i>				220.529		11.937		14.619		7.443		0.000		7.443				
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Total Obligation Authority <i>(\$ in Millions)</i>				220.529		11.937		14.619		7.443		0.000		7.443				
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																		
Initial Spares <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>				-		-		-		-		-		-				
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Hardware - X/Ka Backfits Cost																		
Recurring Cost																		
1.1.1) X/Ka Backfits	1,426.958	48	68.494	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	68.494	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Hardware - X/Ka Backfits Cost	-	-	68.494	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Hardware - NMT Ashore Antennas Cost																		
Recurring Cost																		
2.1.1) NMT Ashore Antennas	817.824	17	13.903	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	13.903	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Hardware - NMT Ashore Antennas Cost	-	-	13.903	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Hardware - ATIP Cost																		
Recurring Cost																		
3.1.1) Advanced TDMA Interface Processors (ATIP)	97.897	312	30.544	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	30.544	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Hardware - ATIP Cost	-	-	30.544	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Support - NS555 Production Support Cost																		

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Exhibit P-5, Cost Analysis: PB 2020 Navy													Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13						P-1 Line Item Number / Title: 3216 / Navy Multiband Terminal (NMT)							Item Number / Title [DODIC]: 1 / Navy Multiband Terminal (NMT)					
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
5.1) X/Ka Backfit Integration, Assembly & Test (IA&T) ⁽¹⁾	-	-	1.387	-	-	0.492	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
5.2) Ashore Antenna IA&T	-	-	0.715	-	-	1.353	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
5.3) ATIP IA&T	-	-	0.000	-	-	1.985	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Support - NS555 Production Support Cost	-	-	2.102	-	-	3.830	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Support - NS777 FMP Install (Afloat) Cost																		
6.1) X/Ka Backfit System Operational Verification Test (SOVT)	-	-	2.227	-	-	0.419	-	-	0.086	-	-	0.087	-	-	0.000	-	-	0.087
6.2) X/Ka Backfits Installation ⁽²⁾	-	-	69.184	-	-	1.931	-	-	1.970	-	-	1.685	-	-	0.000	-	-	1.685
6.3) ATIP SOVT	-	-	0.000	-	-	1.644	-	-	1.608	-	-	0.698	-	-	0.000	-	-	0.698
6.4) ATIP Installation ⁽³⁾	-	-	32.041	-	-	4.113	-	-	8.419	-	-	0.881	-	-	0.000	-	-	0.881
Subtotal: Support - NS777 FMP Install (Afloat) Cost	-	-	103.452	-	-	8.107	-	-	12.083	-	-	3.351	-	-	0.000	-	-	3.351
Support - NS776 Install (Ashore) Cost																		
8.1) Ashore Antenna SOVT	-	-	0.000	-	-	0.000	-	-	0.428	-	-	0.436	-	-	0.000	-	-	0.436
8.2) Ashore Antennas Installation ⁽⁴⁾	-	-	2.034	-	-	0.000	-	-	2.108	-	-	3.656	-	-	0.000	-	-	3.656
Subtotal: Support - NS776 Install (Ashore) Cost	-	-	2.034	-	-	0.000	-	-	2.536	-	-	4.092	-	-	0.000	-	-	4.092
Gross/Weapon System Cost	-	-	220.529	-	-	11.937	-	-	14.619	-	-	7.443	-	-	0.000	-	-	7.443

Footnotes:

⁽¹⁾ IA&T costs are budgeted in the year of the hardware delivery.

⁽²⁾ 1. FY19 X-Ka Backfit update from the PB19 adjusts installation cost based on updated Program Office Estimates. FY19 funded Qty 1 install. 2. FY20 X-Ka Backfit adjustment adds Qty 1 installation originally planned in FY22. FY20 funds Qty 1 install. 3. Fielded platforms with the Q/Ka configuration require an X/Ka backfit, which has additional costs dependent on platform (large vs small deck). NMT scheduled installations are dependent on limited ship availabilities as the program nears FOC in FY23.

⁽³⁾ 1. ATIP modem installations will take place during a Window of Opportunity (WOO) availability that includes a 14-day window to perform and complete the installation. FY19 funded Qty 94 installs. 2. FY20-FY24 ATIP installation cost and quantity adjustments reflect updated cost estimates based upon actuals to date for individual ATIP configuration types on ship, shore and sub platforms. FY20 funds Qty 4 Afloat installs.

⁽⁴⁾ Ashore Antenna installation schedule updates reflect re-prioritization to support NMT Afloat Installations that are dependent on limited ship availabilities as the program nears FOC in FY23. FY19 funded Qty 3 installs and FY20 funds Qty 5 installs.

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Exhibit P-3a, Individual Modification: PB 2020 Navy						Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13				P-1 Line Item Number / Title: 3216 / Navy Multiband Terminal (NMT)				Modification Number / Title: 1 / 3216 Navy Multiband Terminal (NMT) - Afloat			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	756.149	33.518	60.417	50.589	0.000	50.589	47.050	9.380	5.458	0.000	73.062	1,035.623
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	756.149	33.518	60.417	50.589	0.000	50.589	47.050	9.380	5.458	0.000	73.062	1,035.623
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	756.149	33.518	60.417	50.589	0.000	50.589	47.050	9.380	5.458	0.000	73.062	1,035.623
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

(Afloat Ship) (Afloat Sub): Provides jam resistant, low probability of interception and detection for protected extended data rate communications with Advanced Extremely High Frequency (AEHF) capability.

The FY20 request provides for the procurement of 5 NMT shipboard terminal and the installation of 5 NMT shipboard terminals to align with earliest remaining installation availabilities. Budget updates also include the breakout of Integration, Assembly and Test (IA&T) and System Operational Verification Test (SOVT) costs. IA&T efforts are performed once terminals and antennas are delivered from Raytheon Production Facilities to the government site SSC Atlantic, Charleston SC. SSC Atlantic serves as the lead integrator and performs Pre-Installation, Test and Check-Out (PITCO) of the terminals and antennas required for NMT ship and submarine afloat platforms. SOVT efforts are performed by SSC Atlantic, Charleston, SC and SSC Pacific, San Diego, CA and validate the NMT system is operational post installation on afloat platforms.

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13				P-1 Line Item Number / Title: 3216 / Navy Multiband Terminal (NMT)				Modification Number / Title: 1 / 3216 Navy Multiband Terminal (NMT) - Afloat					
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: Ships, submarines			Modification Type: TBD					Related RDT&E PEs: 0303109N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: 3216 Navy Multiband Terminal (NMT) - Afloat													
B Kits													
Recurring													
1.1.1) Afloat Ship - NonOrganic ⁽⁵⁾		118 / 379.712	- / -	5 / 23.340	5 / 29.010	- / -	5 / 29.010	2 / 21.046	- / -	- / -	- / -	130 / 453.108	
1.1.2) Afloat Sub - NonOrganic		69 / 64.094	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	69 / 64.094	
Subtotal: Recurring		- / 443.806	- / -	- / 23.340	- / 29.010	- / -	- / 29.010	- / 21.046	- / -	- / -	- / -	- / 517.202	
Subtotal: 3216 Navy Multiband Terminal (NMT) - Afloat		187 / 443.806	- / -	5 / 23.340	5 / 29.010	- / -	5 / 29.010	2 / 21.046	- / -	- / -	- / -	199 / 517.202	
Subtotal: Procurement, All Modification Items		- / 443.806	- / -	- / 23.340	- / 29.010	- / -	- / 29.010	- / 21.046	- / -	- / -	- / 0.000	- / 517.202	
Support (All Modification Items)													
2.1) NMT Integration, Assembly & Test (IA&T)		- / 5.011	- / 0.738	- / 0.125	- / 0.384	- / 0.000	- / 0.384	- / 1.044	- / 0.266	- / 0.133	- / 0.000	- / 7.701	
2.2) Production Support - Ship		- / 17.551	- / 0.000	- / 1.600	- / 1.740	- / 0.000	- / 1.740	- / 0.763	- / 0.000	- / 0.000	- / 0.000	- / 21.654	
2.3) Production Support - Sub		- / 3.978	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 3.978	
2.4) Other DSA - Ship		- / 31.605	- / 3.667	- / 2.724	- / 3.102	- / 0.000	- / 3.102	- / 1.656	- / 0.263	- / 0.194	- / 0.000	- / 43.211	
2.5) Other DSA - Sub		- / 7.284	- / 0.314	- / 0.162	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 7.760	
2.6) NMT System Operational Verification Test (SOVT)		- / 5.084	- / 1.258	- / 1.198	- / 0.960	- / 0.000	- / 0.960	- / 0.712	- / 0.883	- / 0.094	- / 0.000	- / 10.189	
2.7) NMT Technical Refresh ⁽⁶⁾		- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 3.862	- / 0.000	- / 0.000	- / 76.924	
Subtotal: Support		- / 70.513	- / 5.977	- / 5.809	- / 6.186	- / -	- / 6.186	- / 4.175	- / 5.274	- / 0.421	- / -	- / 171.417	
Installation													
Modification Item 1 of 1: 3216 Navy Multiband Terminal (NMT) - Afloat		- / 241.830	- / 27.541	- / 31.268	- / 15.393	- / 0.000	- / 15.393	- / 21.829	- / 4.106	- / 5.037	- / 0.000	- / 347.004	
Subtotal: Installation		- / 241.830	- / 27.541	- / 31.268	- / 15.393	- / -	- / 15.393	- / 21.829	- / 4.106	- / 5.037	- / -	- / 347.004	
Total													
Total Cost (Procurement + Support + Installation)		756.149	33.518	60.417	50.589	0.000	50.589	47.050	9.380	5.458	0.000	1,035.623	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13										P-1 Line Item Number / Title: 3216 / Navy Multiband Terminal (NMT)										Modification Number / Title: 1 / 3216 Navy Multiband Terminal (NMT) - Afloat											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: 3216 Navy Multiband Terminal (NMT) - Afloat																															
Manufacturer Information																															
Manufacturer Name: Raytheon															Manufacturer Location: Marlborough, MA																
Administrative Leadtime (in Months): 3															Production Leadtime (in Months): 15																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates		Jan 2018				Jan 2019				Jan 2020																					
Delivery Dates		Apr 2019				Apr 2020				Apr 2021																					
Installation Information																															
Method of Implementation: Method:: Installation Name: Navy Multiband Terminal (NMT) - Afloat																															
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		158 / 241.830		15 / 27.541		12 / 31.268		- / -		- / -		- / -		1 / 3.638		1 / 2.053		- / -		- / -		0 / 0.000		187 / 306.330							
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2019		- / -		- / -		- / -		5 / 15.393		0 / 0.000		5 / 15.393		- / -		- / -		- / -		- / -		0 / 0.000		5 / 15.393							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		5 / 18.191		- / -		- / -		- / -		0 / 0.000		5 / 18.191							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 2.053		1 / 5.037		- / -		0 / 0.000		2 / 7.090							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		158 / 241.830		15 / 27.541		12 / 31.268		5 / 15.393		0 / 0.000		5 / 15.393		6 / 21.829		2 / 4.106		1 / 5.037		- / -		0 / 0.000		199 / 347.004							
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	156	2	7	1	7	-	7	2	3	-	-	-	5	-	-	5	1	-	1	1	-	-	-	-	1	-	-	-	-	-	199
Out	154	2	2	7	1	7	-	7	2	3	-	-	-	5	-	-	5	1	-	1	1	-	-	-	-	1	-	-	-	-	199
Footnotes: ⁽⁵⁾ 1. Procurement costs reflect current Raytheon contract pricing and vary depending on number of terminals procured and Economic Ordering Quantity (EOQ) savings. Procurement costs fluctuate for the various NMT system configurations by ship type which influences average unit cost. The increase in unit cost for procurement from FY19 to FY20 is due to cost variances of different ship configuration terminal types. FY19 procurements include 2 Terminals for 1 LHD platform (Large Deck). The FY19 LHD 2 terminal buy brings down the AUC in FY19 and is the reason for the increased FY20 procurement AUC. 2.																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13	P-1 Line Item Number / Title: 3216 / Navy Multiband Terminal (NMT)	Modification Number / Title: 1 / 3216 Navy Multiband Terminal (NMT) - Afloat
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
NMT installation updates increase FY18 installs by Qty 1 (USS BULKELEY) originally planned in FY19. FY19 installation update shifts the USS MESA VERDE originally planned in FY21 and results in a net zero change for FY19 install quantities. These fielding plan updates are Fleet driven and are dependent on limited ship and submarine availabilities to meet Full Operational Capability (FOC) in FY23. 3. Integration, Assembly and Test (IA&T) and System Operational Verification Test (SOVT) engineering services are required to deliver and install the NMT Terminal System. IA&T costs are budgeted in the year of the hardware delivery. Procurement Lead Time (PLT) is 15 months to deliver the first terminal. Deliveries continue over a 12-month period with the last delivery occurring 27 months after award. For example, the last terminal delivery from the FY20 buy can deliver as late as March 2022. System Operational Verification Test (SOVT) costs are tied to the end of the installation availability. 4. DSA estimates are based off actual historical installation and DSA costs. The DSA cost is derived as a percentage of total installation cost with 75% of the costs being required the year prior for installation design work and 25% required the year of the actual installation. 5. Install cost fluctuations are driven by the configuration of the NMT system and the platform type. For example, estimated installation cost for a LHD 1 class (large deck) platform with dual Q/X/Ka capability is approximately three times greater than a DDG 51 class platform (small deck) with the same Q/X/Ka capability. Large deck ships consist of 2 Terminal Communication Groups with 4, 5, or 6 antennas. The antenna mix is dependent on the specific configuration requirement for each ship. For example, Small deck ships consist of 1 Terminal Communication Group with 2, 3, or 4 antennas. There are 13 variants of the NMT and antenna size varies by class (ranging from 54" to 96"). ⁽⁶⁾ 1. Technical Refresh is an upgrade to the Operator Interface Unit (OIU) to address obsolescence issues as well as improve the NMT cyber security posture. Hardware improvements enable hosting of new more secure operating systems and allow for replacement of key components thus reducing maintenance and sparing costs as well as improve reliability.		

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Exhibit P-3a, Individual Modification: PB 2020 Navy						Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13				P-1 Line Item Number / Title: 3216 / Navy Multiband Terminal (NMT)				Modification Number / Title: 2 / 3216 Navy Multiband Terminal (NMT) - Ashore			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:					

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	110.872	5.144	7.854	17.525	0.000	17.525	1.524	8.082	0.000	0.000	0.000	151.001
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	110.872	5.144	7.854	17.525	0.000	17.525	1.524	8.082	0.000	0.000	0.000	151.001
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	110.872	5.144	7.854	17.525	0.000	17.525	1.524	8.082	0.000	0.000	0.000	151.001
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The FY20 request provides for the procurement of 6 and installation of 1 NMT shore terminals to align to remaining shore sites. Budget updates also include the breakout of Integration, Assembly and Test (IA&T) and System Operational Verification Test (SOVT) costs. IA&T efforts are performed once terminals and antennas are delivered from Raytheon Production Facilities to the government site SSC Atlantic, Charleston SC. SSC Atlantic serves as the lead integrator and performs Pre-Installation, Test and Check-Out (PITCO) of the terminals and antennas required for NMT shore platforms. SOVT efforts are performed by SSC Atlantic, Charleston, SC and SSC Pacific, San Diego, CA and validate the NMT system is operational post installation on ashore platforms.

[Ashore] Provides jam resistant, low probability of interception and detection for protected extended rate communications with Advanced Extremely High Frequency (AEHF) capability.

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13				P-1 Line Item Number / Title: 3216 / Navy Multiband Terminal (NMT)						Modification Number / Title: 2 / 3216 Navy Multiband Terminal (NMT) - Ashore			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: Shore stations				Modification Type: TBD				Related RDT&E PEs: 0303109N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: 3216 Navy Multiband Terminal (NMT) - Ashore													
B Kits													
Recurring													
1.1.1) Ashore - NonOrganic ⁽⁷⁾	32 / 65.804	1 / 3.377	1 / 3.266	6 / 14.975	- / -	6 / 14.975	- / -	- / -	- / -	- / -	- / -	40 / 87.422	
Subtotal: Recurring	- / 65.804	- / 3.377	- / 3.266	- / 14.975	- / -	- / 14.975	- / -	- / -	- / -	- / -	- / 0.000	- / 87.422	
Subtotal: 3216 Navy Multiband Terminal (NMT) - Ashore	32 / 65.804	1 / 3.377	1 / 3.266	6 / 14.975	- / -	6 / 14.975	- / -	- / -	- / -	- / -	- / -	40 / 87.422	
Subtotal: Procurement, All Modification Items	- / 65.804	- / 3.377	- / 3.266	- / 14.975	- / -	- / 14.975	- / -	- / -	- / -	- / -	- / 0.000	- / 87.422	
Support (All Modification Items)													
2.1) NMT Integration, Assembly & Test (IA&T)	- / 1.163	- / -	- / 0.125	- / 0.256	- / -	- / 0.256	- / 0.392	- / -	- / -	- / -	- / -	- / 1.936	
2.2) Production Support - Ashore	- / 2.958	- / 0.205	- / 0.284	- / 1.185	- / -	- / 1.185	- / -	- / -	- / -	- / -	- / -	- / 4.632	
2.3) Other DSA - Ashore	- / 0.794	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.794	
2.4) NMT System Operational Verification Test (SOVT)	- / 1.281	- / 0.084	- / 0.172	- / 0.087	- / -	- / 0.087	- / 0.089	- / 0.635	- / -	- / -	- / -	- / 2.348	
Subtotal: Support	- / 6.196	- / 0.289	- / 0.581	- / 1.528	- / -	- / 1.528	- / 0.481	- / 0.635	- / -	- / -	- / 0.000	- / 9.710	
Installation													
Modification Item 1 of 1: 3216 Navy Multiband Terminal (NMT) - Ashore	- / 38.872	- / 1.478	- / 4.007	- / 1.022	- / 0.000	- / 1.022	- / 1.043	- / 7.447	- / 0.000	- / 0.000	- / 0.000	- / 53.869	
Subtotal: Installation	- / 38.872	- / 1.478	- / 4.007	- / 1.022	- / -	- / 1.022	- / 1.043	- / 7.447	- / -	- / -	- / 0.000	- / 53.869	
Total													
Total Cost (Procurement + Support + Installation)	110.872	5.144	7.854	17.525	0.000	17.525	1.524	8.082	0.000	0.000	0.000	151.001	

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Exhibit P-3a, Individual Modification: PB 2020 Navy												Date: March 2019																			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13								P-1 Line Item Number / Title: 3216 / Navy Multiband Terminal (NMT)								Modification Number / Title: 2 / 3216 Navy Multiband Terminal (NMT) - Ashore															
ID Code (A=Service Ready, B=Not Service Ready) :												MDAP/MAIS Code:																			
Modification Item 1 of 1: 3216 Navy Multiband Terminal (NMT) - Ashore																															
Manufacturer Information																															
Manufacturer Name: Raytheon												Manufacturer Location: Marlborough, MA																			
Administrative Leadtime (in Months): 3												Production Leadtime (in Months): 15																			
Dates	FY 2018			FY 2019			FY 2020			FY 2021			FY 2022			FY 2023			FY 2024												
Contract Dates	Jan 2018			Jan 2019			Jan 2020																								
Delivery Dates	Apr 2019			Apr 2020			Apr 2021																								
Installation Information																															
Method of Implementation: Method:: Installation Name: Navy Multiband Terminal (NMT) - Ashore																															
Installation Cost		Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total																		
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																		
Prior Years		27 / 38.872	1 / 1.478	2 / 2.671	- / -	- / -	- / -	- / -	2 / 2.128	- / -	- / -	0 / 0.000	32 / 45.149																		
FY 2018		- / -	- / -	1 / 1.336	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	1 / 1.336																		
FY 2019		- / -	- / -	- / -	1 / 1.022	0 / 0.000	1 / 1.022	- / -	- / -	- / -	- / -	0 / 0.000	1 / 1.022																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	1 / 1.043	5 / 5.319	- / -	- / -	0 / 0.000	6 / 6.362																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2024		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		27 / 38.872	1 / 1.478	3 / 4.007	1 / 1.022	0 / 0.000	1 / 1.022	1 / 1.043	7 / 7.447	- / -	- / -	0 / 0.000	40 / 53.869																		
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	25	2	-	-	1	-	-	2	1	-	-	1	-	-	-	1	-	3	2	2	-	-	-	-	-	-	-	-	-	-	40
Out	23	2	2	-	-	1	-	-	2	1	-	-	1	-	-	-	1	-	3	2	2	-	-	-	-	-	-	-	-	-	40
Footnotes: ⁽⁷⁾ 1. Procurement costs reflect current Raytheon contract pricing and vary depending on number of terminals procured and Economic Ordering Quantity (EOQ) savings. FY20 shore procurement increase by Qty 1 realizes Unit Cost savings due to EOQ and finalizes NMT shore terminal buys. 2. Integration, Assembly and Test (IA&T) and System Operational Verification Test (SOVT) engineering services are required to deliver and install the NMT Terminal System. IA&T costs are budgeted in the year of the hardware delivery. Procurement Lead Time (PLT) is 15 months to deliver the first terminal. Deliveries continue over a 12-																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13	P-1 Line Item Number / Title: 3216 / Navy Multiband Terminal (NMT)	Modification Number / Title: 2 / 3216 Navy Multiband Terminal (NMT) - Ashore
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
month period with the last delivery occurring 27 months after award. For example, the last FY20 terminal buy can deliver as late as March 2022. System Operational Verification Test (SOVT) costs are tied to the end of the shore installation availability. 3. FY20 shore installation decrease by Qty 1 reflects adjustments to the NMT shore fielding schedule to meet FOC in FY23. FY20 shore installation cost decrease from FY19 to FY20 is due to variances in shore site configuration requirements.		

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Exhibit P-3a, Individual Modification: PB 2020 Navy									Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13				P-1 Line Item Number / Title: 3216 / Navy Multiband Terminal (NMT)					Modification Number / Title: 3 / Assured C2 Modems				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Resource Summary		Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)		-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)		0.000	11.514	26.495	12.464	0.000	12.464	18.981	0.000	0.000	0.000	0.000	69.454
Less PY Advance Procurement (\$ in Millions)		-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)		0.000	11.514	26.495	12.464	0.000	12.464	18.981	0.000	0.000	0.000	0.000	69.454
Plus CY Advance Procurement (\$ in Millions)		-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)		0.000	11.514	26.495	12.464	0.000	12.464	18.981	0.000	0.000	0.000	0.000	69.454
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)													
Initial Spares (\$ in Millions)		-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)		-	-	-	-	-	-	-	-	-	-	-	-
Description: Assured C2 Modems: FY20 continues Modem tech refresh that directly supports Assured Command and Control (AC2) posture, SATCOM reliability, space resiliency via band diversity and redundancy for MILSATCOM.													

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13				P-1 Line Item Number / Title: 3216 / Navy Multiband Terminal (NMT)				Modification Number / Title: 3 / Assured C2 Modems					
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: Shore Stations, Ships				Modification Type: TBD				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: Assured C2 Modems													
A Kits													
Recurring													
1.1.1) Assured C2 Modems - NonOrganic ⁽⁸⁾	- / -	112 / 4.211	242 / 9.146	90 / 3.260	- / -	90 / 3.260	308 / 9.313	- / -	- / -	- / -	- / -	752 / 25.930	
Subtotal: Recurring	- / 0.000	- / 4.211	- / 9.146	- / 3.260	- / -	- / 3.260	- / 9.313	- / -	- / -	- / -	- / 0.000	- / 25.930	
Subtotal: Assured C2 Modems	- / -	112 / 4.211	242 / 9.146	90 / 3.260	- / -	90 / 3.260	308 / 9.313	- / -	- / -	- / -	- / -	752 / 25.930	
Subtotal: Procurement, All Modification Items	- / 0.000	- / 4.211	- / 9.146	- / 3.260	- / -	- / 3.260	- / 9.313	- / -	- / -	- / -	- / 0.000	- / 25.930	
Support (All Modification Items)													
2.1) Production Support - Assured C2 Modems	- / -	- / 0.253	- / 0.549	- / 0.196	- / -	- / 0.196	- / 0.286	- / -	- / -	- / -	- / -	- / 1.284	
2.2) IA&T - Assured C2 Modems	- / -	- / 3.131	- / 6.901	- / 2.618	- / -	- / 2.618	- / 1.127	- / -	- / -	- / -	- / -	- / 13.777	
2.3) SOVT - Assured C2 Modems	- / -	- / 0.537	- / 1.711	- / 1.466	- / -	- / 1.466	- / 1.246	- / -	- / -	- / -	- / -	- / 4.960	
Subtotal: Support	- / 0.000	- / 3.921	- / 9.161	- / 4.280	- / -	- / 4.280	- / 2.659	- / -	- / -	- / -	- / 0.000	- / 20.021	
Installation													
Modification Item 1 of 1: Assured C2 Modems	- / 0.000	- / 3.382	- / 8.188	- / 4.924	- / 0.000	- / 4.924	- / 7.009	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 23.503	
Subtotal: Installation	- / 0.000	- / 3.382	- / 8.188	- / 4.924	- / -	- / 4.924	- / 7.009	- / -	- / -	- / -	- / 0.000	- / 23.503	
Total													
Total Cost (Procurement + Support + Installation)	0.000	11.514	26.495	12.464	0.000	12.464	18.981	0.000	0.000	0.000	0.000	69.454	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13										P-1 Line Item Number / Title: 3216 / Navy Multiband Terminal (NMT)										Modification Number / Title: 3 / Assured C2 Modems											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: Assured C2 Modems																															
Manufacturer Information																															
Manufacturer Name: COMTECH															Manufacturer Location: Tempe, AZ																
Administrative Leadtime (in Months): 1															Production Leadtime (in Months): 3																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates		Mar 2018				Nov 2018				Nov 2019																					
Delivery Dates		Jun 2018				Feb 2019				Feb 2020																					
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: Assured C2 Modems																															
Installation Cost		Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total								
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)								
Prior Years		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2018		- / -	112 / 3.382		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		112 / 3.382						
FY 2019		- / -	- / -		242 / 8.188		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		242 / 8.188						
FY 2020		- / -	- / -		- / -		90 / 4.924		0 / 0.000		90 / 4.924		- / -		- / -		- / -		- / -		- / -		0 / 0.000		90 / 4.924						
FY 2021		- / -	- / -		- / -		- / -		- / -		- / -		308 / 7.009		- / -		- / -		- / -		- / -		0 / 0.000		308 / 7.009						
FY 2022		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2023		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2024		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
To Complete		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
Total		- / -	112 / 3.382		242 / 8.188		90 / 4.924		0 / 0.000		90 / 4.924		308 / 7.009		- / -		- / -		- / -		- / -		0 / 0.000		752 / 23.503						
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	48	64	-	18	105	119	-	16	36	38	-	114	116	78	-	-	-	-	-	-	-	-	-	-	-	-	-	752
Out	-	-	-	48	64	-	18	105	119	-	16	36	38	-	114	116	78	-	-	-	-	-	-	-	-	-	-	-	-	-	752
Footnotes: ⁽⁸⁾ 1. The AC2 modems will be fielded at 7 DISA shore teleport sites and on 276 ship platforms. Up to Qty 68 modems are required for each DISA shore site for a total of 476 shore modems. 2. FY20 funds the procurement and installation of AC2 modems on Qty 42 ships and Qty 1 shore site (Qty 48 modems). 3. FY21 AC2 modem increase provides \$12.5M for an additional Qty 283 AC2 modems to execute current warfighter plans required for National Command and Control capability. 4. FY19-FY21 DSA costs were included in previous budget submissions but have since been removed as the AC2 modem installation																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13	P-1 Line Item Number / Title: 3216 / Navy Multiband Terminal (NMT)	Modification Number / Title: 3 / Assured C2 Modems
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
will be performed as an Engineering Change and do not require a 75%/25% DSA planning structure. 5. Ship Modem installations will take place during a Window of Opportunity (WOO) availability that includes a 8 day window to perform and complete the installation.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy **Date:** March 2019

Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 14: Shore Communications	P-1 Line Item Number / Title: 3302 / Joint Communications Support Element (JCSE)

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	24.137	4.256	4.292	4.293	0.000	4.293	4.478	4.757	4.545	4.636	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	24.137	4.256	4.292	4.293	0.000	4.293	4.478	4.757	4.545	4.636	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	24.137	4.256	4.292	4.293	0.000	4.293	4.478	4.757	4.545	4.636	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Joint Communications Support Element (JCSE) Program is responsible for procuring hardware and software to support Defensive Cyber Operations, Transport technologies (narrowband, wideband and protected satellite communications), C4 Architecture (network elements that provide access to the Defense Information Systems Network (DISN) cloud), and C2 On-The-Move (land, air and ground based tactical capabilities) in concert with Strategic Planning Guidance. JCSE's Modernization Program is structured around Combatant Command (CCMD) requirements using emerging technologies. Services formally influence JCSE's acquisition plan through semi-annual program reviews and make recommendations in concert with Major Defense Acquisition Program (MDAP) schedules, ensuring that Service dollars meet Joint Service requirements. The modernization program goals include meeting emerging real-world operational requirements with improved capabilities, smaller footprint, reduced operations and maintenance costs, and seamless integration with the global information grid.

This line funds the Department of the Navy's portion of the JCSE Program. This program is jointly funded by Army, Navy, Marine Corps, and Air Force in support of Joint Tactical Force and Joint Special Operations Task Force Headquarters.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 14: Shore Communications						P-1 Line Item Number / Title: 3302 / Joint Communications Support Element (JCSE)				
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A			Other Related Program Elements: N/A			
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	JCS Communications Equipment				- / 24.137	- / 4.256	- / 4.292	- / 4.293	- / -	- / 4.293
P-40	Total Gross/Weapon System Cost				- / 24.137	- / 4.256	- / 4.292	- / 4.293	- / 0.000	- / 4.293
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										
Justification: FY 2020 funds the procurement of Communication requirements identified to support personnel and equipment to establish and maintain emergency communications detachments in support of Joint Task Force and Joint Special Operations Task Force Commanders. Per Defense Planning Guidance (DPG) and Director, Joint Staff Memorandum (DJSJM)0291-14, the Navy is mandated to fund 1/3rd fair share of JCSE's validated Modernization Program.										

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 14						P-1 Line Item Number / Title: 3302 / Joint Communications Support Element (JCSE)									Aggregated Items Title: JCS Communications Equipment					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
1) Joint Communication Support Element Modernization																				
1.1) Joint Communication Support Element Modernization ⁽¹⁾	A		-	-	24.137	-	-	4.256	-	-	4.292	-	-	4.293	-	-	-	-	-	4.293
Subtotal: 1) Joint Communication Support Element Modernization			-	-	24.137	-	-	4.256	-	-	4.292	-	-	4.293	-	-	-	-	-	4.293
Total			-	-	24.137	-	-	4.256	-	-	4.292	-	-	4.293	-	-	-	-	-	4.293

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

Footnotes:

⁽¹⁾ Quantities are not shown. Quantities and equipment type are determined by the COCOM on an annual basis based on Joint Task Force and Joint Special Operations Task Force operational requirements for critical communications.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 15: Cryptographic Equipment							P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)					
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A				Other Related Program Elements: 0303140N, 0305327N					
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1,656.463	88.946	151.828	166.540	0.000	166.540	170.829	169.077	172.442	175.873	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,656.463	88.946	151.828	166.540	0.000	166.540	170.829	169.077	172.442	175.873	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1,656.463	88.946	151.828	166.540	0.000	166.540	170.829	169.077	172.442	175.873	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	0.951	1.968	-	-	-	-	-	-	-	-	2.919
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Information Systems Security Program (ISSP) ensures the protection of Navy and joint cyberspace systems from exploitation and attack. Systems include wired and wireless telecommunications systems, cybersecurity systems, and the content processed, stored, or transmitted therein. ISSP includes protection of the Navy's National Security Systems (NSS).

The rapid change in the underlying commercial and government cyber infrastructures makes cybersecurity an increasingly complex and dynamic problem. ISSP provides the Navy's warfighter the essential information trust characteristics of availability, confidentiality, integrity, authentication, and non-repudiation. Cybersecurity capabilities must evolve quickly to meet the rapidly evolving threats and vulnerabilities.

Programs within the ISSP budget include:

P5 / Public Key Infrastructure (PKI): PKI implements a secure infrastructure for the generation, management, and delivery of digital certificates for secure electronic transactions, hardware certificate-based two-way authentication to networks, applications, web servers, and secure email.

P5 / Navy Cyber Situational Awareness (NCSA): NCSA is a command and control infrastructure that provides Navy commanders with timely, trusted, and comprehensive Situational Awareness (SA) of the cyberspace domain to include tailored, near real-time visualization of network health, vulnerabilities, and operational readiness through the correlation of data from multiple sources. NCSA enables early threat detection and timely decision making. NCSA ashore systems will enable Navy commanders to monitor, assess, plan, and direct Navy networks to provide a high-level of confidence that operational missions can be executed as planned in adverse cyber conditions. Cyber SA will be provided via web-accessible services generated from a primary core suite fielded at Navy Cyber Defense Operations Command (NCDOD). Visualizations and analytics will be customized based on end user needs, shareable and tailorable between different end users. End users include Fleet Cyber Command/Commander Tenth Fleet (FCC/C10F), Fleet Maritime Operations Centers (MOCs), NCDOD, and Navy Network Warfare Command (NNWC). NCSA procures equipment to collect, curate, analyze, and visualize maritime operations critical for providing Navy commanders with timely, trusted, and comprehensive SA of the cyberspace domain; Data as a Service (DaaS) which provides the ability to ingest disparate data from numerous data sources; analytics suite of software and logic to integrate and translate the data ingested by the DaaS component; visualization/user interface to display cyber SA data that are relevant to the unique needs of the Cyber Commander and for display via common visual services; as well as equipment for platforms conducting Ballistic Missile Defense (BMD) and Nuclear Command, Control, and Communications, Navy (NC3-N) missions. The data that is collected and analyzed via SHARKCAGE will be presented and visualized via the NCSA capability. Joint Regional Security Stacks (JRSS)/Cyber Situational Awareness Analytics Cloud (CSAAC) will integrate NCSA with CSAAC which achieves an integrated cyberspace mission to support Joint, maritime cyber, and mission operations. Ensures seamless information exchange and sharing of analytics, providing shared cyber SA. CSAAC is one of the five key elements of Joint Information Environment (JIE), providing cyber SA tools, collecting and analyzing data from the JRSS and joint management system.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 15: Cryptographic Equipment		P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0303140N, 0305327N
Line Item MDAP/MAIS Code: N/A		
P5 / Computer Network Defense (CND) Afloat: The CND afloat capability will remain until all systems have transitioned to Consolidated Afloat Networks and Enterprise Services (CANES). CND afloat Operating System Environment (OSE) includes host-based protection tools, system vulnerability tools, cyber remediation tools, supporting hardware and software for Department of Defense (DoD) mandated tools, enhanced data correlation tools, switches, ancillary devices and other related security tools. P5 / Counter Insider Threat Capability (CITC): The Navy CITC seeks to meet Department of Defense (DoD) and Department of the Navy (DoN) direction to deter, detect, and mitigate the risk of compromise due to insider threats. Navy CITC will establish an Analytic Hub and enable the accomplishment of these objectives by providing a User Activity Monitoring (UAM) capability, a mechanism for fusing collected information with security risk data from multiple other sources, and a graphical display to facilitate threat analysis, identification, and initial action. This effort is to procure, configure, and install hardware and software in support of the Insider Threat program. P3A / Computer Network Defense (CND) Ashore: CND ashore provides capabilities to secure the Cyber Domain. CND is a set of processes and protective measures that use computer networks to detect, monitor, protect, analyze and defend against network infiltrations resulting in service/network denial, degradation and disruptions. CND enables a government or military institute/organization to defend against network attacks perpetrated by malicious or adversarial computer systems or networks. The Fixed Submarine Broadcast System (FSBS) includes the Nuclear Command, Control, and Communications, Navy (NC3-N) requirement (details held at a higher classification). P3A / Navy Cryptography (Crypto): Navy Crypto modernizes legacy cryptographic equipment which includes families of Communications Security (COMSEC) and Transmission Security (TRANSEC) devices that are divided into crypto voice, crypto data, crypto products and associated ancillary devices. These devices provide modern cryptographic solutions to replace obsolete, legacy devices within the crypto categories in order to meet mandated National Security Agency (NSA) cease key dates for modernized encryption. Advanced Cryptographic Capabilities (ACC), will provide NSA mandated cryptographic security software modernization of various communications security devices by cease key dates (details held at a higher classification). Cryptographic Modernization 2 (CM2) provides NSA mandated cryptographic modernization of various communications security devices (details held at a higher classification). P3A / Key Management (KM): KM is a collection of Tier 2 security equipment, Key Management Infrastructure (KMI), and Tier 3 equipment Simple Key Loader (SKL). KMI will be a single, automated, network-accessible, electronic-based Key Management (KM) and predominantly electronic cryptographic product delivery infrastructure. It will provide Net Centric, reliable, timely, and secure COMSEC material management and distribution. It will additionally provide the means for secure ordering, generation, production, distribution, management and auditing of cryptographic products. The NSA mandates a tech refresh for the KMI system every five years. P3A / SHARKCAGE: SHARKCAGE is a global, federated Defensive Cyberspace Operations (DCO) enclave consisting of shore sensor nodes, DCO analysis workbenches, and analytic nodes. Utilizing one-way passive taps in a protected, isolated, classified environment, SHARKCAGE consolidates cyber event data from multiple platforms and networks, providing Navy DCO forces with a shared environment and common platform for integrated workflow, collaboration, and analysis. SHARKCAGE efficiently detects, correlates, and analyzes nation and non-nation state attacks against maritime data and the Naval Networking Environment (NNE). The data that is collected and analyzed via SHARKCAGE will be presented and visualized via the NCSA capability.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy							Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 15: Cryptographic Equipment					P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)					
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A				Other Related Program Elements: 0303140N, 0305327N			
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / Info Systems Security Program (ISSP)	P-5a			- / 1,124.689	- / 7.998	- / 5.728	- / 8.038	- / 0.000	- / 8.038
P-3a	2 / Computer Network Defense (CND) Increment 2- Ashore (DA070) (Various)				- / 166.084	- / 24.154	- / 27.934	- / 26.791	- / 0.000	- / 26.791
P-3a	3 / Navy Cryptography (Crypto) - Afloat (DA071) (Various)				- / 213.129	- / 27.795	- / 40.031	- / 35.281	- / 0.000	- / 35.281
P-3a	4 / Navy Cryptography (Crypto) - Ashore (DA071) (Initial)				- / 49.686	- / 6.735	- / 38.353	- / 34.728	- / 0.000	- / 34.728
P-3a	5 / Key Management (KM) - Afloat (DA005) (Various)				- / 60.900	- / 5.242	- / 5.073	- / 5.648	- / 0.000	- / 5.648
P-3a	6 / Key Management (KM) - Ashore (DA005) (Various)				- / 41.975	- / 4.803	- / 6.212	- / 6.026	- / 0.000	- / 6.026
P-3a	7 / SHARKCAGE - Afloat (DA070) (Initial)				- / 0.000	- / 3.083	- / 13.260	- / 38.841	- / 0.000	- / 38.841
P-3a	8 / SHARKCAGE - Ashore (DA070) (Various)				- / 0.000	- / 9.136	- / 15.237	- / 11.187	- / 0.000	- / 11.187
P-40	Total Gross/Weapon System Cost				- / 1,656.463	- / 88.946	- / 151.828	- / 166.540	- / 0.000	- / 166.540
Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / Info Systems Security Program (ISSP)	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	2 / Computer Network Defense (CND) Increment 2- Ashore (DA070) (Various)				- / 27.965	- / 28.707	- / 29.485	- / 30.205	Continuing	Continuing
P-3a	3 / Navy Cryptography (Crypto) - Afloat (DA071) (Various)				- / 33.710	- / 35.650	- / 36.878	- / 29.910	Continuing	Continuing
P-3a	4 / Navy Cryptography (Crypto) - Ashore (DA071) (Initial)				- / 29.842	- / 33.678	- / 33.714	- / 42.067	Continuing	Continuing
P-3a	5 / Key Management (KM) - Afloat (DA005) (Various)				- / 8.084	- / 8.537	- / 6.827	- / 6.297	Continuing	Continuing
P-3a	6 / Key Management (KM) - Ashore (DA005) (Various)				- / 3.680	- / 3.461	- / 5.426	- / 6.201	Continuing	Continuing
P-3a	7 / SHARKCAGE - Afloat (DA070) (Initial)				- / 39.292	- / 41.154	- / 37.885	- / 32.656	Continuing	Continuing
P-3a	8 / SHARKCAGE - Ashore (DA070) (Various)				- / 15.116	- / 4.805	- / 9.069	- / 15.237	Continuing	Continuing
P-40	Total Gross/Weapon System Cost				- / 170.829	- / 169.077	- / 172.442	- / 175.873	Continuing	Continuing
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										
Justification: The FY2019 to FY2020 budget increase of \$14.712 million is driven by SHARKCAGE, which will increase fielding of their cybersecurity infrastructure to the fleet and Counter Insider Threat Capability (CITC), which is a functional transfer from the National Intelligence Agency (NIA), previously in LI 8106. In addition, the FY20 budget will procure the following: P5 / Public Key Infrastructure (PKI) (DA018): (10) PKI systems to include: Real-Time Automated Personal Identification System (RAPIDS) hardware/software, Navy Certificate Validation Infrastructure (NCVI) Secret Internet Protocol Router Network (SIPRNet) & Non-Classified Internet Protocol Router Network (NIPRNet) hardware/software, and Logon Token product end items										

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 15: Cryptographic Equipment		P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0303140N, 0305327N
Line Item MDAP/MAIS Code: N/A		
P5 / Navy Cyber Situational Awareness (NCSA) (DA070): (1) NCSA Suite P5 / Computer Network Defense (CND) Afloat (DA070): (19) CND Afloat units P5 / Counter Insider Threat Capability (CITC) (DA070): (12) Afloat User Activity Monitoring (UAM) units and (1) Ashore UAM Data Node unit P3A / Computer Network Defense (CND) Ashore (DA070): Various equipment to secure Navy Ashore networks, i.e., hardware and software such as host-based protection tools, Department of Defense (DoD) mandated cyber security tools, cyber security capabilities, servers, laptops, ancillary devices and CND Deployer Toolkits (CDTs). P3A / Navy Cryptography (Crypto) (DA071): (84) Afloat VINSON/Advanced Narrowband Digital Voice Terminal Cryptographic Modernization (VACM) ship sets (NonOrganic), (193) Afloat In-Line Network Encryptors (INE) (Organic), (13) Afloat Advanced Cryptographic Capability (ACC), (87) Afloat KGV-11 (Organic); (1,160) Ashore VACM devices (Organic), (9) Ashore ACC (Organic), (32) Ashore VACM ashore sets (NonOrganic); Overall Navy Crypto FY20 decrease due to change in requirement that reduces the number of required devices to support ACC to meet the National Security Agency (NSA) mandated cryptographic security software modernization of various communications security devices. P3A / Key Management (KM) (DA005): (212) Afloat Simple Key Loaders (SKL), (38) Afloat Key Management Infrastructure (KMI) Tech Refresh; (108) Ashore SKL, (65) Ashore KMI Tech Refresh P3A / SHARKCAGE (DA070): (53) Afloat SHARKCAGE Suites, (1) Ashore Analytic Suite, (7) Ashore Sensor Suites		

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019											
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15						P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)												Item Number / Title [DODIC]: 1 / Info Systems Security Program (ISSP)					
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:													
Resource Summary						Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
Procurement Quantity (<i>Units in Each</i>)						-			-			-			-			-			-		
Gross/Weapon System Cost (<i>\$ in Millions</i>)						1,124.689			7.998			5.728			8.038			0.000			8.038		
Less PY Advance Procurement (<i>\$ in Millions</i>)						-			-			-			-			-			-		
Net Procurement (P-1) (<i>\$ in Millions</i>)						1,124.689			7.998			5.728			8.038			0.000			8.038		
Plus CY Advance Procurement (<i>\$ in Millions</i>)						-			-			-			-			-			-		
Total Obligation Authority (<i>\$ in Millions</i>)						1,124.689			7.998			5.728			8.038			0.000			8.038		
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																							
Initial Spares (<i>\$ in Millions</i>)						-			-			-			-			-			-		
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)						-			-			-			-			-			-		
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																							
Cost Elements		Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total						
		Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)				
Hardware - Consolidated Prior Year Requirements Cost																							
Non Recurring Cost																							
1.1.1) Consolidated Prior Year Requirements ⁽¹⁾		-	-	1,039.929	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000				
Subtotal: Non Recurring Cost		-	-	1,039.929	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000				
Subtotal: Hardware - Consolidated Prior Year Requirements Cost		-	-	1,039.929	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000				
Hardware - Public Key Infrastructure (PKI) (DA018) Cost																							
Recurring Cost																							
2.1.1) PKI - Procurement ^(†)		0.747	45,316	33.829	88.500	10	0.885	88.500	10	0.885	88.500	10	0.885	-	-	0.000	88.500	10	0.885				
Subtotal: Recurring Cost		-	-	33.829	-	-	0.885	-	-	0.885	-	-	0.885	-	-	0.000	-	-	0.885				
Subtotal: Hardware - Public Key Infrastructure (PKI) (DA018) Cost		-	-	33.829	-	-	0.885	-	-	0.885	-	-	0.885	-	-	0.000	-	-	0.885				
Hardware - Navy Cyber Situational Awareness (NCSA) (DA070) Cost																							
Recurring Cost																							
3.1.1) NCSA - Procurement ^(†)		-	-	0.000	900.000	2	1.800	900.000	1	0.900	1,000.000	1	1.000	-	-	0.000	1,000.000	1	1.000				
Subtotal: Recurring Cost		-	-	0.000	-	-	1.800	-	-	0.900	-	-	1.000	-	-	0.000	-	-	1.000				

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Exhibit P-5, Cost Analysis: PB 2020 Navy											Date: March 2019							
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15						P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)						Item Number / Title [DODIC]: 1 / Info Systems Security Program (ISSP)						
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Subtotal: Hardware - Navy Cyber Situational Awareness (NCSA) (DA070) Cost	-	-	0.000	-	-	1.800	-	-	0.900	-	-	1.000	-	-	0.000	-	-	1.000
Hardware - Computer Network Defense (CND) Afloat Procurement Cost																		
Recurring Cost																		
4.1.1) CND Afloat Procurement ^{(†) (2)}	30.735	264	8.114	35.471	34	1.206	36.545	22	0.804	36.000	19	0.684	-	-	0.000	36.000	19	0.684
Subtotal: Recurring Cost	-	-	8.114	-	-	1.206	-	-	0.804	-	-	0.684	-	-	0.000	-	-	0.684
Subtotal: Hardware - Computer Network Defense (CND) Afloat Procurement Cost	-	-	8.114	-	-	1.206	-	-	0.804	-	-	0.684	-	-	0.000	-	-	0.684
Hardware - Counter Insider Threat Capability (CITC) - Procurement Cost																		
Recurring Cost																		
5.1.1) CITC- Afloat Procurement ^{(†) (3)}	-	-	0.000	-	-	0.000	-	-	0.000	100.000	12	1.200	-	-	0.000	100.000	12	1.200
5.1.2) CITC Ashore Procurement ^(†)	-	-	0.000	-	-	0.000	-	-	0.000	400.000	1	0.400	-	-	0.000	400.000	1	0.400
Subtotal: Recurring Cost	-	-	0.000	-	-	0.000	-	-	0.000	-	-	1.600	-	-	0.000	-	-	1.600
Subtotal: Hardware - Counter Insider Threat Capability (CITC) - Procurement Cost	-	-	0.000	-	-	0.000	-	-	0.000	-	-	1.600	-	-	0.000	-	-	1.600
Hardware - Public Key Infrastructure (PKI) Installations Cost																		
Recurring Cost																		
6.1.1) PKI - Installations	-	-	9.892	-	-	0.300	-	-	0.300	-	-	0.300	-	-	0.000	-	-	0.300
Subtotal: Recurring Cost	-	-	9.892	-	-	0.300	-	-	0.300	-	-	0.300	-	-	0.000	-	-	0.300
Subtotal: Hardware - Public Key Infrastructure (PKI) Installations Cost	-	-	9.892	-	-	0.300	-	-	0.300	-	-	0.300	-	-	0.000	-	-	0.300
Hardware - Navy Cyber Situational Awareness (NCSA) Installations Cost																		
Recurring Cost																		
7.1.1) NCSA - Installations ⁽⁴⁾	-	-	0.000	-	-	0.568	-	-	0.284	-	-	0.327	-	-	0.000	-	-	0.327
Subtotal: Recurring Cost	-	-	0.000	-	-	0.568	-	-	0.284	-	-	0.327	-	-	0.000	-	-	0.327
Subtotal: Hardware - Navy Cyber Situational Awareness (NCSA) Installations Cost	-	-	0.000	-	-	0.568	-	-	0.284	-	-	0.327	-	-	0.000	-	-	0.327

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15						P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)						Item Number / Title [DODIC]: 1 / Info Systems Security Program (ISSP)						
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Hardware - Computer Network Defense (CND) Afloat Installations Cost																		
Recurring Cost																		
8.1.1) CND Afloat Installations	-	-	15.900	-	-	2.161	-	-	1.546	-	-	1.349	-	-	0.000	-	-	1.349
Subtotal: Recurring Cost	-	-	15.900	-	-	2.161	-	-	1.546	-	-	1.349	-	-	0.000	-	-	1.349
Subtotal: Hardware - Computer Network Defense (CND) Afloat Installations Cost	-	-	15.900	-	-	2.161	-	-	1.546	-	-	1.349	-	-	0.000	-	-	1.349
Hardware - Counter Insider Threat Capability (CITC) - Installations Cost																		
Recurring Cost																		
9.1.1) CITC Afloat Installations	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.320	-	-	0.000	-	-	0.320
9.1.2) CITC Ashore Installation	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.250	-	-	0.000	-	-	0.250
Subtotal: Recurring Cost	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.570	-	-	0.000	-	-	0.570
Subtotal: Hardware - Counter Insider Threat Capability (CITC) - Installations Cost	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.570	-	-	0.000	-	-	0.570
Support - Public Key Infrastructure (PKI) Cost																		
10.1) PKI - Production Support	-	-	5.848	-	-	0.023	-	-	0.023	-	-	0.023	-	-	0.000	-	-	0.023
10.2) PKI - DSA	-	-	4.980	-	-	0.162	-	-	0.218	-	-	0.247	-	-	0.000	-	-	0.247
Subtotal: Support - Public Key Infrastructure (PKI) Cost	-	-	10.828	-	-	0.185	-	-	0.241	-	-	0.270	-	-	0.000	-	-	0.270
Support - Navy Cyber Situational Awareness (NCSA) Cost																		
11.1) NCSA - Production Support	-	-	0.000	-	-	0.087	-	-	0.048	-	-	0.070	-	-	0.000	-	-	0.070
11.2) NCSA - DSA	-	-	0.000	-	-	0.175	-	-	0.088	-	-	0.113	-	-	0.000	-	-	0.113
Subtotal: Support - Navy Cyber Situational Awareness (NCSA) Cost	-	-	0.000	-	-	0.262	-	-	0.136	-	-	0.183	-	-	0.000	-	-	0.183
Support - Computer Network Defense (CND) Afloat Cost																		
12.1) CND Train-the-Trainer ⁽⁵⁾	-	-	4.303	-	-	0.524	-	-	0.519	-	-	0.335	-	-	0.000	-	-	0.335
12.2) CND Production Support	-	-	0.609	-	-	0.060	-	-	0.063	-	-	0.036	-	-	0.000	-	-	0.036
12.3) CND DSA	-	-	1.285	-	-	0.047	-	-	0.050	-	-	0.050	-	-	0.000	-	-	0.050

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Exhibit P-5, Cost Analysis: PB 2020 Navy													Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15						P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)							Item Number / Title [DODIC]: 1 / Info Systems Security Program (ISSP)					
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Subtotal: Support - Computer Network Defense (CND) Afloat Cost	-	-	6.197	-	-	0.631	-	-	0.632	-	-	0.421	-	-	0.000	-	-	0.421
Support - Counter Insider Threat Capability (CITC) Cost																		
13.1) CITC Production Support	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.085	-	-	0.000	-	-	0.085
13.2) CITC Initial Training	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.200	-	-	0.000	-	-	0.200
13.3) CITC DSA	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.164	-	-	0.000	-	-	0.164
Subtotal: Support - Counter Insider Threat Capability (CITC) Cost	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.449	-	-	0.000	-	-	0.449
Gross/Weapon System Cost	-	-	1,124.689	-	-	7.998	-	-	5.728	-	-	8.038	-	-	0.000	-	-	8.038

(t) indicates the presence of a P-5a

Footnotes:

- (1) Consolidated Prior Year (PY) Requirements - PY requirements were consolidated into one line and include the following programs: Computer Network Defense (CND), Navy Cryptography (Crypto), Key Management (KM) and Cyber Virtual System Enclave (VSE).
- (2) Computer Network Defense (CND) Afloat Procurement: FY20 quantities decrease as Consolidated Afloat Networks and Enterprise Services (CANES) is implemented. The CND shipboard infrastructure will move ashore in order to protect Navy afloat and ashore networks from cyber threats. OSE SW is centrally managed and loads software onto hardware. Quantities reflect one system per ship platform.
- (3) Counter Insider Threat Capability (CITC): FY20 and out funding transferred from National Intelligence Agency (NIA); previously budgeted in LI 8106.
- (4) Navy Cyber Situational Awareness (NCSA): FY20 installation increase due to the types of cybersecurity tools being installed at a particular site. Install costs fluctuate with the various sets of tools required by site.
- (5) Computer Network Defense (CND) Train-the-Trainer: CND is designated Training Support Agent (TSA) and is required to transition initial training (train the trainer) to an approved solution at the schoolhouses. The decrease in Train the Trainer cost is due to the amount of afloat procurements decreasing.

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy								Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15				P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)				Item Number / Title [DODIC]: 1 / Info Systems Security Program (ISSP)			

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
2.1.1) PKI - Procurement		2018	Defense Manpower Data Center / Alexandria, VA	WR	Alexandria, VA	Feb 2018	Mar 2018	10	88.500	Y		
2.1.1) PKI - Procurement		2019	Defense Manpower Data Center / Alexandria, VA	WR	Alexandria, VA	Feb 2019	Mar 2019	10	88.500	Y		
2.1.1) PKI - Procurement		2020	Defense Manpower Data Center / Alexandria, VA	WR	Alexandria, VA	Feb 2020	Mar 2020	10	88.500	Y		
3.1.1) NCSA - Procurement		2018	SPAWAR Systems Center (SSC) Pacific / San Diego, CA	WR	San Diego, CA	Dec 2017	Mar 2018	2	900.000	Y		
3.1.1) NCSA - Procurement		2019	SPAWAR Systems Center (SSC) Pacific / San Diego, CA	WR	San Diego, CA	Dec 2018	Mar 2019	1	900.000	Y		
3.1.1) NCSA - Procurement		2020	SPAWAR Systems Center (SSC) Pacific / San Diego, CA	WR	San Diego, CA	Dec 2019	Mar 2020	1	1,000.000	Y		
4.1.1) CND Afloat Procurement		2018	SPAWAR System Center Atlantic / Charleston, SC	WR	San Diego, CA	Dec 2017	Jan 2018	34	35.471	Y		
4.1.1) CND Afloat Procurement		2019	SPAWAR System Center Atlantic / Charleston, SC	WR	San Diego, CA	Dec 2018	Jan 2019	22	36.545	Y		
4.1.1) CND Afloat Procurement		2020	SPAWAR System Center Atlantic / Charleston, SC	WR	San Diego, CA	Dec 2019	Jan 2020	19	36.000	Y		
5.1.1) CITC- Afloat Procurement		2020	SPAWAR Systems Center (SSC) Pacific / San Diego, CA	WR	San Diego, CA	Dec 2019	Jan 2020	12	100.000	Y		
5.1.2) CITC Ashore Procurement		2020	SPAWAR Systems Center (SSC) Pacific / San Diego, CA	WR	San Diego, CA	Dec 2019	Jan 2020	1	400.000	Y		

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15				P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)						Modification Number / Title: 2 / Computer Network Defense (CND) Increment 2- Ashore (DA070)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	166.084	24.154	27.934	26.791	0.000	26.791	27.965	28.707	29.485	30.205	Continuing	Continuing
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	166.084	24.154	27.934	26.791	0.000	26.791	27.965	28.707	29.485	30.205	Continuing	Continuing
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	166.084	24.154	27.934	26.791	0.000	26.791	27.965	28.707	29.485	30.205	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Description: Computer Network Defense (CND) ashore sites represent multiple CND architectures/capabilities within each build that are specifically procured for each site based on the site mission and latest cyber threat. CND builds and variants are specifically designed to each site in accordance with CND's rapid Information Technology (IT) fielding construct. CND ashore sites include: IT 21st Century (IT-21) Networks Operation Centers (NOCs) which provide regional protection to shore and afloat assets within their area of responsibility; Navy Cyber Defense Operations Command (NCDOC), the designated Navy CND service provider, whose mission is to coordinate, monitor, analyze, and oversee the defense of Navy computer networks and NOCs who are responsible for accomplishing CND missions; Theater Network Operations and Security Centers (TNOSCs) and Outside the Continental United States (OCONUS) Navy Enterprise Network (ONE-Net) Local Network Service Centers (LNSCs). The ONE-Net security initiative consolidates LNSCs to their parent TNOSCs for more efficient operation and enables greater failover capability between ONE-Net sites; Broadcast Control Authorities (BCAs); Fixed Submarine Broadcast System (FSBS) which supports enhancements of the Nuclear Command, Control, and Communications, Navy (NC3-N) network (details held at a higher classification); P-913: Shore Based Enterprise Network Enhancements for the Naval Computer and Telecommunications Area Master Station Atlantic (NCTAMSLANT) Facility (MILCON P-913), which requires the CND capability; Pre-Planned Product Improvement (P3I) NCDOC upgrade which replaces end-of-life equipment with more robust capability at NCDOC to enhance the command's Cyber Defense Mission Support System (CDMSS) architectural framework to provide the necessary storage capability and processing power to ingest and analyze increased volumes of data from additional sources; The Virtual Training Environment (VTE) initiative which will transition equipment to an approved solution at the schoolhouses. CND is designated Training Support Agent (TSA); and CND Production Labs that provide CND architecture for production representative systems. CND also provides ashore infrastructure to provision the latest cyber security updates to all afloat tactical units; including Consolidated Afloat Networks and Enterprise Services (CANES), Integrated Shipboard Network System (ISNS) and other networks, which roll up cyber network data to NCDOC. CND will deploy technologies to shore commands and the shore-based afloat infrastructure to improve network defense and security wholeness, countering intruders and attacks aimed at disrupting tactical communications at the afloat gateways and shore commands; this will help the Navy's ability to prevent, constrain, and mitigate cyber-attacks and critical vulnerabilities, as well as provide greater resiliency, awareness, data analytics, redundancy, and diversity into the Navy's Defense-in-Depth (DiD) strategy. CND shore sites will have modern network sensors, improving the ability to detect unusual network patterns and prevent/deter malicious attacks. CND procurement/installation quantities represent multiple CND architectures with an assortment of builds that are specifically designed to each site. Costs may vary by site and variant.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15				P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)				Modification Number / Title: 2 / Computer Network Defense (CND) Increment 2- Ashore (DA070)					
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: Shore				Modification Type: Various				Related RDT&E PEs: 0303140N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: Computer Network Defense (CND) Increment 2- Ashore (DA070)													
B Kits													
Recurring													
1.1.1) Networks Operation Centers (NOC) - NonOrganic	29 / 31.761	4 / 3.630	4 / 3.751	4 / 3.705	- / -	4 / 3.705	4 / 3.888	4 / 4.040	4 / 4.080	4 / 4.268	Continuing	Continuing	
1.1.2) Navy Cyber Defense Operations Command (NCDOC) - NonOrganic	13 / 15.243	2 / 1.944	2 / 2.019	2 / 1.943	- / -	2 / 1.943	2 / 1.990	2 / 2.074	2 / 2.080	2 / 2.174	Continuing	Continuing	
1.1.3) Theater Network Operations & Security Center (TNOSC) - NonOrganic	21 / 23.693	3 / 2.680	3 / 2.700	3 / 2.805	- / -	3 / 2.805	3 / 2.910	3 / 2.925	3 / 2.940	3 / 3.073	Continuing	Continuing	
1.1.4) Broadcast Control Authorities (BCA) - NonOrganic	20 / 6.668	4 / 0.684	4 / 0.711	4 / 0.680	- / -	4 / 0.680	4 / 0.698	4 / 0.701	3 / 0.528	4 / 0.736	Continuing	Continuing	
1.1.5) Navy Enterprise Network (ONE-Net) Local Network Service Centers (LNSC) - NonOrganic ⁽⁶⁾	24 / 2.258	- / -	- / -	3 / 0.225	- / -	3 / 0.225	- / -	- / -	3 / 0.225	- / -	Continuing	Continuing	
1.1.6) Fixed Submarine Broadcast System (FSBS) - NonOrganic	7 / 2.000	7 / 2.080	7 / 2.184	7 / 2.100	- / -	7 / 2.100	11 / 3.306	11 / 3.311	11 / 3.328	11 / 3.478	Continuing	Continuing	
1.1.7) P-913: Shore Based Enterprise Network Enhancements - NonOrganic ⁽⁷⁾	- / -	- / -	1 / 2.913	1 / 0.943	- / -	1 / 0.943	- / -	- / -	- / -	- / -	- / -	2 / 3.856	
1.1.8) Pre-Planned Product Improvement (P3I): NCDOC Upgrade - Organic	4 / 14.068	1 / 1.916	1 / 1.992	1 / 2.013	- / -	1 / 2.013	1 / 2.093	1 / 2.135	1 / 2.226	1 / 2.227	Continuing	Continuing	
1.1.9) Virtual Training Environment - Organic	3 / 3.475	1 / 0.795	1 / 0.835	1 / 0.828	- / -	1 / 0.828	1 / 0.861	1 / 0.878	1 / 0.897	1 / 0.907	Continuing	Continuing	
1.1.10) CND Production Labs - Organic	18 / 24.387	3 / 4.017	3 / 4.218	3 / 4.167	- / -	3 / 4.167	3 / 4.334	3 / 4.420	3 / 4.617	3 / 4.652	Continuing	Continuing	
Subtotal: Recurring	- / 123.553	- / 17.746	- / 21.323	- / 19.409	- / -	- / 19.409	- / 20.080	- / 20.484	- / 20.921	- / 21.515	Continuing	Continuing	
Subtotal: Computer Network Defense (CND) Increment 2- Ashore (DA070)	139 / 123.553	25 / 17.746	26 / 21.323	29 / 19.409	- / -	29 / 19.409	29 / 20.080	29 / 20.484	31 / 20.921	29 / 21.515	Continuing	Continuing	
Subtotal: Procurement, All Modification Items	- / 123.553	- / 17.746	- / 21.323	- / 19.409	- / -	- / 19.409	- / 20.080	- / 20.484	- / 20.921	- / 21.515	Continuing	Continuing	
Support (All Modification Items)													
2.1) Train-the-Trainer	- / 4.046	- / 0.924	- / 0.952	- / 0.995	- / 0.000	- / 0.995	- / 1.052	- / 1.200	- / 1.300	- / 1.273	Continuing	Continuing	
2.2) Production Support	- / 6.007	- / 0.783	- / 0.527	- / 0.840	- / 0.000	- / 0.840	- / 0.717	- / 0.749	- / 0.909	- / 1.003	Continuing	Continuing	
2.3) DSA	- / 4.624	- / 0.594	- / 0.449	- / 0.559	- / 0.000	- / 0.559	- / 0.878	- / 0.935	- / 0.837	- / 0.868	Continuing	Continuing	
Subtotal: Support	- / 14.677	- / 2.301	- / 1.928	- / 2.394	- / -	- / 2.394	- / 2.647	- / 2.884	- / 3.046	- / 3.144	Continuing	Continuing	
Installation													
Modification Item 1 of 1: Computer Network Defense (CND) Increment 2- Ashore (DA070)	- / 27.854	- / 4.107	- / 4.683	- / 4.988	- / 0.000	- / 4.988	- / 5.238	- / 5.339	- / 5.518	- / 5.546	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15				P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)						Modification Number / Title: 2 / Computer Network Defense (CND) Increment 2- Ashore (DA070)			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: Shore				Modification Type: Various				Related RDT&E PEs: 0303140N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
<i>Subtotal: Installation</i>	<i>- / 27.854</i>	<i>- / 4.107</i>	<i>- / 4.683</i>	<i>- / 4.988</i>	<i>- / -</i>	<i>- / 4.988</i>	<i>- / 5.238</i>	<i>- / 5.339</i>	<i>- / 5.518</i>	<i>- / 5.546</i>	<i>Continuing</i>	<i>Continuing</i>	
Total													
Total Cost (Procurement + Support + Installation)	166.084	24.154	27.934	26.791	0.000	26.791	27.965	28.707	29.485	30.205	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																							
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15										P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)										Modification Number / Title: 2 / Computer Network Defense (CND) Increment 2- Ashore (DA070)													
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																		
Modification Item 1 of 1: Computer Network Defense (CND) Increment 2- Ashore (DA070)																																	
Manufacturer Information																																	
Manufacturer Name: CND Equipment - SPAWAR System Center (SSC) Atlantic															Manufacturer Location: Charleston, SC																		
Administrative Leadtime (in Months): 2															Production Leadtime (in Months): 3																		
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024							
Contract Dates		Dec 2017				Dec 2018				Dec 2019																							
Delivery Dates		Mar 2018				Mar 2019				Mar 2020																							
Installation Information																																	
Method of Implementation: Installed:: Installation Name: Computer Network Defense (CND) Increment 2- Ashore																																	
Installation Cost		Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total										
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)										
Prior Years		114 / 27.854		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		114 / 27.854									
FY 2018		- / -		20 / 4.107		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		20 / 4.107									
FY 2019		- / -		- / -		21 / 4.683		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		21 / 4.683									
FY 2020		- / -		- / -		- / -		24 / 4.988		0 / 0.000		24 / 4.988		- / -		- / -		- / -		- / -		0 / 0.000		24 / 4.988									
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		24 / 5.238		- / -		- / -		- / -		0 / 0.000		24 / 5.238									
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		24 / 5.339		- / -		- / -		0 / 0.000		24 / 5.339									
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		26 / 5.518		- / -		0 / 0.000		26 / 5.518									
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		24 / 5.546		0 / 0.000		24 / 5.546									
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		Continuing		Continuing									
Total		114 / 27.854		20 / 4.107		21 / 4.683		24 / 4.988		0 / 0.000		24 / 4.988		24 / 5.238		24 / 5.339		26 / 5.518		24 / 5.546		Continuing		Continuing									
Installation Schedule																																	
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot		
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
In	114	-	10	-	10	-	12	-	9	-	12	1	11	-	10	-	14	-	10	-	14	-	12	-	14	-	10	-	14	Cont.	Cont.		
Out	114	-	10	-	10	-	12	-	9	-	12	1	11	-	10	-	14	-	10	-	14	-	12	-	14	-	10	-	14	Cont.	Cont.		
Method of Implementation (Organic): Pre-Planned Product Improvement (P3I): NCDIC Upgrade - Not Installed																														Installation Quantity: 0			
Method of Implementation (Organic): Virtual Training Environment - Not Installed																														Installation Quantity: 0			

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15	P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)	Modification Number / Title: 2 / Computer Network Defense (CND) Increment 2- Ashore (DA070)
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
Modification Item 1 of 1: Computer Network Defense (CND) Increment 2- Ashore (DA070)		
Installation Information		
Method of Implementation (Organic): CND Production Labs - Not Installed		Installation Quantity: 0
Footnotes: ⁽⁶⁾ Navy Enterprise Network (ONE-Net) Local Network Service Centers (LNSC) - FY20 increase is due to ONE-Net security initiative being a tech refresh that occurs every three years. ⁽⁷⁾ P-913: Shore Based Enterprise Network Enhancements - FY20 unit cost decrease reflects less cybersecurity infrastructure/tools required at this site.		

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15				P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)						Modification Number / Title: 3 / Navy Cryptography (Crypto) - Afloat (DA071)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	213.129	27.795	40.031	35.281	0.000	35.281	33.710	35.650	36.878	29.910	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	213.129	27.795	40.031	35.281	0.000	35.281	33.710	35.650	36.878	29.910	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	213.129	27.795	40.031	35.281	0.000	35.281	33.710	35.650	36.878	29.910	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: The Navy Cryptography (Crypto) program is designated as Department of Navy's (DoN) Cryptographic Modernization Program Office (CMPO). CMPO procures, installs, and provides life-cycle support for National Security Agency (NSA) Type-1 end cryptographic units for United States Navy (USN) (to include Military Sealift Command (MSC) platforms), United States Marine Corps (USMC), and United States Coast Guard (USCG). Navy Crypto afloat equipment includes: Families of Communications Security (COMSEC) and Transmission Security (TRANSEC) devices that are divided into crypto voice, crypto data, crypto products and associated ancillary devices. These devices provide modern cryptographic solutions to replace obsolete, legacy devices within the crypto categories for all Services. Crypto Data products include: Advanced Cryptographic Capabilities (ACC), which provide NSA mandated cryptographic security software modernization of various communications security devices by cease key dates (details held at a higher classification); In-Line Network Encryptors (INE); KIV-7M (COMSEC Serial Crypto Replacement); KW-46; Cryptographic Universal Enclosures (CUE), and KGV-11M TRANSEC. Cryptographic Modernization 2 (CM2) provides NSA mandated cryptographic modernization of various communications security devices (details held at a higher classification). Crypto Voice products include: VINSON/Advanced Narrowband Digital Voice Terminal (ANDVT) Cryptographic Modernization (VACM). VACM is the modern cryptographic product replacement for legacy secure voice products. Space and Naval Warfare Systems Command (SPAWAR) is the VACM Central Procuring Agency for the USN to include the MSC, Naval Air Systems Command (NAVAIR), USMC and USCG.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15				P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)				Modification Number / Title: 3 / Navy Cryptography (Crypto) - Afloat (DA071)					
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: Ship				Modification Type: Various				Related RDT&E PEs: 0303140N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: Navy Cryptography (Crypto) - Afloat (DA071)													
B Kits													
Recurring													
1.1.1) KW-46 - NonOrganic	221 / 6.579	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	221 / 6.579	
1.1.2) Cryptographic Universal Enclosures (CUE) CSRR - NonOrganic	54 / 10.610	4 / 0.463	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	58 / 11.073	
1.1.3) COMSEC Serial Crypto Replacement (Phase II) - NonOrganic	112 / 2.017	5 / 0.100	1 / 0.020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	118 / 2.137	
1.1.4) VINSON/Advanced Narrowband Digital Voice Terminal CM (VACM) - NonOrganic ⁽⁸⁾	87 / 20.010	39 / 8.970	90 / 20.700	84 / 19.320	- / -	84 / 19.320	73 / 16.790	83 / 19.090	86 / 19.780	- / -	Continuing	Continuing	
1.1.5) In-Line Network Encryptors (INE) - Organic ⁽⁹⁾	4,937 / 65.526	173 / 2.076	139 / 1.668	193 / 2.316	- / -	193 / 2.316	140 / 1.680	136 / 1.632	186 / 2.232	156 / 1.872	Continuing	Continuing	
1.1.6) Advanced Cryptographic Capability (ACC) - Organic ⁽¹⁰⁾	- / -	- / -	24 / 12.000	13 / 6.500	- / -	13 / 6.500	- / -	- / -	- / -	- / -	- / -	37 / 18.500	
1.1.7) KGV-11M Transmission Security (TRANSEC) - Organic ⁽¹¹⁾	- / -	- / -	- / -	87 / 1.566	- / -	87 / 1.566	478 / 8.604	478 / 8.604	478 / 8.604	150 / 2.700	Continuing	Continuing	
1.1.8) Cryptographic Modernization 2 (CM2) - Organic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	38 / 19.000	Continuing	Continuing	
Subtotal: Recurring	- / 104.742	- / 11.609	- / 34.388	- / 29.702	- / -	- / 29.702	- / 27.074	- / 29.326	- / 30.616	- / 23.572	Continuing	Continuing	
Subtotal: Navy Cryptography (Crypto) - Afloat (DA071)	5,411 / 104.742	221 / 11.609	254 / 34.388	377 / 29.702	- / -	377 / 29.702	691 / 27.074	697 / 29.326	750 / 30.616	344 / 23.572	Continuing	Continuing	
Subtotal: Procurement, All Modification Items	- / 104.742	- / 11.609	- / 34.388	- / 29.702	- / -	- / 29.702	- / 27.074	- / 29.326	- / 30.616	- / 23.572	Continuing	Continuing	
Support (All Modification Items)													
2.1) Production Support	- / 24.531	- / 0.447	- / 1.221	- / 1.074	- / -	- / 1.074	- / 0.973	- / 1.189	- / 1.023	- / 0.742	Continuing	Continuing	
2.2) DSA	- / 37.576	- / 4.696	- / 0.638	- / 0.429	- / -	- / 0.429	- / 0.482	- / 0.437	- / 0.420	- / 0.476	Continuing	Continuing	
Subtotal: Support	- / 62.107	- / 5.143	- / 1.859	- / 1.503	- / -	- / 1.503	- / 1.455	- / 1.626	- / 1.443	- / 1.218	Continuing	Continuing	
Installation													
Modification Item 1 of 1: Navy Cryptography (Crypto) - Afloat (DA071)	- / 46.280	- / 11.043	- / 3.784	- / 4.076	- / 0.000	- / 4.076	- / 5.181	- / 4.698	- / 4.819	- / 5.120	Continuing	Continuing	
Subtotal: Installation	- / 46.280	- / 11.043	- / 3.784	- / 4.076	- / -	- / 4.076	- / 5.181	- / 4.698	- / 4.819	- / 5.120	Continuing	Continuing	
Total													
Total Cost (Procurement + Support + Installation)	213.129	27.795	40.031	35.281	0.000	35.281	33.710	35.650	36.878	29.910	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy					Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15			P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)			Modification Number / Title: 3 / Navy Cryptography (Crypto) - Afloat (DA071)	
ID Code (A=Service Ready, B=Not Service Ready) :					MDAP/MAIS Code:		
Modification Item 1 of 1: Navy Cryptography (Crypto) - Afloat (DA071)							
Manufacturer Information							
Manufacturer Name: Communications Security (COMSEC) (Phase II) - Raytheon (NSA)				Manufacturer Location: Waltham, MA			
Administrative Leadtime (<i>in Months</i>): 4				Production Leadtime (<i>in Months</i>): 7			
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates	Feb 2018	Feb 2019					
Delivery Dates	Sep 2018	Sep 2019					
Manufacturer Name: VINSON/Advanced Narrowband Digital Voice Terminal CM (VACM) - Raytheon (USAF)				Manufacturer Location: Largo, FL			
Administrative Leadtime (<i>in Months</i>): 3				Production Leadtime (<i>in Months</i>): 12			
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates	Dec 2017	Jan 2019	Jan 2020				
Delivery Dates	Dec 2018	Jan 2020	Jan 2021				
Manufacturer Name: Cryptographic Universal Enclosures (CUE) - CSRR - SPAWAR Systems Center (SSC) Pacific				Manufacturer Location: San Diego, CA			
Administrative Leadtime (<i>in Months</i>): 4				Production Leadtime (<i>in Months</i>): 7			
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates	Feb 2018						
Delivery Dates	Sep 2018						
Manufacturer Name: In-Line Network Encryptors (INE) - NSA				Manufacturer Location: Fort Meade, MD			
Administrative Leadtime (<i>in Months</i>): 3				Production Leadtime (<i>in Months</i>): 7			
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates	Jan 2018	Jan 2019	Jan 2020				
Delivery Dates	Aug 2018	Aug 2019	Aug 2020				
Manufacturer Name: Advanced Cryptographic Capability (ACC) - NSA				Manufacturer Location: Fort Meade, MD			
Administrative Leadtime (<i>in Months</i>): 3				Production Leadtime (<i>in Months</i>): 7			
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Contract Dates		Jan 2019	Jan 2020				
Delivery Dates		Aug 2019	Aug 2020				
Manufacturer Name: KGV-11M Transmission Security (TRANSEC) - VIASAT				Manufacturer Location: Carlsbad, CA			
Administrative Leadtime (<i>in Months</i>): 3				Production Leadtime (<i>in Months</i>): 12			

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																													
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15										P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)										Modification Number / Title: 3 / Navy Cryptography (Crypto) - Afloat (DA071)																			
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																								
Modification Item 1 of 1: Navy Cryptography (Crypto) - Afloat (DA071)																																							
Manufacturer Information																																							
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024													
Contract Dates										Jan 2020																													
Delivery Dates										Jan 2021																													
Installation Information																																							
Method of Implementation: Installed:: Installation Name: Navy Cryptography (Crypto) - Afloat																																							
Installation Cost		Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total															
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)															
Prior Years		365 / 46.280		109 / 10.605		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		474 / 56.885													
FY 2018		- / -		2 / 0.438		46 / 3.784		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		48 / 4.222													
FY 2019		- / -		- / -		- / -		66 / 4.076		0 / 0.000		66 / 4.076		25 / 1.506		- / -		- / -		- / -		- / -		0 / 0.000		91 / 5.582													
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		61 / 3.675		23 / 1.385		- / -		- / -		- / -		0 / 0.000		84 / 5.060													
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		55 / 3.313		18 / 1.084		- / -		- / -		0 / 0.000		73 / 4.397													
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		62 / 3.735		21 / 1.265		0 / 0.000		83 / 5.000															
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		64 / 3.855		Continuing		Continuing															
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -															
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		Continuing		Continuing													
Total		365 / 46.280		111 / 11.043		46 / 3.784		66 / 4.076		0 / 0.000		66 / 4.076		86 / 5.181		78 / 4.698		80 / 4.819		85 / 5.120		Continuing		Continuing															
Installation Schedule																																							
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot								
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4										
In	300	65	39	33	34	5	20	14	12	-	21	26	19	25	22	23	16	23	22	22	11	18	19	30	13	21	19	21	24	Cont.	Cont.								
Out	300	65	39	33	34	5	20	14	12	-	21	26	19	25	22	23	16	23	22	22	11	18	19	30	13	21	19	21	24	Cont.	Cont.								
Method of Implementation (Organic): In-Line Network Encryptors (INE)																														Installation Quantity: 0									
Method of Implementation (Organic): Advanced Cryptographic Capability (ACC)																														Installation Quantity: 37									
Method of Implementation (Organic): KGV-11M Transmission Security (TRANSEC)																														Installation Quantity: 1671									

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15	P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)	Modification Number / Title: 3 / Navy Cryptography (Crypto) - Afloat (DA071)
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
Modification Item 1 of 1: Navy Cryptography (Crypto) - Afloat (DA071)		
Installation Information		
Method of Implementation (Organic): Cryptographic Modernization 2 (CM2)		Installation Quantity: 0
Footnotes: ⁽⁸⁾ VACM (NonOrganic) - VACM NonOrganic quantities are procured/installed per ship set/platform. Installations carry over into Q1 due to scattered deliveries of VACM variants which make up a ship set; this ensures quantities of VACM variants received are sufficient to make complete shipsets for the platforms/hulls aligned to the fielding schedule which is in accordance with the NSA's cease key dates (classified) for Top Secret (TS) and Secret (S) circuits. ⁽⁹⁾ In-Line Network Encryptors (INE) - FY20 increase reflects additional Chief of Naval Operations (CNO) requirements to procure KG-175D and KG-175GS devices to satisfy mandated inventory levels. ⁽¹⁰⁾ Advanced Cryptographic Capability (ACC) - FY20 decrease due to change in requirement that reduces the number of required devices to support ACC to meet the NSA mandated cryptographic security software modernization of various communications security devices. ⁽¹¹⁾ KGV-11M - FY20 begins the procurement of the initial devices for KGV-11M to support the modernization of Transmission Security (TRANSEC) devices.		

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Exhibit P-3a, Individual Modification: PB 2020 Navy						Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15				P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)				Modification Number / Title: 4 / Navy Cryptography (Crypto) - Ashore (DA071)			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	49.686	6.735	38.353	34.728	0.000	34.728	29.842	33.678	33.714	42.067	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	49.686	6.735	38.353	34.728	0.000	34.728	29.842	33.678	33.714	42.067	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	49.686	6.735	38.353	34.728	0.000	34.728	29.842	33.678	33.714	42.067	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Navy Cryptography (Crypto) ashore equipment includes: Families of Communication Security (COMSEC) and Transmission Security (TRANSEC) devices that are divided into crypto voice, crypto data, crypto products, and associated ancillary devices. These devices provide modern cryptographic solutions to replace obsolete, legacy devices within the crypto categories for all Services. Navy Crypto Ashore sites include: United States Navy (USN), United States Marine Corps (USMC), United States Coast Guard (USCG) facilities, and Ballistic Missile Defense facilities, production/integration sites, and training sites.

Crypto Data products include: Advanced Cryptographic Capabilities (ACC) which provide NSA mandated cryptographic security software modernization of various communications security devices by cease key dates (details held at a higher classification); Cryptographic Modernization 2 (CM2) provides NSA mandated cryptographic modernization of various communications security devices (details held at a higher classification).

Crypto Voice products include: VINSON/Advanced Narrowband Digital Voice Terminal (ANDVT) Cryptographic Modernization (VACM).

Space and Naval Warfare Systems Command (SPAWAR) is the VACM Central Procuring Agency for the USN to include the Military Sealift Command (MSC), Naval Air Systems Command (NAVAIR), USMC and USCG.

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15					P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)					Modification Number / Title: 4 / Navy Cryptography (Crypto) - Ashore (DA071)			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: Shore				Modification Type: Initial				Related RDT&E PEs: 0303140N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: Navy Cryptography (Crypto) - Ashore (DA071)													
B Kits													
Recurring													
1.1.1) VINSON/Advanced Narrowband Digital Voice Terminal CM (VACM) - Organic ⁽¹²⁾	2,486 / 28.340	367 / 4.221	1,242 / 14.283	1,160 / 13.340	- / -	1,160 / 13.340	1,122 / 12.903	1,208 / 13.892	1,252 / 14.398	1,370 / 15.755	Continuing	Continuing	
1.1.2) Advanced Cryptographic Capability (ACC) - Organic ⁽¹³⁾	- / -	- / -	16 / 8.000	9 / 4.500	- / -	9 / 4.500	5 / 2.500	6 / 3.000	6 / 3.000	6 / 3.000	Continuing	Continuing	
1.1.3) VACM - NonOrganic ⁽¹⁴⁾	19 / 7.315	6 / 2.310	37 / 14.245	32 / 12.320	- / -	32 / 12.320	27 / 10.395	34 / 13.090	31 / 11.935	- / -	Continuing	Continuing	
1.1.4) Cryptographic Modernization 2 (CM2) - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	38 / 19.000	Continuing	Continuing	
Subtotal: Recurring	- / 35.655	- / 6.531	- / 36.528	- / 30.160	- / -	- / 30.160	- / 25.798	- / 29.982	- / 29.333	- / 37.755	Continuing	Continuing	
Subtotal: Navy Cryptography (Crypto) - Ashore (DA071)	2,505 / 35.655	373 / 6.531	1,295 / 36.528	1,201 / 30.160	- / -	1,201 / 30.160	1,154 / 25.798	1,248 / 29.982	1,289 / 29.333	1,414 / 37.755	Continuing	Continuing	
Subtotal: Procurement, All Modification Items	- / 35.655	- / 6.531	- / 36.528	- / 30.160	- / -	- / 30.160	- / 25.798	- / 29.982	- / 29.333	- / 37.755	Continuing	Continuing	
Support (All Modification Items)													
2.1) Production Support	- / 12.208	- / 0.204	- / 1.232	- / 1.021	- / -	- / 1.021	- / 0.880	- / 1.026	- / 1.019	- / 1.302	Continuing	Continuing	
Subtotal: Support	- / 12.208	- / 0.204	- / 1.232	- / 1.021	- / -	- / 1.021	- / 0.880	- / 1.026	- / 1.019	- / 1.302	Continuing	Continuing	
Installation													
Modification Item 1 of 1: Navy Cryptography (Crypto) - Ashore (DA071)	- / 1.823	- / 0.000	- / 0.593	- / 3.547	- / 0.000	- / 3.547	- / 3.164	- / 2.670	- / 3.362	- / 3.010	Continuing	Continuing	
Subtotal: Installation	- / 1.823	- / -	- / 0.593	- / 3.547	- / -	- / 3.547	- / 3.164	- / 2.670	- / 3.362	- / 3.010	Continuing	Continuing	
Total													
Total Cost (Procurement + Support + Installation)	49.686	6.735	38.353	34.728	0.000	34.728	29.842	33.678	33.714	42.067	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15				P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)				Modification Number / Title: 4 / Navy Cryptography (Crypto) - Ashore (DA071)				
ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Modification Item 1 of 1: Navy Cryptography (Crypto) - Ashore (DA071)												
Manufacturer Information												
Manufacturer Name: VINSON/Advanced Narrowband Digital Voice Terminal CM (VACM) - Raytheon (USAF)						Manufacturer Location: Largo, FL						
Administrative Leadtime (in Months): 3						Production Leadtime (in Months): 12						
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates	Dec 2017	Jan 2019	Jan 2020									
Delivery Dates	Dec 2018	Jan 2020	Jan 2021									
Manufacturer Name: Advanced Cryptographic Capability (ACC) - NSA						Manufacturer Location: Fort Meade, MD						
Administrative Leadtime (in Months): 3						Production Leadtime (in Months): 7						
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates		Jan 2019	Jan 2020									
Delivery Dates		Aug 2019	Aug 2020									
Installation Information												
Method of Implementation: Installed:: Installation Name: Navy Cryptography (Crypto) - Ashore												
Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	19 / 1.823	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	19 / 1.823
FY 2018	- / -	- / -	6 / 0.593	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	6 / 0.593
FY 2019	- / -	- / -	- / -	37 / 3.547	0 / 0.000	37 / 3.547	- / -	- / -	- / -	- / -	0 / 0.000	37 / 3.547
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	32 / 3.164	- / -	- / -	- / -	0 / 0.000	32 / 3.164
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	27 / 2.670	- / -	- / -	0 / 0.000	27 / 2.670
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	34 / 3.362	- / -	0 / 0.000	34 / 3.362
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	31 / 3.010	Continuing	Continuing
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	19 / 1.823	- / -	6 / 0.593	37 / 3.547	0 / 0.000	37 / 3.547	32 / 3.164	27 / 2.670	34 / 3.362	31 / 3.010	Continuing	Continuing

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Exhibit P-3a, Individual Modification: PB 2020 Navy																							Date: March 2019								
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15											P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)											Modification Number / Title: 4 / Navy Cryptography (Crypto) - Ashore (DA071)									
ID Code (A=Service Ready, B=Not Service Ready) :																	MDAP/MAIS Code:														
Modification Item 1 of 1: Navy Cryptography (Crypto) - Ashore (DA071)																															
Installation Information																															
Method of Implementation: Installed:: Installation Name: Navy Cryptography (Crypto) - Ashore																															
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	9	10	-	-	-	-	6	-	-	-	26	6	5	-	9	22	1	-	27	-	-	-	34	-	-	-	27	4	-	Cont.	Cont.
Out	9	10	-	-	-	-	6	-	-	-	26	6	5	-	9	22	1	-	27	-	-	-	34	-	-	-	27	4	-	Cont.	Cont.
Method of Implementation (Organic): VINSON/Advanced Narrowband Digital Voice Terminal CM (VACM)																							Installation Quantity: 0								
Method of Implementation (Organic): Advanced Cryptographic Capability (ACC)																							Installation Quantity: 0								
Footnotes: ⁽¹²⁾ VINSON/Advanced Narrowband Digital Voice Terminal (ANDVT) Crypto Modernization (VACM) (Organic) - VACM Organic quantities are by device, not shore site. ⁽¹³⁾ Advanced Cryptographic Capability (ACC) - FY20 decrease due to change in requirement that reduces the number of required devices to support ACC to meet the NSA mandated cryptographic security software modernization of various communications security devices. ⁽¹⁴⁾ VACM (NonOrganic) - VACM NonOrganic quantities are grouped per shore site, not device.																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15					P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)					Modification Number / Title: 5 / Key Management (KM) - Afloat (DA005)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	60.900	5.242	5.073	5.648	0.000	5.648	8.084	8.537	6.827	6.297	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	60.900	5.242	5.073	5.648	0.000	5.648	8.084	8.537	6.827	6.297	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	60.900	5.242	5.073	5.648	0.000	5.648	8.084	8.537	6.827	6.297	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Key Management (KM) is a collection of Tier 2 security equipment, Key Management Infrastructure (KMI), and Tier 3 equipment Simple Key Loader (SKL). KMI is the next generation Tier 2 product to replace the legacy Local Management Device/Key Processor (LMD/KP) Electronic Key Management System (EKMS). KMI includes the Management Client (MGC), Advanced Key Processor (AKP) and High Assurance Internet Protocol Equipment (HAPE) devices. KMI provides a net-centric, web based architecture for the ordering, management and distribution of all cryptographic key material to support Navy users. The AN/PYQ-10 SKL is a ruggedized, portable, hand-held fill device, for securely receiving, storing, and transferring data between compatible cryptographic and communications equipment. The SKL is backward-compatible with existing End Cryptographic Units (ECU) and forward-compatible with future security equipment and systems, including KMI. KMI Tech Refresh is a hardware and software upgrade to KMI Spiral 2 that is mandated by National Security Agency (NSA) to occur every five-years.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15				P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)				Modification Number / Title: 5 / Key Management (KM) - Afloat (DA005)					
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: Ship				Modification Type: Various				Related RDT&E PEs: 0303140N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: Key Management (KM) - Afloat (DA005)													
B Kits													
Recurring													
1.1.1) Simple Key Loader (SKL) - Organic ⁽¹⁵⁾		8,952 / 44.366	1,246 / 4.402	659 / 2.333	212 / 0.752	- / -	212 / 0.752	185 / 0.658	717 / 2.555	1,052 / 3.757	1,160 / 4.142	Continuing	Continuing
1.1.2) KMI Tech Refresh - NonOrganic ⁽¹⁶⁾		- / -	3 / 0.102	28 / 0.959	38 / 1.305	- / -	38 / 1.305	59 / 2.033	37 / 1.278	19 / 0.657	11 / 0.380	Continuing	Continuing
Subtotal: Recurring		- / 44.366	- / 4.504	- / 3.292	- / 2.057	- / -	- / 2.057	- / 2.691	- / 3.833	- / 4.414	- / 4.522	Continuing	Continuing
Subtotal: Key Management (KM) - Afloat (DA005)		8,952 / 44.366	1,249 / 4.504	687 / 3.292	250 / 2.057	- / -	250 / 2.057	244 / 2.691	754 / 3.833	1,071 / 4.414	1,171 / 4.522	Continuing	Continuing
Subtotal: Procurement, All Modification Items		- / 44.366	- / 4.504	- / 3.292	- / 2.057	- / -	- / 2.057	- / 2.691	- / 3.833	- / 4.414	- / 4.522	Continuing	Continuing
Support (All Modification Items)													
2.1) Production Support		- / 2.909	- / 0.164	- / 0.119	- / 0.080	- / -	- / 0.080	- / 0.092	- / 0.130	- / 0.145	- / 0.147	Continuing	Continuing
2.2) Train the Trainer		- / 0.299	- / 0.136	- / 0.087	- / 0.123	- / -	- / 0.123	- / 0.088	- / 0.099	- / 0.105	- / 0.115	Continuing	Continuing
2.3) DSA ⁽¹⁷⁾		- / 13.326	- / 0.388	- / 1.125	- / 2.088	- / -	- / 2.088	- / 2.813	- / 1.525	- / 1.063	- / 0.363	Continuing	Continuing
Subtotal: Support		- / 16.534	- / 0.688	- / 1.331	- / 2.291	- / -	- / 2.291	- / 2.993	- / 1.754	- / 1.313	- / 0.625	Continuing	Continuing
Installation													
Modification Item 1 of 1: Key Management (KM) - Afloat (DA005)		- / 0.000	- / 0.050	- / 0.450	- / 1.300	- / 0.000	- / 1.300	- / 2.400	- / 2.950	- / 1.100	- / 1.150	Continuing	Continuing
Subtotal: Installation		- / 0.000	- / 0.050	- / 0.450	- / 1.300	- / -	- / 1.300	- / 2.400	- / 2.950	- / 1.100	- / 1.150	Continuing	Continuing
Total													
Total Cost (Procurement + Support + Installation)		60.900	5.242	5.073	5.648	0.000	5.648	8.084	8.537	6.827	6.297	Continuing	Continuing

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15					P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)					Modification Number / Title: 5 / Key Management (KM) - Afloat (DA005)		
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:				
Modification Item 1 of 1: Key Management (KM) - Afloat (DA005)												
Manufacturer Information												
Manufacturer Name: Simple Key Loader (SKL) - Sierra Nevada Corporation								Manufacturer Location: Sparks, NV				
Administrative Leadtime (<i>in Months</i>): 4								Production Leadtime (<i>in Months</i>): 2				
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates	Feb 2018	Feb 2019	Feb 2020									
Delivery Dates	Apr 2018	Apr 2019	Apr 2020									
Manufacturer Name: Key Management Infrastructure (KMI) Tech Refresh - NSA								Manufacturer Location: Fort Meade, MD				
Administrative Leadtime (<i>in Months</i>): 5								Production Leadtime (<i>in Months</i>): 4				
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates	Mar 2018	Mar 2019	Mar 2020									
Delivery Dates	Jul 2018	Jul 2019	Jul 2020									
Installation Information												
Method of Implementation: Installed:: Installation Name: Key Management (KM) - Afloat												
Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	1 / 0.050	2 / 0.100	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 0.150
FY 2019	- / -	- / -	7 / 0.350	21 / 0.950	0 / 0.000	21 / 0.950	- / -	- / -	- / -	- / -	0 / 0.000	28 / 1.300
FY 2020	- / -	- / -	- / -	7 / 0.350	0 / 0.000	7 / 0.350	31 / 1.550	- / -	- / -	- / -	0 / 0.000	38 / 1.900
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	17 / 0.850	42 / 2.050	- / -	- / -	0 / 0.000	59 / 2.900
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	21 / 0.900	16 / 0.750	- / -	0 / 0.000	37 / 1.650
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	7 / 0.350	12 / 0.600	Continuing	Continuing
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	11 / 0.550	0 / 0.000	11 / 0.550
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	- / -	1 / 0.050	9 / 0.450	28 / 1.300	0 / 0.000	28 / 1.300	48 / 2.400	63 / 2.950	23 / 1.100	23 / 1.150	Continuing	Continuing

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Exhibit P-3a, Individual Modification: PB 2020 Navy																							Date: March 2019								
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15										P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)										Modification Number / Title: 5 / Key Management (KM) - Afloat (DA005)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: Key Management (KM) - Afloat (DA005)																															
Installation Information																															
Method of Implementation: Installed:: Installation Name: Key Management (KM) - Afloat																															
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	-	-	-	-	1	-	1	1	7	-	9	6	13	-	7	18	23	-	21	16	26	-	13	2	8	-	5	7	11	Cont.	Cont.
Out	-	-	-	-	1	-	1	1	4	3	9	6	12	1	6	18	22	2	21	15	24	3	12	3	7	1	5	5	10	Cont.	Cont.
Method of Implementation (Organic): Simple Key Loader (SKL) - Not Installed																							Installation Quantity: 0								
Footnotes: ⁽¹⁵⁾ Simple Key Loaders (SKL) - FY20 decrease is due to the attrition rate caused by the seven-year battery life span. SKL procurements are required to replenish the fleet with key-fill devices required to conduct secure, mission-critical communications. Quantities fluctuate to remain within the Inventory Objective Capability (IOC). ⁽¹⁶⁾ Key Management Infrastructure (KMI) Tech Refresh - FY20 increase is the result of National Security Agency (NSA) mandated five-year refresh cycle. KMI Tech Refresh modernizes all KMI Spiral 2 systems. Unit cost increase from Spiral 2 to KMI Tech Refresh are due to change in hardware. ⁽¹⁷⁾ Design Services Allocation (DSA) - FY20 increase aligns to the continued fielding of KMI Tech Refresh.																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15				P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)						Modification Number / Title: 6 / Key Management (KM) - Ashore (DA005)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	41.975	4.803	6.212	6.026	0.000	6.026	3.680	3.461	5.426	6.201	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	41.975	4.803	6.212	6.026	0.000	6.026	3.680	3.461	5.426	6.201	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	41.975	4.803	6.212	6.026	0.000	6.026	3.680	3.461	5.426	6.201	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Key Management (KM) ashore sites include: United States Navy (USN), United States Marine Corps (USMC), United States Coast Guard (USCG) facilities, production integration sites, and training sites. KM ashore systems include: Simple Key Loader (SKL), Key Management Infrastructure (KMI) Spiral 1 & 2 and KMI Tech Refresh. KMI is the next generation Tier 2 product to replace the legacy Local Management Device/Key Processor (LMD/KP) Electronic Key Management System (EKMS). KMI includes the Management Client (MGC), Advanced Key Processor (AKP) and High Assurance Internet Protocol Equipment (HAIZE) devices. KMI provides a net-centric, web based architecture for the ordering, management and distribution of all cryptographic key material to support Navy users. The AN/PYQ-10 SKL is a ruggedized, portable, hand-held fill device, for securely receiving, storing, and transferring data between compatible cryptographic and communications equipment. The SKL is backward-compatible with existing End Cryptographic Units (ECU) and forward-compatible with future security equipment and systems, including KMI. KMI Tech Refresh is a hardware and software upgrade to KMI Spiral 2 that is mandated by National Security Agency (NSA) to occur every five-years.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15				P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)				Modification Number / Title: 6 / Key Management (KM) - Ashore (DA005)					
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: Shore				Modification Type: Various				Related RDT&E PEs: 0303140N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: Key Management (KM) - Ashore (DA005)													
B Kits													
Recurring													
1.1.1) Simple Key Loader (SKL) - Organic ⁽¹⁸⁾		10,313 / 30.953	1,207 / 4.264	574 / 2.032	108 / 0.383	- / -	108 / 0.383	174 / 0.619	699 / 2.491	1,329 / 4.746	1,263 / 4.510	Continuing	Continuing
1.1.2) KMI Tech Refresh - NonOrganic		- / -	6 / 0.205	67 / 2.295	65 / 2.232	- / -	65 / 2.232	65 / 2.240	16 / 0.553	7 / 0.242	20 / 0.691	Continuing	Continuing
Subtotal: Recurring		- / 30.953	- / 4.469	- / 4.327	- / 2.615	- / -	- / 2.615	- / 2.859	- / 3.044	- / 4.988	- / 5.201	Continuing	Continuing
Subtotal: Key Management (KM) - Ashore (DA005)		10,313 / 30.953	1,213 / 4.469	641 / 4.327	173 / 2.615	- / -	173 / 2.615	239 / 2.859	715 / 3.044	1,336 / 4.988	1,283 / 5.201	Continuing	Continuing
Subtotal: Procurement, All Modification Items		- / 30.953	- / 4.469	- / 4.327	- / 2.615	- / -	- / 2.615	- / 2.859	- / 3.044	- / 4.988	- / 5.201	Continuing	Continuing
Support (All Modification Items)													
2.1) Production Support		- / 3.957	- / 0.148	- / 0.160	- / 0.089	- / -	- / 0.089	- / 0.100	- / 0.110	- / 0.174	- / 0.173	Continuing	Continuing
2.2) Train the Trainer		- / 0.421	- / 0.102	- / 0.135	- / 0.075	- / -	- / 0.075	- / 0.092	- / 0.097	- / 0.117	- / 0.117	Continuing	Continuing
2.3) Pre-Design Install Planning ⁽¹⁹⁾		- / 6.644	- / 0.084	- / 1.415	- / 0.297	- / -	- / 0.297	- / 0.104	- / 0.060	- / 0.072	- / 0.260	- / -	- / 8.936
Subtotal: Support		- / 11.022	- / 0.334	- / 1.710	- / 0.461	- / -	- / 0.461	- / 0.296	- / 0.267	- / 0.363	- / 0.550	Continuing	Continuing
Installation													
Modification Item 1 of 1: Key Management (KM) - Ashore (DA005)		- / 0.000	- / 0.000	- / 0.175	- / 2.950	- / 0.000	- / 2.950	- / 0.525	- / 0.150	- / 0.075	- / 0.450	Continuing	Continuing
Subtotal: Installation		- / 0.000	- / -	- / 0.175	- / 2.950	- / -	- / 2.950	- / 0.525	- / 0.150	- / 0.075	- / 0.450	Continuing	Continuing
Total													
Total Cost (Procurement + Support + Installation)		41.975	4.803	6.212	6.026	0.000	6.026	3.680	3.461	5.426	6.201	Continuing	Continuing

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15				P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)				Modification Number / Title: 6 / Key Management (KM) - Ashore (DA005)				
ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Modification Item 1 of 1: Key Management (KM) - Ashore (DA005)												
Manufacturer Information												
Manufacturer Name: Simple Key Loader (SKL) - Sierra Nevada Corporation						Manufacturer Location: Sparks, NV						
Administrative Leadtime (<i>in Months</i>): 4						Production Leadtime (<i>in Months</i>): 2						
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates	Feb 2018	Feb 2019	Feb 2020									
Delivery Dates	Apr 2018	Apr 2019	Apr 2020									
Manufacturer Name: Key Management Infrastructure (KMI) Tech Refresh - NSA						Manufacturer Location: Fort Meade, MD						
Administrative Leadtime (<i>in Months</i>): 5						Production Leadtime (<i>in Months</i>): 4						
Dates	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024					
Contract Dates	Mar 2018	Mar 2019	Mar 2020									
Delivery Dates	Jul 2018	Jul 2019	Jul 2020									
Installation Information												
Method of Implementation: Installed:: Installation Name: Key Management (KM) - Ashore												
Installation Cost	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	6 / 0.150	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	6 / 0.150
FY 2019	- / -	- / -	1 / 0.025	66 / 1.350	0 / 0.000	66 / 1.350	- / -	- / -	- / -	- / -	0 / 0.000	67 / 1.375
FY 2020	- / -	- / -	- / -	64 / 1.600	0 / 0.000	64 / 1.600	1 / 0.025	- / -	- / -	- / -	0 / 0.000	65 / 1.625
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	33 / 0.500	32 / 0.100	- / -	- / -	0 / 0.000	65 / 0.600
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	16 / 0.050	- / -	- / -	0 / 0.000	16 / 0.050
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 0.075	4 / 0.100	Continuing	Continuing
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	20 / 0.350	0 / 0.000	20 / 0.350
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	- / -	- / -	7 / 0.175	130 / 2.950	0 / 0.000	130 / 2.950	34 / 0.525	48 / 0.150	3 / 0.075	24 / 0.450	Continuing	Continuing

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Exhibit P-3a, Individual Modification: PB 2020 Navy																							Date: March 2019								
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15										P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)										Modification Number / Title: 6 / Key Management (KM) - Ashore (DA005)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: Key Management (KM) - Ashore (DA005)																															
Installation Information																															
Method of Implementation: Installed:: Installation Name: Key Management (KM) - Ashore																															
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	4	3	-	18	36	76	-	1	-	33	-	15	16	17	-	-	-	3	-	-	2	22	Cont.	Cont.
Out	-	-	-	-	-	-	-	3	4	-	16	27	71	16	1	-	33	-	-	16	32	-	-	-	3	-	-	2	19	Cont.	Cont.
Method of Implementation (Organic): Simple Key Loader (SKL) - Not Installed																							Installation Quantity: 0								
Footnotes: ⁽¹⁸⁾ Simple Key Loaders (SKL) - FY20 decrease is due to the attrition rate caused by the seven-year battery life span. SKL procurements are required to replenish the fleet with key-fill devices required to conduct secure, mission-critical communications. Quantities fluctuate to remain within the Inventory Objective Capability (IOC). ⁽¹⁹⁾ Pre-Install Design Planning - FY20 decrease reflects a one-for-one procurement to pre-install design planning cost associated with KMI Tech Refresh procurements/installations; Fluctuations in out-years are attributed to not all installations requiring pre-install design planning due to multiple devices being installed at one site.																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy							Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15				P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)				Modification Number / Title: 7 / SHARKCAGE - Afloat (DA070)			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	0.000	3.083	13.260	38.841	0.000	38.841	39.292	41.154	37.885	32.656	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	0.000	3.083	13.260	38.841	0.000	38.841	39.292	41.154	37.885	32.656	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	0.000	3.083	13.260	38.841	0.000	38.841	39.292	41.154	37.885	32.656	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

SHARKCAGE is a global, federated Defensive Cyberspace Operations (DCO) enclave consisting of sensor nodes, DCO analysis workbenches, and analytic nodes. Utilizing one-way passive taps in a protected, isolated, classified environment, SHARKCAGE consolidates cyber event data from multiple platforms and networks, providing Navy DCO forces with a shared environment and common platform for integrated workflow, collaboration, and analysis. SHARKCAGE efficiently detects, correlates, and analyzes nation and non-nation state attacks against maritime data and the Naval Networking Environment (NNE).

SHARKCAGE afloat suites includes laptops, servers, switches, storage, network taps/cables, and forensic equipment to enable deployed DCO forces to conduct localized mobile analysis. Afloat suites also include hardware and software for enhanced data correlation tools, ancillary devices, and other related security tools.

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Exhibit P-3a, Individual Modification: PB 2020 Navy									Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15				P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)					Modification Number / Title: 7 / SHARKCAGE - Afloat (DA070)				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: Ship, Sub				Modification Type: Initial				Related RDT&E PEs: 0303140N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: SHARKCAGE - Afloat (DA070)													
B Kits													
Recurring													
1.1.1) SHARKCAGE Afloat Suite - NonOrganic ⁽²⁰⁾	- / -	4 / 1.000	18 / 4.500	53 / 13.250	- / -	53 / 13.250	54 / 13.500	57 / 14.250	52 / 13.000	45 / 11.250	Continuing	Continuing	
Subtotal: Recurring	- / 0.000	- / 1.000	- / 4.500	- / 13.250	- / -	- / 13.250	- / 13.500	- / 14.250	- / 13.000	- / 11.250	Continuing	Continuing	
Subtotal: SHARKCAGE - Afloat (DA070)	- / -	4 / 1.000	18 / 4.500	53 / 13.250	- / -	53 / 13.250	54 / 13.500	57 / 14.250	52 / 13.000	45 / 11.250	Continuing	Continuing	
Subtotal: Procurement, All Modification Items	- / 0.000	- / 1.000	- / 4.500	- / 13.250	- / -	- / 13.250	- / 13.500	- / 14.250	- / 13.000	- / 11.250	Continuing	Continuing	
Support (All Modification Items)													
2.1) Train-the-Trainer	- / -	- / 0.150	- / 0.150	- / 0.150	- / -	- / 0.150	- / 0.150	- / 0.150	- / 0.150	- / 0.150	Continuing	Continuing	
2.2) Production Support	- / -	- / 0.050	- / 0.150	- / 0.372	- / -	- / 0.372	- / 0.331	- / 0.331	- / 0.360	- / 0.162	Continuing	Continuing	
2.3) DSA	- / -	- / 0.383	- / 1.710	- / 5.194	- / -	- / 5.194	- / 5.061	- / 5.048	- / 4.875	- / 4.219	Continuing	Continuing	
Subtotal: Support	- / 0.000	- / 0.583	- / 2.010	- / 5.716	- / -	- / 5.716	- / 5.542	- / 5.529	- / 5.385	- / 4.531	Continuing	Continuing	
Installation													
Modification Item 1 of 1: SHARKCAGE - Afloat (DA070)	- / 0.000	- / 1.500	- / 6.750	- / 19.875	- / 0.000	- / 19.875	- / 20.250	- / 21.375	- / 19.500	- / 16.875	Continuing	Continuing	
Subtotal: Installation	- / 0.000	- / 1.500	- / 6.750	- / 19.875	- / -	- / 19.875	- / 20.250	- / 21.375	- / 19.500	- / 16.875	Continuing	Continuing	
Total													
Total Cost (Procurement + Support + Installation)	0.000	3.083	13.260	38.841	0.000	38.841	39.292	41.154	37.885	32.656	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15					P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)										Modification Number / Title: 7 / SHARKCAGE - Afloat (DA070)																
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:																					
Modification Item 1 of 1: SHARKCAGE - Afloat (DA070)																															
Manufacturer Information																															
Manufacturer Name: SHARKCAGE Equipment - SPAWAR Systems Center (SSC) Pacific										Manufacturer Location: San Diego, CA																					
Administrative Leadtime <i>(in Months)</i> : 2										Production Leadtime <i>(in Months)</i> : 3																					
Dates		FY 2018			FY 2019			FY 2020			FY 2021			FY 2022			FY 2023			FY 2024											
Contract Dates		Dec 2017			Dec 2018																										
Delivery Dates		Mar 2018			Mar 2019																										
Installation Information																															
Method of Implementation: Installed:: Installation Name: SHARKCAGE - Afloat (DA070)																															
Installation Cost		Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total																		
		<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>																		
Prior Years		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2018		- / -	4 / 1.500	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	4 / 1.500																		
FY 2019		- / -	- / -	18 / 6.750	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	18 / 6.750																		
FY 2020		- / -	- / -	- / -	53 / 19.875	0 / 0.000	53 / 19.875	- / -	- / -	- / -	- / -	0 / 0.000	53 / 19.875																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	54 / 20.250	- / -	- / -	- / -	0 / 0.000	54 / 20.250																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	57 / 21.375	- / -	- / -	0 / 0.000	57 / 21.375																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	52 / 19.500	- / -	Continuing	Continuing																		
FY 2024		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	45 / 16.875	0 / 0.000	45 / 16.875																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing																		
Total		- / -	4 / 1.500	18 / 6.750	53 / 19.875	0 / 0.000	53 / 19.875	54 / 20.250	57 / 21.375	52 / 19.500	45 / 16.875	Continuing	Continuing																		
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	3	-	1	-	11	5	2	-	23	20	10	-	16	24	14	-	27	13	17	-	30	13	9	-	15	15	15	Cont.	Cont.
Out	-	-	3	-	1	-	11	4	3	-	18	22	13	-	7	23	24	-	22	10	25	-	30	7	15	-	15	15	15	Cont.	Cont.
Footnotes:																															
⁽²⁰⁾ SHARKCAGE Afloat Suite - FY20 increase is required to increase fielding of additional afloat suites to detect emerging threats in the tactical environment, provide the capability to analyze active cyber threats and take actions to contain/stop actual or potential cyber threat activities. Increases reflected in Production Support and DSA accordingly.																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15					P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)					Modification Number / Title: 8 / SHARKCAGE - Ashore (DA070)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	0.000	9.136	15.237	11.187	0.000	11.187	15.116	4.805	9.069	15.237	Continuing	Continuing
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	0.000	9.136	15.237	11.187	0.000	11.187	15.116	4.805	9.069	15.237	Continuing	Continuing
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	0.000	9.136	15.237	11.187	0.000	11.187	15.116	4.805	9.069	15.237	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Description: SHARKCAGE ashore suites represent multiple SHARKCAGE architectures and variants that are specifically designed to each site in accordance with Fleet and Defensive Cyber Operations (DCO) requirements based on emergent threats in the tactical environment. Capabilities provided include network tapping, sensing, and analytic toolsets for passively monitoring multiple Navy networks to detect and assess cyber threats across multiple security enclaves. Ashore sites include Navy Cyber Defense Operations Command (NCDOC), Navy Information Operations Commands (NIOC), Fleet Cyber Command / Commander Tenth Fleet (FCC/C10F), Nuclear Command, Control, and Communications, Navy (NC3-N), Ballistic Missile Defense (BMD) (i.e., Aegis Ashore), and SHARKCAGE production labs, as well as other network concentration facilities. SHARKCAGE procures equipment to include: hardware, software, servers, data storage, taps, switches, laptops, and ancillary systems that provide the following capabilities: passive network sensor nodes that collect live network traffic and use signature-based and heuristic Intrusion Detection Systems (IDS) to conduct initial analysis and alerting; analytic nodes which consist primarily of systems supporting ingest, storage, retention, retrieval, correlation, and real-time alerting of network traffic Packet Capture (PCAP) and event data; and analysis workbenches which provide an environment of tools for DCO analysts to support all aspects of the DCO mission, local to DCO forces at FCC/C10F, NCDOC, NIOC, Naval Computer and Telecommunications Stations (NCTS), and Naval Computer and Telecommunications Area Master Stations (NCTAMS). SHARKCAGE NCDOC Suite is the primary ashore site that supports the entire Navy enterprise and provides the capability to analyze active cyber threats and take actions to contain/stop actual or potential threat activities. SHARKCAGE Analytic Suite provides a regional/area of responsibility capability to analyze active cyber threats and take actions to contain/stop actual or potential threat activities. SHARKCAGE Sensor Suite provide operators with the ability to conduct data ingest, data storage, data retention, data retrieval, data correlation, and real-time alerting of event-based data to support the DCO mission.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15				P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)				Modification Number / Title: 8 / SHARKCAGE - Ashore (DA070)					
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: Shore			Modification Type: Various					Related RDT&E PEs: 0303140N					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement													
Modification Item 1 of 1: SHARKCAGE - Ashore (DA070)													
B Kits													
Recurring													
1.1.1) SHARKCAGE NCDOD Suite - NonOrganic		- / -	1 / 7.200	- / -	- / -	- / -	- / -	- / -	1 / 7.200	- / -	Continuing	Continuing	
1.1.2) SHARKCAGE Analytic Suite - NonOrganic ⁽²¹⁾		- / -	- / -	2 / 9.600	1 / 4.800	- / -	1 / 4.800	2 / 9.600	- / -	- / -	2 / 9.600	Continuing	Continuing
1.1.3) SHARKCAGE Sensor Suite - NonOrganic ⁽²²⁾		- / -	1 / 0.325	5 / 1.625	7 / 2.275	- / -	7 / 2.275	5 / 1.625	6 / 1.950	1 / 0.325	5 / 1.625	Continuing	Continuing
Subtotal: Recurring		- / 0.000	- / 7.525	- / 11.225	- / 7.075	- / -	- / 7.075	- / 11.225	- / 1.950	- / 7.525	- / 11.225	Continuing	Continuing
Subtotal: SHARKCAGE - Ashore (DA070)		- / -	2 / 7.525	7 / 11.225	8 / 7.075	- / -	8 / 7.075	7 / 11.225	6 / 1.950	2 / 7.525	7 / 11.225	Continuing	Continuing
Subtotal: Procurement, All Modification Items		- / 0.000	- / 7.525	- / 11.225	- / 7.075	- / -	- / 7.075	- / 11.225	- / 1.950	- / 7.525	- / 11.225	Continuing	Continuing
Support (All Modification Items)													
2.1) Train-the-Trainer		- / -	- / 0.150	- / 0.150	- / 0.150	- / -	- / 0.150	- / 0.150	- / 0.150	- / 0.150	- / 0.150	Continuing	Continuing
2.2) Production Support		- / -	- / 0.370	- / 0.386	- / 0.169	- / -	- / 0.169	- / 0.354	- / 0.101	- / 0.193	- / 0.386	- / -	- / 1.959
2.3) DSA		- / -	- / 0.216	- / 0.661	- / 0.775	- / -	- / 0.775	- / 0.677	- / 0.504	- / 0.326	- / 0.661	Continuing	Continuing
Subtotal: Support		- / 0.000	- / 0.736	- / 1.197	- / 1.094	- / -	- / 1.094	- / 1.181	- / 0.755	- / 0.669	- / 1.197	Continuing	Continuing
Installation													
Modification Item 1 of 1: SHARKCAGE - Ashore (DA070)		- / 0.000	- / 0.875	- / 2.815	- / 3.018	- / 0.000	- / 3.018	- / 2.710	- / 2.100	- / 0.875	- / 2.815	Continuing	Continuing
Subtotal: Installation		- / 0.000	- / 0.875	- / 2.815	- / 3.018	- / -	- / 3.018	- / 2.710	- / 2.100	- / 0.875	- / 2.815	Continuing	Continuing
Total													
Total Cost (Procurement + Support + Installation)		0.000	9.136	15.237	11.187	0.000	11.187	15.116	4.805	9.069	15.237	Continuing	Continuing

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15										P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)										Modification Number / Title: 8 / SHARKCAGE - Ashore (DA070)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: SHARKCAGE - Ashore (DA070)																															
Manufacturer Information																															
Manufacturer Name: SHARKCAGE Equipment - SPAWAR Systems Center (SSC) Pacific															Manufacturer Location: San Diego, CA																
Administrative Leadtime (<i>in Months</i>): 2															Production Leadtime (<i>in Months</i>): 3																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates		Dec 2017				Dec 2018																									
Delivery Dates		Mar 2018				Mar 2019																									
Installation Information																															
Method of Implementation: Installed:: Installation Name: SHARKCAGE - Ashore (DA070)																															
Installation Cost		Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total								
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)								
Prior Years		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2018		- / -	2 / 0.875		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 0.875						
FY 2019		- / -	- / -		7 / 2.815		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		7 / 2.815						
FY 2020		- / -	- / -		- / -		8 / 3.018		0 / 0.000		8 / 3.018		- / -		- / -		- / -		- / -		- / -		0 / 0.000		8 / 3.018						
FY 2021		- / -	- / -		- / -		- / -		- / -		- / -		7 / 2.710		- / -		- / -		- / -		- / -		0 / 0.000		7 / 2.710						
FY 2022		- / -	- / -		- / -		- / -		- / -		- / -		- / -		6 / 2.100		- / -		- / -		- / -		0 / 0.000		6 / 2.100						
FY 2023		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		2 / 0.875		- / -		- / -		Continuing		Continuing						
FY 2024		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		7 / 2.815		- / -		0 / 0.000		7 / 2.815						
To Complete		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		Continuing		Continuing						
Total		- / -	2 / 0.875		7 / 2.815		8 / 3.018		0 / 0.000		8 / 3.018		7 / 2.710		6 / 2.100		2 / 0.875		7 / 2.815		- / -		Continuing		Continuing						
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	2	-	-	-	7	-	-	-	8	-	-	-	7	-	-	-	6	-	-	-	2	-	-	-	7	-	-	Cont.	Cont.
Out	-	-	-	2	-	-	7	-	-	-	8	-	-	-	7	-	-	-	6	-	-	-	2	-	-	-	7	-	-	Cont.	Cont.
Footnotes: ⁽²¹⁾ SHARKCAGE Analytic Suite - FY20 quantity reduction is due to the site availability of Analytic Suites, which provides a regional/Area of Responsibility (AOR) capability to analyze active cyber threats and take actions to contain/stop actual or potential threat activities. ⁽²²⁾ SHARKCAGE Sensor Suite - FY20 quantity increase is due to requirement for additional Sensor Suites, which provides operators with the ability to conduct data ingest, data storage, data retention, data retrieval, data correlation, and real-time alerting of event-based data to support the DCO mission.																															

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 15: Cryptographic Equipment							P-1 Line Item Number / Title: 3417 / MIO Intel Exploitation Team					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	3.366	0.961	0.951	0.968	0.000	0.968	0.986	1.005	1.025	1.046	-	10.308
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	3.366	0.961	0.951	0.968	0.000	0.968	0.986	1.005	1.025	1.046	-	10.308
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	3.366	0.961	0.951	0.968	0.000	0.968	0.986	1.005	1.025	1.046	-	10.308
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

[P40A / 343SA - Maritime Interdiction Operations Intel Exploitation Team]: Tactical Electronic Warfare Equipment: Procure Tactical Electronic Warfare (EW) equipment to be used in support of Indications and Warning and Force Protection. The capability includes an array of Tactical EW systems capable of both digital and analogue collection in the Radio Frequency (RF) environment. Specific collection capabilities include Digital and Analogue data collection; Specific Emitter ID, which discerns unique attributes of specific radar; Satellite Communication capability; Wireless Networks to conduct surveys, which is a telecom network mapping, and Document and Media Exploitation allowing capture of media from electronic devices.

[P40A / 343SA - Wireless Networks Mapping Equipment / Surveys]: Will procure eight (8) wireless network mapping/survey devices in FY19.

[P40A / 343SA - Specific Emitter Identification Devices]: Will procure six (6) emitter devices to track radio signals in FY20.

[P40A / 343SA - Digital / Analogue Collection Devices]: Will procure six (6) digital/analogue radios in FY18 and FY21.

[P40A / DRT 1301C+/TRS V7 Wireless Receiving System]: Will procure twelve (12) wireless Electronic Warfare (EW) systems in FY24.

[P40A / 343SA TAC-EW Dissemination]: Will procure six (6) Tactical Electronic Warfare devices in FY22 and FY23. In FY23, the unit price increase is due to inflation.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 15: Cryptographic Equipment						P-1 Line Item Number / Title: 3417 / MIO Intel Exploitation Team				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	MIO Intel Exploitation Team	P-5a			- / 3.366	- / 0.961	- / 0.951	- / 0.968	- / -	- / 0.968
P-40	Total Gross/Weapon System Cost				- / 3.366	- / 0.961	- / 0.951	- / 0.968	- / 0.000	- / 0.968
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										

Justification:
 The FY20 funding request supports the procurement of six (6) emitter devices which track radio signals. Technology updates frequently during any given year, and Table of Allowance requirements are reviewed and updated accordingly. (Details held at a higher classification level.)

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy																Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15								P-1 Line Item Number / Title: 3417 / MIO Intel Exploitation Team								Aggregated Items Title: MIO Intel Exploitation Team			

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
1) 343SA - Maritime Interdiction Operations Intel Exploitation Team																				
1.1) 343SA - Satellite Communications Equipment	A		0.307	3	0.920	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.2) 343SA - Wireless Networks Mapping Equipment / Surveys (1)(t)	A		-	-	-	-	-	-	0.119	8	0.951	-	-	-	-	-	-	-	-	-
1.3) 343SA - Wireless Networks Telcom Equipment	A		0.151	3	0.453	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.4) 343SA - Specific Emitter Identification Devices	A		0.341	3	1.024	-	-	-	-	-	-	0.161	6	0.968	-	-	-	0.161	6	0.968
1.5) 343SA - Digital / Analogue Collection Devices (t)	A		-	-	-	0.240	4	0.961	-	-	-	-	-	-	-	-	-	-	-	-
1.6) DRT 1301C+/ TRS V7 Wireless Receiving System	A		0.875	1	0.875	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.7) LANSHARK 5	A		0.094	1	0.094	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) 343SA - Maritime Interdiction Operations Intel Exploitation Team			-	-	3.366	-	-	0.961	-	-	0.951	-	-	0.968	-	-	-	-	-	0.968
Total			-	-	3.366	-	-	0.961	-	-	0.951	-	-	0.968	-	-	-	-	-	0.968

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

(t) indicates the presence of a P-5a

Footnotes:

(1) Tax applied to FYDP starting 2019.

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity:			P-1 Line Item Number / Title:						Aggregated Items:				
1810N / 02 / 15			3417 / MIO Intel Exploitation Team						MIO Intel Exploitation Team				
Item Number / Title [DODIC]	OC O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$ M)	Specs Avail Now?	Date Revision Available	RFP Issue Date	
1) 343SA - Maritime Interdiction Operations Intel Exploitation Team													
1.2) 343SA - Wireless Networks Mapping Equipment / Surveys ⁽¹⁾		2019	TBD / TBD	C / TBD	** NO PCO **	Mar 2019	Mar 2019	8	0.119	N			
1.5) 343SA - Digital / Analogue Collection Devices		2018	Digital Receiver Technology / Germantown, MD	Reqn	CDSA	Apr 2018	Apr 2018	4	0.240	N	Apr 2018	Mar 2018	

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 16: Cryptologic Equipment							P-1 Line Item Number / Title: 3501 / Cryptologic Communications Equip					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	92.729	26.167	19.009	13.090	0.000	13.090	15.818	18.351	18.505	18.882	-	222.551
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	92.729	26.167	19.009	13.090	0.000	13.090	15.818	18.351	18.505	18.882	-	222.551
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	92.729	26.167	19.009	13.090	0.000	13.090	15.818	18.351	18.505	18.882	-	222.551
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: [P5 / 1V045 Access Systems & Subsystems]: Cryptologic Carry-On Equipment: The Cryptologic Carry-On Program (CCOP) procures state-of-the-art, commercial off-the-shelf signal acquisition equipment (hardware and software) in response to combatant commander requirements for a quick-reaction surface, subsurface, and airborne cryptologic carry-on capability. The equipment is procured according to the overall requirements detailed in the Shipboard Information Warfare / Cryptologic System Operational Requirements Document and specific execution year fleet requirements as defined by the Signals of Interest (SOI) Integrated Product Team (IPT), in concert with Shipboard Signals Exploitation Space (SSES) programs to ensure synergy and seamless transition to permanently installed SSES systems. The IPT meets several times a year and determines which SOIs/Targets on the SOI list need to be addressed. Due to a continually changing threat environment, detailed requirements are dynamic and equipment procured varies each year by quantity and type. Equipment suites can be configured for many targets and tasking. Target specific subsystems can either operate as stand-alone within cryptologic spaces or as an add-on to existing equipment. Hardware procurement includes: receivers, recorders, tactical computers and related peripherals, antennas, electronic-warfare support measures systems, precision geolocation equipment, advanced signal and search equipment including spectrum analyzers and associated portable special intelligence communications equipment. CCOP equipment is installed as an augment to cryptologic capabilities on subsurface, surface, and air platforms. There are approximately 124 cryptologic capable surface ships and shore sites in the current Navy inventory. Each of these are potential users of this carry-on equipment, as are subsurface and air platforms. The temporary installation of equipment is coordinated through fleet electronic support personnel. A primary system in inventory is the Carry On Radio Spectrum Analysis & Intelligence Reporting (CORSAIR) system. Funds continue to procure CORSAIR core architecture system upgrades to provide additional affordable functionality to the combatant commands. Additional signal acquisition equipment to address specific combatant command requirements include such systems as Digital Receiver Technology (DRT), Hostile forces Integrated Targeting Service (HITS), Maritime Toxic Pen (MTP), TURBULENTWAVE / TURBULENTWIND / TURBULENTSAIL, BLUESTREAM servers, RED FALCON / VULCAN, STINGRAY, MUDCAT, Toxic Fog, Radio Frequency Distribution Unit (RFDU), TEAPARTY/TEALEAF, Generic Area Limitations Environment (GALE)-Lite, and OWN FORCE MONIOTRING equipment. This line also supports the procurement of STALLION hardware for CCOP team training. [P5 / Global Signal Analysis Laboratory (GSAL) NAVIFOR]: The Navy Global Signal Analysis Laboratory (GSAL) program, under project name CLASSIC SENSEI, provides for the timely analysis of data derived from maritime Information Warfare (IW) operations. GSAL support is conducted by Signals Analysis Laboratories (SAL) that are co-located with Fleet Information Operations Centers (FIOC) and other Fleet concentrations areas to perform high priority theater-level analysis and processing. The GSAL program office equips the SAL's with advanced signals analysis capabilities in order to accomplish the in-depth signals analysis that is required to effectively address processing and exploitation requirements in support of both maritime tactical and national strategic IW objectives. Funding is required to sustain SAL operations and support required integration for security and new technology requirements to facilitate highly technical analysis in a highly diverse, constantly changing, and contested electromagnetic environment. Navy SALs are integral components of the Tech Signal Intelligence (SIGINT) Revitalization initiatives that provide a collaborative enterprise architecture. GSAL procurement funding facilitates the data handling subsystem accredited by National Security Agency (NSA). This architecture known as LABLINK provides advanced manipulation, forwarding, and exchanges of data while providing connectivity with collaborating military, national, and international partners throughout the intelligence community. GSAL laboratories are located at Navy Information Operations Command (NIOC) Hawaii (Pacific Technical												

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 16: Cryptologic Equipment		P-1 Line Item Number / Title: 3501 / Cryptologic Communications Equip
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
Analysis Center (PTAC)), NIOC Ft Gordon, Georgia (Atlantic SAL), NIOC Whidbey Island (Whidbey SAL), NIOC Bahrain (Bahrain SAL), NCWDG Suitland MD (Research SAL), Naval Information Operations Detachment, (NIOD) Digby (United Kingdom SAL), Australian and New Zealand Army Corps, Canberra Australia (ANZACSAL) and NIOC Yokosuka, Japan (Japan SAL) and at the Naval Information Warfare Activity (NIWA).		
[P5 / System Integration & Installation of Hardware (FIOC) NAVIFOR]: There are FIOCs co-located with National Security Agency (NSA) Cryptologic Centers supporting Navy Geographical Priorities while leveraging national capabilities. Each are charged with providing regionally focused Information Operation (IO) and Signal Intelligence (SIGINT) support to Fleet Commanders. FIOCs leverage NSA capabilities, analysis, and manpower in support of Fleet requirements. Funds are required for purchasing and maintaining life cycle support for command and control systems connected to SCI networks at the FIOCs. Funds are also provided to develop and maintain a common baseline of analytical intelligence software tools supporting FIOC capability areas as defined in the FIOC operational strategy (OPSTRAT).		
[P5 / EW Fleet Synthethic Trainer Consolidation]: The Department's Fleet Synthetic Training (FST) (SIGINT / C-ISR) initiative addresses the lack of realistic SIGINT / C-ISR during exercises supporting the Fleet Training Continuum (FTC). Addresses critical requirements for SIGINT and C-ISR in Fleet Synthetic Training (FST) required in preparing Intelligence personnel/teams for forward deployed operations. This effort provides the ability to exercise shipboard TS-SCI capabilities in an environment not subject to counter-detection. Improves staff operational planning and tactical decision making combined with improvements to overall Intelligence team readiness and certification throughout the Optimized-Fleet Response Plan (O-FRP). Supports assured Command/Control (C2) and Cyber Situational Awareness/Cyber Defense and Enhanced Naval Network Environment (NNE) Information Dominance Integrated Process Capabilities Lists (IPCLs). Builds upon GENSER NCTE (Navy Continuous Training Environment) to expand the existing General Services (GENSER) NCTE with above GENSER capabilities to include TS-SCI FST architecture/capabilities. Provides for architecture, capabilities and scenario build-out as well as required life-cycle management. This capability will enhance individual units and Strike Groups in exercising integrated kinetic and non-kinetic capabilities, to include operations/intelligence fusion required for comprehensive maritime operations and operational proficiency in Electromagnetic Maneuver Warfare (EMW).		
[P5 / Fleet Synthetic Training (FST) SIGINT / C-ISR]: The Department's Fleet Synthetic Training (FST) Signals Intelligence / Counter - Intelligence, Surveillance, and Reconnaissance (SIGINT / C-ISR) initiative addresses the lack of realistic SIGINT / C-ISR during exercises supporting the Fleet Training Continuum (FTC). Addresses critical requirements for SIGINT and C-ISR in Fleet Synthetic Training (FST) required in preparing Intelligence personnel/teams for forward deployed operations. This effort provides systems with the ability to exercise shipboard Top Secret-Sensitive Compartmented Information (TS-SCI) capabilities in an environment not subject to counter-detection. This improves staff operational planning and tactical decision making and overall Intelligence team readiness and certification throughout the Optimized - Fleet Response Plan (O-FRP). Supports Assured Command and Control (C2) and Cyber Situational Awareness/Cyber Defense and Enhanced Naval Network Environment (NNE) Information Dominance Integrated Prioritized Capabilities Lists (IPCLs).		
This effort provides the capability to exercise shipboard Top Secret-Sensitive Compartmented Information (TS-SCI) capabilities by expanding upon General Service (GENSER) Navy Continuous Training Environment (NCTE) capabilities to add Above GENSER architecture/capabilities. Provides architecture, systems and required life cycle management to improve staff operational planning and tactical decision making, and overall intelligence team readiness and certification throughout the Optimized-Fleet Response Plan (O-FRP). This capability will enhance individual units and strike groups in exercising integrated kinetic and non-kinetic capabilities to include operations/intelligence fusion required for comprehensive maritime operations and operational proficiency in Signals Intelligence (SIGINT), Electromagnetic Maneuver Warfare (EMW), and cyberspace operations.		
[P5 / Fleet Synthetic Training (FST) (SIGINT / C-ISR)]: This capability will enhance individual units and Strike Groups in exercising integrated kinetic and non-kinetic capabilities to include operations/intelligence fusion required for comprehensive maritime operations and operational proficiency in Signals Intelligence (SIGINT), Electromagnetic Maneuver Warfare (EMW), and cyberspace operations. FY20 funds continues the work of Life Cycle Management (LCM) of TS/SCI NCTE nodes, procures portable embarkation kits (PEKs), and TS/SCI systems for permanent shipboard installations. FY20 increase in shipboard installation quantity reflects installations for newly commissioned ships.		
[P5 / Tier 1 TS/SCI NCTE & VOIP Procurement & Installation]: FY19 funding completed procurement and installation of the Tier 1 NCTE node. There is no node scheduled for procurement in FY20 however, the second NCTE node is programmed to be procured in FY21.		
[P5 / Tier 1 Life Cycle Management (LCM)]: FY19 and FY20 fund life cycle technical refresh of various equipment to maintain operability of the Tier 1 node.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 16: Cryptologic Equipment		P-1 Line Item Number / Title: 3501 / Cryptologic Communications Equip
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
[P5 / SIGINT / C-ISR Systems - Permanent Shipboard Installation]: This is a new Cost Element in FY20. Shipboard installations commence in FY20 with 17 permanent shipboard installations to provide capability for comprehensive maritime operations and operational proficiency in Signals Intelligence (SIGINT), Electromagnetic Maneuver Warfare (EMW), and cyberspace operations. [P5 / SIGINT / C-ISR Systems - Life Cycle Management (LCM)]: This is a new Cost Element in FY20. Provides life maintenance/technical refresh for previously installed shipboard systems. [P5 / Fleet Training Wholeness (FTW)]: FY19 funds procurement of installation and support services for permanent shipboard equipment. FY20 funds procurement of additional portable embarkation kits (PEKs) to support distributed training.		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 16: Cryptologic Equipment						P-1 Line Item Number / Title: 3501 / Cryptologic Communications Equip				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / Cryptologic Communications Equip	P-5a, P-21			- / 92.729	- / 26.167	- / 19.009	- / 13.090	- / 0.000	- / 13.090
P-40	Total Gross/Weapon System Cost				- / 92.729	- / 26.167	- / 19.009	- / 13.090	- / 0.000	- / 13.090
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										
Justification: FY20 funds will continue to satisfy signals exploitation capability gaps as determined by the Cryptologic Carry-on Program (CCOP) Signals of Interest (SOI) Integrated Product Team (IPT) and Fleet Signals Development Working Group (FSDWG) and provide supplemental capability to host Signals Intelligence systems. At this time the recommendations for procurements that are best suited to address identified gaps may include: Digital Receiver Technology (DRT), Hostile forces Integrated Targeting Service (HITS), Maritime Toxic Pen (MTP), TURBULENTWAVE / TURBULENTWIND / TURBULENTSAIL, BLUESTREAM servers, RED FALCON / VULCAN, STINGRAY, MUDCAT, Toxic Fog, Radio Frequency Distribution Unit (RFDU), TEAPARTY/TEALEAF, and Generic Area Limitations Environment (GALE)-Lite, BLACKBIRD AND QUICKSHOT, OWN FORCE MONITORING equipment, Carry On Radio Spectrum Analysis & Intelligence Reporting (CORSAIR), as well as Adaptive Mission Packages. This line supports the procurement of STALLION hardware for CCOP team training. FY20 funds will provide for the timely analysis of data derived from maritime mobile Information Warfare (IW) operations. Global Signals Analysis Laboratory (GSAL) support is conducted by Signals Analysis Laboratories (SAL) co-located with Fleet Information Operations Centers (FIOC) at theater-level analysis and processing centers and by QuickLook/Nodes forward-based at fleet concentration areas. The Navy's Fleet Synthetic Training (FST) (SIGINT / C-ISR) initiative addresses the lack of realistic SIGINT / C-ISR during exercises supporting the Fleet Training Continuum (FTC). FY20 funds continues the work of Life Cycle Management (LCM) of TS/SCI NCTE nodes, procures portable embarkation kits (PEKs), and TS/SCI systems for permanent shipboard installations. Increase in shipboard installation quantity reflects installations on newly commissioned ships.										

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 16						P-1 Line Item Number / Title: 3501 / Cryptologic Communications Equip						Item Number / Title [DODIC]: 1 / Cryptologic Communications Equip						
ID Code (A=Service Ready, B=Not Service Ready) :									MDAP/MAIS Code:									
Resource Summary				Prior Years		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total				
Procurement Quantity <i>(Units in Each)</i>				-		-		-		-		-		-				
Gross/Weapon System Cost <i>(\$ in Millions)</i>				92.729		26.167		19.009		13.090		0.000		13.090				
Less PY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Net Procurement (P-1) <i>(\$ in Millions)</i>				92.729		26.167		19.009		13.090		0.000		13.090				
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Total Obligation Authority <i>(\$ in Millions)</i>				92.729		26.167		19.009		13.090		0.000		13.090				
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																		
Initial Spares <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>				-		-		-		-		-		-				
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Hardware - 1V045 Access Systems & Subsystems Cost																		
Recurring Cost																		
1.1.1) CCOP Systems & Subsystems ^(†) (1)	242.761	335	81.325	356.516	64	22.817	235.582	67	15.784	242.450	38	9.213	-	-	-	242.450	38	9.213
Subtotal: Recurring Cost	-	-	81.325	-	-	22.817	-	-	15.784	-	-	9.213	-	-	-	-	-	9.213
Subtotal: Hardware - 1V045 Access Systems & Subsystems Cost	-	-	81.325	-	-	22.817	-	-	15.784	-	-	9.213	-	-	-	-	-	9.213
Hardware - GDX6D - Global Signal Analysis Equipment Cost																		
Recurring Cost																		
2.1.1) Global Signal Analysis Laboratory (GSAL) NAVIFOR ^(†) (2)	1,665.750	4	6.663	783.000	1	0.783	771.000	1	0.771	784.000	1	0.784	-	-	-	784.000	1	0.784
Subtotal: Recurring Cost	-	-	6.663	-	-	0.783	-	-	0.771	-	-	0.784	-	-	-	-	-	0.784
Subtotal: Hardware - GDX6D - Global Signal Analysis Equipment Cost	-	-	6.663	-	-	0.783	-	-	0.771	-	-	0.784	-	-	-	-	-	0.784
Hardware - GDX6D - System Integration and Installation of Hardware Cost																		
Recurring Cost																		
3.1.1) System Integration & Installation of Hardware (FIOC) NAVIFOR ^(†)	670.000	1	0.670	741.000	1	0.741	719.000	1	0.719	721.000	1	0.721	-	-	-	721.000	1	0.721

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 16						P-1 Line Item Number / Title: 3501 / Cryptologic Communications Equip						Item Number / Title [DODIC]: 1 / Cryptologic Communications Equip						
ID Code (A=Service Ready, B=Not Service Ready) :									MDAP/MAIS Code:									
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Subtotal: Recurring Cost	-	-	0.670	-	-	0.741	-	-	0.719	-	-	0.721	-	-	-	-	-	0.721
Subtotal: Hardware - GDX6D - System Integration and Installation of Hardware Cost	-	-	0.670	-	-	0.741	-	-	0.719	-	-	0.721	-	-	-	-	-	0.721
Hardware - EW Fleet Synthetic Trainer Consolidation Cost																		
Recurring Cost																		
4.1.1) EW Fleet Synthetic Trainer Consolidation (NAVIFOR) ^(†)	-	-	-	153.000	1	0.153	-	-	-	159.000	1	0.159	-	-	-	159.000	1	0.159
Subtotal: Recurring Cost	-	-	-	-	-	0.153	-	-	-	-	-	0.159	-	-	-	-	-	0.159
Subtotal: Hardware - EW Fleet Synthetic Trainer Consolidation Cost	-	-	-	-	-	0.153	-	-	-	-	-	0.159	-	-	-	-	-	0.159
Hardware - Fleet Synthetic Training (FST) SIGINT / C-ISR Cost																		
Recurring Cost																		
5.1.1) Tier 1 TS/ SCI NCTE & VOIP Procurement & Installation ^{(†) (3)}	-	-	-	396.000	1	0.396	456.000	1	0.456	-	-	-	-	-	-	-	-	-
5.1.2) Tier 1 Life Cycle Management (LCM) ^{(†) (4)}	-	-	-	159.000	1	0.159	226.000	1	0.226	225.000	1	0.225	-	-	-	225.000	1	0.225
5.1.3) SIGINT / C-ISR Systems - Permanent Shipboard Installation ^{(†) (5)}	-	-	-	-	-	-	-	-	-	52.941	17	0.900	-	-	-	52.941	17	0.900
5.1.4) SIGINT / C-ISR Systems - Life Cycle Management (LCM) ^{(†) (6)}	-	-	-	-	-	-	-	-	-	7.780	17	0.132	-	-	-	7.780	17	0.132
5.1.5) Fleet Training Wholeness (FTW) ^{(†) (7)}	-	-	-	-	-	-	700.000	1	0.700	659.000	1	0.659	-	-	-	659.000	1	0.659
Subtotal: Recurring Cost	-	-	-	-	-	0.555	-	-	1.382	-	-	1.916	-	-	-	-	-	1.916
Subtotal: Hardware - Fleet Synthetic Training (FST) SIGINT / C-ISR Cost	-	-	-	-	-	0.555	-	-	1.382	-	-	1.916	-	-	-	-	-	1.916
Support - 1V555 Production Support Cost																		

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Exhibit P-5, Cost Analysis: PB 2020 Navy													Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 16						P-1 Line Item Number / Title: 3501 / Cryptologic Communications Equip						Item Number / Title [DODIC]: 1 / Cryptologic Communications Equip						
ID Code (A=Service Ready, B=Not Service Ready) :									MDAP/MAIS Code:									
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
6.1) Production Support	-	-	4.071	-	-	1.118	-	-	0.353	-	-	0.297	-	-	-	-	-	0.297
Subtotal: Support - 1V555 Production Support Cost	-	-	4.071	-	-	1.118	-	-	0.353	-	-	0.297	-	-	-	-	-	0.297
Gross/Weapon System Cost	-	-	92.729	-	-	26.167	-	-	19.009	-	-	13.090	-	-	0.000	-	-	13.090
Remarks: [Hardware/Recurring] [P5 / Fleet Synthetic Training (FST) SIGINT/C-ISR]: Fleet Synthetic Training (FST) SIGINT/C-ISR: In FY 18 and out, this will fund Life Cycle Management (LCM) of the TS/SCI NCTE node on the East Coast and 14 Portable Embarkation Kits (PEKs).																		
(†) indicates the presence of a P-5a																		
Footnotes: (1) The funding decrease of \$6.571M from FY19 to FY20 is a result of satisfying Overseas Contingency Operations (OCO), Joint Urgent Operational Needs (JUON), and SOUTHCOM ISR requirements by upgrading, procuring and fielding desired Red Falcon capability and satisfying other signals exploitation gaps and Signals of Interest (SOI) requirements through Quick Reaction Capability. In addition, quantity and unit cost of Cryptologic Carry-on Program (CCOP) systems and subsystems vary because procurements are in response to current Combatant Command fleet requirements as well as the Signals of Interest (SOI) and target threat list which is updated twice a year. CCOP system and subsystem unit costs range from \$.050M to \$.900M, with the exception of Maritime Toxic Pen (MTP) which is priced at \$2.150M per system and USNS (United States Naval Ship) OCO platforms which are priced at \$1.786 per system. The unit cost listed above represents the average price per system. (2) Quantity reflects investment into LABLINK infrastructure supporting Signals Analysis Laboratories (SAL) co-located with Fleet Information Operations Centers (FIOC) at theater-level analysis and processing centers at forward-based at fleet concentration areas. (3) Decrease in funding from FY19 to FY20 (FY20 funding is \$0) is due to the procurement of the Tier 1 NCTE node being completed in FY19. No funding required for FY20 however, funding will be required in FY21 for a programmed Tier 1 node plus 2 Voice Over Internet Protocol (VOIP) systems (one for the Tier 1 node procured in FY18/19 and one for the Tier 1 node procured in FY21). (4) Slight funding decrease from FY19 to FY20 (\$1,000) reflects slight fluctuations in equipment costs to provide life cycle technical refresh of various equipment to maintain operability of the Tier 1 NCTE node. (5) This is a new Cost Element for FY20. Provides equipment/systems for 17 permanent shipboard installations. Funding will be required through the FYDP. (6) This is a new Cost Element for FY20. Provides life cycle maintenance and support for shipboard installed equipment/systems. Funding will be required through the FYDP. (7) Decrease in funding from FY19 to FY20 is reflective of fluctuations in both the number of shipboard installations per year, the locations of those installations (i.e., decreased travel requirement), and the exact number of PEKs required each year.																		

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 16				P-1 Line Item Number / Title: 3501 / Cryptologic Communications Equip				Item Number / Title [DODIC]: 1 / Cryptologic Communications Equip				
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) CCOP Systems & Subsystems ^(†)		2018 ⁽⁸⁾	VARIOUS ⁽⁹⁾ / VARIOUS	C / CPFF	SSC PAC/SSC LANT	Feb 2018	Jul 2018	36	236.305	Y		Oct 2017
1.1.1) CCOP Systems & Subsystems ^(†)	✓	2018	VARIOUS ⁽⁹⁾ / VARIOUS	C / CPFF	SSC PAC/SSC LANT	Feb 2018	Jul 2018	28	511.070	Y		Oct 2017
1.1.1) CCOP Systems & Subsystems ^(†)		2019	VARIOUS ⁽⁹⁾ / VARIOUS	C / CPFF	SSC PAC/SSC LANT	Feb 2019	Jul 2019	46	238.791	Y		Oct 2018
1.1.1) CCOP Systems & Subsystems ^(†)	✓	2019	VARIOUS ⁽⁹⁾ / VARIOUS	C / CPFF	SSC PAC/SSC LANT	Feb 2019	Jul 2019	21	228.555	Y		Oct 2018
1.1.1) CCOP Systems & Subsystems ^(†)		2020	VARIOUS ⁽⁹⁾ / VARIOUS	C / CPFF	SSC PAC/SSC LANT	Feb 2020	Jul 2020	38	242.450	N	Apr 2020	Oct 2019
2.1.1) Global Signal Analysis Laboratory (GSAL) NAVIFOR		2018	Classified / Classified	C / FFP	Washington DC	Nov 2017	Nov 2017	1	783.000	N	Nov 2017	Nov 2017
2.1.1) Global Signal Analysis Laboratory (GSAL) NAVIFOR		2019	Classified / Classified	C / FFP	Washington DC	Nov 2018	Nov 2018	1	771.000	N	Nov 2018	Nov 2018
2.1.1) Global Signal Analysis Laboratory (GSAL) NAVIFOR		2020	Classified / Classified	C / FFP	Washington DC	Nov 2019	Nov 2019	1	784.000	N	Nov 2019	Nov 2019
3.1.1) System Integration & Installation of Hardware (FIOC) NAVIFOR		2018	SPAWAR / San Diego	C / FFP	SPAWAR San Diego	Feb 2018	Aug 2018	1	741.000	N	Nov 2017	Oct 2017
3.1.1) System Integration & Installation of Hardware (FIOC) NAVIFOR		2019	SPAWAR / San Diego	C / FFP	SPAWAR San Diego	Sep 2019	Mar 2020	1	719.000	N	Nov 2018	Oct 2018
3.1.1) System Integration & Installation of Hardware (FIOC) NAVIFOR		2020	SPAWAR / San Diego	C / TBD	** NO PCO **	Oct 2019	Oct 2019	1	721.000	N	Nov 2019	Oct 2019
4.1.1) EW Fleet Synthetic Trainer Consolidation (NAVIFOR)		2018	SSC PAC / San Diego	MIPR	SSC PAC (Stallion Engineering)	Feb 2018	Jul 2018	1	153.000	N	Sep 2018	Jan 2018
4.1.1) EW Fleet Synthetic Trainer Consolidation (NAVIFOR)		2020	SSC PAC / San Diego	C / TBD	** NO PCO **	Feb 2020	Feb 2020	1	159.000	N	Aug 2020	Jan 2020
5.1.1) Tier 1 TS/SCI NCTE & VOIP Procurement & Installation		2018	Alion Science & Technology / McLean, VA	C / FFP	DTIC	Dec 2017	Dec 2017	1	396.000	N	Jan 2018	Dec 2016
5.1.1) Tier 1 TS/SCI NCTE & VOIP Procurement & Installation		2019	Alion Science & Technology / McLean, VA	C / FFP	DTIC	Oct 2018	Oct 2018	1	456.000	N	Jan 2019	Mar 2017
5.1.2) Tier 1 Life Cycle Management (LCM)		2018	Alion Science & Technology / McLean, VA	C / FFP	DTIC	Dec 2017	Dec 2017	1	159.000	N	Jan 2018	Dec 2016
5.1.2) Tier 1 Life Cycle Management (LCM)		2019	Alion Science & Technology / McLean, VA	C / FFP	DTIC	Oct 2018	Oct 2018	1	226.000	N	Jan 2019	Mar 2017
5.1.2) Tier 1 Life Cycle Management (LCM)		2020	Alion Science & Technology / McLean, VA	C / FFP	DTIC	Oct 2019	Oct 2019	1	225.000	N	Jan 2020	Oct 2018

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 16				P-1 Line Item Number / Title: 3501 / Cryptologic Communications Equip				Item Number / Title [DODIC]: 1 / Cryptologic Communications Equip				

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
5.1.3) SIGINT / C-ISR Systems - Permanent Shipboard Installation		2020	Alion Science & Technology / McLean, VA	C / FFP	DTIC	Oct 2019	Oct 2019	17	52.941	N	Jan 2020	Mar 2017
5.1.4) SIGINT / C-ISR Systems - Life Cycle Management (LCM)		2020	Alion Science & Technology / McLean, VA	C / FFP	DTIC	Oct 2019	Oct 2019	17	7.780	N	Jan 2020	Oct 2019
5.1.5) Fleet Training Wholeness (FTW)		2019	Alion Science & Technology / McLean, VA	C / FFP	DTIC	Jan 2019	Jan 2019	1	700.000	N	Oct 2018	Dec 2016
5.1.5) Fleet Training Wholeness (FTW)		2020	Alion Science & Technology / McLean, VA	C / FFP	DTIC	Oct 2019	Oct 2019	1	659.000	N	Oct 2019	Mar 2017

^(†) indicates the presence of a P-21

Footnotes:

⁽⁸⁾ FY18-FY20 Vendors: BIT systems, TICOM, KAB, SRC

⁽⁹⁾ Cryptologic Carry-on Program (CCOP) equipment is procured according to the overall requirements detailed in the Shipboard Information Warfare/Cryptologic System Operational Requirements Document and specific execution year fleet requirements as defined by the Signals Of Interest (SOI) Integrated Product Team (IPT). Due to a continually changing threat environment, detailed requirements are dynamic, contract award timelines and equipment procured varies each year by quantity and type.

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019														
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 16										P-1 Line Item Number / Title: 3501 / Cryptologic Communications Equip										Item Number / Title [DODIC]: 1 / Cryptologic Communications Equip														
Cost Elements <i>(Units in Each)</i>							Fiscal Year 2018										Fiscal Year 2019													BALANCE				
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT				Calendar Year 2018										Calendar Year 2019														
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG		SEP			
1.1.1) CCOP Systems & Subsystems ⁽¹⁾																																		
Prior Years Deliveries: 335																																		
	1	2018	NAVY	36	0	36				A -	-	-	-	-	5	5	5	5	5	5	5	5	1											0
✓	1	2018	NAVY	28 ⁽¹⁰⁾	0	28				A -	-	-	-	-	5	5	5	5	3	5											0			
	1	2019	NAVY	46 ⁽¹¹⁾	0	46																	A -	-	-	-	-	5	5	5	31			
✓	1	2019	NAVY	21	0	21																	A -	-	-	-	-	5	4	4	8			
	1	2020	NAVY	38	0	38																											38	
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP				

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Exhibit P-21, Production Schedule: PB 2020 Navy																			Date: March 2019																						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 16										P-1 Line Item Number / Title: 3501 / Cryptologic Communications Equip										Item Number / Title [DODIC]: 1 / Cryptologic Communications Equip																					
Cost Elements <i>(Units in Each)</i>							Fiscal Year 2020										Fiscal Year 2021													BALANCE											
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT				Calendar Year 2020										Calendar Year 2021																					
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG		SEP										
1.1.1) CCOP Systems & Subsystems ⁽¹⁾																																									
Prior Years Deliveries: 335																																									
	1	2018	NAVY	36	36	0																												0							
✓	1	2018	NAVY	28 ⁽¹⁰⁾	28	0																												0							
	1	2019	NAVY	46 ⁽¹¹⁾	15	31																												5	5	5	5	5	5	1	0
✓	1	2019	NAVY	21	13	8																												4	4						
	1	2020	NAVY	38	0	38				A	-	-	-	-	5	5	5	5	5	5	5	3											0								
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP											

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Exhibit P-21, Production Schedule: PB 2020 Navy									Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 16					P-1 Line Item Number / Title: 3501 / Cryptologic Communications Equip					Item Number / Title [DODIC]: 1 / Cryptologic Communications Equip			
MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)								
		MSR For 2020	1-8-5 For 2020	MAX For 2020	Initial				Reorder				
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	
1	VARIOUS ⁽⁹⁾ - VARIOUS	1	40	90	0	4	5	9	0	4	5	9	

"A" in the Delivery Schedule indicates the Contract Award Date.

Note: Due to space limitations, quantities in the Exhibit P-21 delivery calendar are truncated and rounded based on the maximum quantity in the calendar as follows. If the maximum quantity is less than or equal to than 9,999, all quantities are shown as each. If the maximum quantity is between 10,000 and 999,999 all quantities are shown in thousands. If the maximum quantity is between 1,000,000 and 999,999,999 all quantities are shown in millions (rounded to the nearest thousand). If the maximum quantity is equal or greater than 1,000,000,000 all quantities are shown in billions (rounded to the nearest million).

Footnotes:

⁽⁹⁾ Cryptologic Carry-on Program (CCOP) equipment is procured according to the overall requirements detailed in the Shipboard Information Warfare/Cryptologic System Operational Requirements Document and specific execution year fleet requirements as defined by the Signals Of Interest (SOI) Integrated Product Team (IPT). Due to a continually changing threat environment, detailed requirements are dynamic, contract award timelines and equipment procured varies each year by quantity and type.

⁽¹⁰⁾ OCO funds for Red Falcon, JUON and USNS Platforms. USNS OCO funds for \$9.5M BTR recieved Aug 2018.

⁽¹¹⁾ OCO funds for SOUTHCOM ISR requirements and funds CCOP equipment to SOUTHCOM maritime assets.

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 17: Other Electronic Support							P-1 Line Item Number / Title: 3620 / Coast Guard Equipment					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	137.277	36.584	40.713	61.370	0.000	61.370	72.638	68.265	68.171	69.536	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	137.277	36.584	40.713	61.370	0.000	61.370	72.638	68.265	68.171	69.536	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	137.277	36.584	40.713	61.370	0.000	61.370	72.638	68.265	68.171	69.536	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	0.226	-	0.226	0.289	0.286	0.344	0.382	Continuing	Continuing
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: The Coast Guard Equipment line funds the Coast Guard Combat System Suite for United States Coast Guard (USCG) cutters under the Coast Guard Surface Asset Acquisition Program. Under inter-service agreement (delineated in OPNAVINST 4000.79C), DON plans, programs, and budgets for specific Navy military equipment, systems and logistic support requirements for Coast Guard units to ensure the Coast Guard is prepared to execute naval warfare tasks in consonance with US Navy units. Ship construction and installation costs are funded under the Department of Homeland Security appropriation. The Combat Systems and Weapons Suite will be aligned with future naval ship building programs to support commonality among the two Service's systems and meet National Fleet objectives. The Combat System Suite must compliment and integrate with Navy Combat Systems. The suite is an appropriate balance of equipment to ensure the Coast Guard is prepared to accomplish the assigned Naval Warfare tasks in concert with US Navy units. The Surface Asset Acquisition Program Combat Suites include the following: [P40A / CG001 - SPQ-9B RADAR]: Provides the AN/SPQ-9B radar for the Maritime Security Cutter, Large (WMSL) Class, aka the National Security Cutter (NSC), to track surface targets and low fliers in support of potential gun engagements. [P40A / IFF AIMS]: Provides the AN/UPX-29A Identification Friend or Foe (IFF) System for the National Security Cutter (NSC), aka the Maritime Security Cutter, Large (WMSL), and the Offshore Patrol Cutter (OPC) Class, aka the Maritime Security Cutter, Medium (WMSM). The AN/APX-123 Transponder is procured for the Fast Response Cutter (FRC) aka Patrol Coastal Cutter (WPC). [P40A / CG003 DECOYS MK 53]: Provides the MK 53 Mod 6 Decoy Launching System (DLS) for the National Security Cutter (NSC), aka the Maritime Security Cutter, Large (WMSL), and the Offshore Patrol Cutter (OPC) Class, aka the Maritime Security Cutter, Medium (WMSM) to provide soft-kill capability. [P40A / CG004 SLQ-32]: Provides the AN/SLQ-32 Electronic Warfare System and the Battle Force Electronic Warfare Trainer (BEWT) for the National Security Cutter (NSC) Class, aka the Maritime Security Cutter, Large (WMSL), to perform Electronic Support Measures to support soft-kill measures. [P40A / CG005 MK 46/MK 20 OPTICAL SIGHT]: Provides the MK 46 Mod 1 Optical Sighting System (OSS) for the National Security Cutter, hulls WMSL 750-753. The MK 20 Mod 0 Electro-Optical Sighting System (EOSS) is procured for the National Security Cutter, (NSC) hulls WMSL 754-760 and the Offshore Patrol Cutter (OPC). These sighting systems are components of the MK48 Gun Weapon System (GWS) and provide fire control optical daytime and thermal imaging (infrared) sensor, and laser range finding to support engagements of hostile surface and air targets.												

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 17: Other Electronic Support		P-1 Line Item Number / Title: 3620 / Coast Guard Equipment
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
[P40A / CG006 COMBAT SYSTEM INTEGRATION]: Ensures successful integration and system interoperability of Navy type equipment that affects the Combat System of USCG NSCs (WMSLs), FRCs (WPCs), OPC (WMSMs), and the 270' Medium Endurance Cutter (WMEC) modernization effort. [P40A / CG007 MULTI-MODE RADAR]: MMR will provide Air Surveillance, Surface Surveillance, GWS support and IFF Antenna functions for Offshore Patrol Cutter (OPC) and Polar Security Cutter (PSC). [P40A / CG008 ATHENA CCD]: ATHENA Control, Correlation & Display (CCD) System for the OPC. The ATHENA CCD uses existing AEGIS BSL 9, Common Source Library (CSL) code to control and display MMR and IFF data. The systems will also provide target queuing for Gun Weapon System engagement. FY2017-2018 ATHENA Combat System Control and Display integration supports software upgrade and hardware/software integration of the Technical Insertion (TI)-16 Common Display System for the MMR and IFF to provide data to the AN/SLQ-32(V)6 and the MK48 Gun Weapon System for target engagement on the Offshore Patrol Cutter (OPC), aka the Maritime Security Cutter, Medium (WMSM). Includes safety, certification, technical documentation, and information assurance efforts. [P40A / OPC C4I]: Funds are required for the procurement of Command, Control, Communications, Computers, and Intelligence (PEO C4I) for the new OPC Class, the Coast Guard's highest acquisition priority. Under inter-service agreement, the Navy budgets for specific Navy military equipment, systems and logistic support requirements for Coast Guard units to ensure the Coast Guard is prepared to execute naval warfare tasks in consonance with US Navy units. Ship construction and installation costs are funded under the Department of Homeland Security appropriation. Specific C4I systems to be procured include: AN/ SRC-65 VHF/UHF Line of Sight Satellite Communication, ARC-210 Radios (Qty 11 per hull); OE-570D Antenna Qty (2); Navy Modular Automated Communications System (AN/SYQ-26) Qty (1);CRYPTO Qty (1); OA-9277A Antenna Coupler Qty (2); and Command and Control Processor (C2P) AN/UYQ-120 Qty (2).		

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 17: Other Electronic Support						P-1 Line Item Number / Title: 3620 / Coast Guard Equipment				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Coast Guard Equipment	P-5a, P-21			- / 137.277	- / 36.584	- / 40.713	- / 61.370	- / -	- / 61.370
P-40	Total Gross/Weapon System Cost				- / 137.277	- / 36.584	- / 40.713	- / 61.370	- / 0.000	- / 61.370
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown. Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										
Justification: The FY 2020 funding increase is attributable to the addition of AEGIS Technical Representative support requirement to the Athena CCD program. Funds procure NT/NO combat systems, support equipment, Integrated Logistics Support (ILS), certification, test and production support for USCG National Security Cutter (WMSL Class), Fast Response Cutter (WPC Class) and Offshore patrol Cutter (WMSM Class) being constructed under the Coast Guard's Surface Asset Acquisition Program. These efforts are ongoing. Funds provide AN/SPQ-9B ILS support for WMSLs; procure IFF AN/APX-123(V) equipment, ILS and certification support for WPCs; procure IFF UPX-29A equipment, INCO spares, and ILS support for WMSMs and WSMLs; support IFF ILS and multi-year certifications for WMSL; procure MK53 MOD 10 DLS for WMSM 3 and WMSL 759; procure the EOSS for the OPC; provide combat system integration for WMSLs, WPCs, and WMSMs; procure the Multi-mode Radar for the WMSM; and provide WMSM combat system integration of the Technical Insertion (TI)-16 Common Display System and integration support for the ATHENA Control Correlation and Display (CCD) System. Funds procure navy specific equipment, C4I systems, and integrated logistic support for the USCG OPCs under an inter-service agreement. FY 2020 funds support AN/SRC-65 VHF/UHF Line of Sight Satellite Communication ARC-210 Radios; OE-570D Antenna; Navy Modular Automated Communications System (AN/SYQ-26); CRYPTO; OA-9277A Antenna Coupler and Command and Control Processor (C2P) AN/UYQ-120.										

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 17							P-1 Line Item Number / Title: 3620 / Coast Guard Equipment								Aggregated Items Title: Coast Guard Equipment					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
1) CG001 - SPQ-9B RADAR																				
1.1) SPQ-9B ILS/TEST SUPPORT ⁽¹⁾	A		-	-	6.260	-	-	0.444	-	-	0.380	-	-	-	-	-	-	-	-	-
1.2) SPQ-9B RADAR ^{(2)(†)}	A		-	-	-	3,941K	2	7.882	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) CG001 - SPQ-9B RADAR			-	-	6.260	-	-	8.326	-	-	0.380	-	-	-	-	-	-	-	-	-
2) IFF AIMS																				
2.1) OPC IFF INTEGRATION ⁽³⁾	A		-	-	-	-	-	-	-	-	-	-	-	1.833	-	-	-	-	-	1.833
2.2) IFF AIMS CERTIFICATION FRC	A		-	-	0.681	-	-	0.127	-	-	0.129	-	-	0.132	-	-	-	-	-	0.132
2.3) IFF AIMS ILS SUPPORT FRC	A		-	-	1.460	-	-	0.218	-	-	0.222	-	-	0.226	-	-	-	-	-	0.226
2.4) IFF AIMS EQUIPMENT FRC ^{(4)(†)}	A		113,812.50	32	3.642	95,725.00	3	0.287	106,000.00	3	0.318	81,000.00	3	0.243	-	-	-	81,000.00	3	0.243
2.5) IFF EQUIPMENT/ INCO SPARES OPC ^{(5)(†)}	A		-	-	0.110	215,000.00	1	0.215	509,000.00	1	0.509	681,000.00	1	0.681	-	-	-	681,000.00	1	0.681
2.6) IFF UPX-46 OPC ^{(6)(†)}	A		912,000.00	1	0.912	929,000.00	1	0.929	947,000.00	1	0.947	965,000.00	1	0.965	-	-	-	965,000.00	1	0.965
2.7) IFF ILS SUPPORT OPC	A		-	-	0.225	-	-	0.229	-	-	0.233	-	-	0.237	-	-	-	-	-	0.237
2.8) IFF AIMS TEST HARDWARE OPC	A		-	-	-	-	-	-	-	-	0.843	-	-	-	-	-	-	-	-	-
2.9) IFF AIMS NSC ^(†)	A		4,435K	2	8.870	477,000.00	1	0.477	-	-	-	-	-	-	-	-	-	-	-	-
2.10) IFF AIMS UPX-29 LLT NSC ^(†)	A		259,000.00	3	0.777	259,000.00	1	0.259	-	-	-	-	-	-	-	-	-	-	-	-
2.11) IFF AIMS MODIFICATION KITS	A		81,250.00	4	0.325	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.12) IFF AIMS SUPPORT EQUIPMENT NSC ^(†)	A		84,875.00	8	0.679	-	-	-	96,000.00	3	0.288	-	-	-	-	-	-	-	-	-
2.13) IFF AIMS PRODUCTION SUPPORT NSC	A		-	-	0.746	-	-	0.035	-	-	-	-	-	-	-	-	-	-	-	-
2.14) IFF AIMS ILS/TEST SUPPORT NSC	A		-	-	0.934	-	-	0.148	-	-	0.975	-	-	0.120	-	-	-	-	-	0.120
2.15) IFF AIMS CERTIFICATION NSC	A		-	-	0.459	-	-	0.065	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 17							P-1 Line Item Number / Title: 3620 / Coast Guard Equipment							Aggregated Items Title: Coast Guard Equipment						
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
Subtotal: 2) IFF AIMS			-	-	19.820	-	-	2.989	-	-	4.464	-	-	4.437	-	-	-	-	-	4.437
3) CG003 DECOYS MK 53																				
3.1) MK53 MOD 6/10 DLS OPC ^(†)	A		1,208K	1	1.208	1,012K	1	1.012	1,254K	1	1.254	1,278K	2	2.556	-	-	-	1,278K	2	2.556
3.2) MK53 MOD 6/10 DLS NSC ^(†)	A		-	-	-	1,012K	1	1.012	-	-	-	-	-	-	-	-	-	-	-	-
3.3) MK53 ILS/TEST SUPPORT ⁽⁷⁾	A		-	-	4.279	-	-	0.330	-	-	0.649	-	-	0.607	-	-	-	-	-	0.607
Subtotal: 3) CG003 DECOYS MK 53			-	-	5.487	-	-	2.354	-	-	1.903	-	-	3.163	-	-	-	-	-	3.163
4) CG004 SLQ-32																				
4.1) BEWT NSC	A		1,075K	1	1.075	-	-	0.022	-	-	0.022	-	-	-	-	-	-	-	-	-
4.2) SLQ-32 ELECTRONIC WARFARE SYSTEM	A		14,090K	2	28.180	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.3) SLQ-32 REFURBISHMENT	A		2,310K	3	6.931	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.4) SLQ-32 SUPPORT EQUIPMENT	A		159,000.00	1	0.159	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.5) SLQ-32 PRODUCTION SUPPORT NSC	A		-	-	2.579	-	-	0.213	-	-	-	-	-	-	-	-	-	-	-	-
4.6) SLQ-32 ILS/TEST SUPPORT	A		-	-	1.888	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.7) SLQ-32 CERTIFICATION	A		-	-	0.338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 4) CG004 SLQ-32			-	-	41.150	-	-	0.235	-	-	0.022	-	-	-	-	-	-	-	-	-
5) CG005 MK 46/MK 20 OPTICAL SIGHT																				
5.1) MK20 (EOSS) OPC ^(†)	A		1,690K	1	1.690	-	-	-	1,755K	2	3.510	1,788K	2	3.576	-	-	-	1,788K	2	3.576
5.2) ILS/TEST SUPPORT ⁽⁸⁾	A		-	-	0.225	-	-	-	-	-	0.466	-	-	0.714	-	-	-	-	-	0.714
5.3) MODIFICATION KITS NSC	A		-	-	0.297	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.4) MK 46/MK 20 NSC ^(†)	A		14,525K	1	14.525	1,722K	1	1.722	1,755K	1	1.755	1,788K	1	1.788	-	-	-	1,788K	1	1.788
5.5) DATA NSC	A		-	-	0.286	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.6) SOFTWARE NSC	A		-	-	2.402	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.7) PROGRAM SUPPORT NSC	A		-	-	1.632	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.8) ORDALT NSC	A		-	-	0.770	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 17							P-1 Line Item Number / Title: 3620 / Coast Guard Equipment								Aggregated Items Title: Coast Guard Equipment					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2018			FY 2019			FY 2020 Base			FY 2020 OCO			FY 2020 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
5.9) ILS/TEST SPT NSC ⁽⁹⁾	A		-	-	2.023	-	-	0.178	-	-	0.048	-	-	0.127	-	-	-	-	-	0.127
Subtotal: 5) CG005 MK 46/MK 20 OPTICAL SIGHT			-	-	23.850	-	-	1.900	-	-	5.779	-	-	6.205	-	-	-	-	-	6.205
6) CG006 COMBAT SYSTEM INTEGRATION																				
6.1) CSI ⁽¹⁰⁾	A		-	-	15.761	-	-	1.570	-	-	2.856	-	-	2.875	-	-	-	-	-	2.875
Subtotal: 6) CG006 COMBAT SYSTEM INTEGRATION			-	-	15.761	-	-	1.570	-	-	2.856	-	-	2.875	-	-	-	-	-	2.875
7) CG007 MULTI-MODE RADAR																				
7.1) MMR SYSTEM ^{(11)(†)}	A		8,569K	1	8.569	8,680K	1	8.680	8,845K	1	8.845	9,013K	3	27.039	-	-	-	9,013K	3	27.039
7.2) MMR INTEGRATION ⁽¹²⁾	A		-	-	8.568	-	-	2.720	-	-	-	-	-	0.488	-	-	-	-	-	0.488
7.3) MMR ILS/TEST SUPPORT ⁽¹³⁾	A		-	-	0.773	-	-	0.992	-	-	1.797	-	-	1.834	-	-	-	-	-	1.834
Subtotal: 7) CG007 MULTI-MODE RADAR			-	-	17.910	-	-	12.392	-	-	10.642	-	-	29.361	-	-	-	-	-	29.361
8) CG008 ATHENA CCD																				
8.1) ATHENA CCD INTEGRATION ⁽¹⁴⁾	A		-	-	7.039	-	-	0.526	-	-	2.563	-	-	3.226	-	-	-	-	-	3.226
8.2) ATHENA TI-16 CPS/CDS ⁽¹⁵⁾	A		-	-	-	-	-	-	-	-	1.480	-	-	1.816	-	-	-	-	-	1.816
Subtotal: 8) CG008 ATHENA CCD			-	-	7.039	-	-	0.526	-	-	4.043	-	-	5.042	-	-	-	-	-	5.042
9) OPC C4I ⁽¹⁶⁾																				
9.1) CRYPTO ^(†)	A		-	-	-	62,000.00	1	0.062	62,000.00	1	0.062	62,000.00	1	0.062	-	-	-	62,000.00	1	0.062
9.2) C2P ^(†)	A		-	-	-	1,215K	1	1.215	1,134K	2	2.268	1,104K	2	2.208	-	-	-	1,104K	2	2.208
9.3) ARC-210 ^{(17)(†)}	A		-	-	-	295,909.09	11	3.255	283,606.06	11	3.120	281,136.36	22	6.185	-	-	-	281,136.36	22	6.185
9.4) OE-570D ^(†)	A		-	-	-	443,000.00	1	0.443	413,000.00	2	0.826	477,500.00	2	0.955	-	-	-	477,500.00	2	0.955
9.5) OA-9277A ^(†)	A		-	-	-	293,000.00	1	0.293	277,000.00	3	0.831	282,000.00	2	0.564	-	-	-	282,000.00	2	0.564
9.6) NAVMACs ^(†)	A		-	-	-	333,500.00	2	0.667	333,000.00	1	0.333	313,000.00	1	0.313	-	-	-	313,000.00	1	0.313
9.7) FLEET BROADCAST ^(†)	A		-	-	-	357,000.00	1	0.357	398,000.00	8	3.184	-	-	-	-	-	-	-	-	-
Subtotal: 9) OPC C4I			-	-	0.000	-	-	6.292	-	-	10.624	-	-	10.287	-	-	-	-	-	10.287
Total			-	-	137.277	-	-	36.584	-	-	40.713	-	-	61.370	-	-	-	-	-	61.370
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
^(†) indicates the presence of a P-5a																				

Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.

(†) indicates the presence of a P-5a

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 17	P-1 Line Item Number / Title: 3620 / Coast Guard Equipment	Aggregated Items Title: Coast Guard Equipment
Footnotes: ⁽¹⁾ FY2019 funding for AN/SPQ-9B system engineering, radar performance evaluation, test and evaluation, planning and support for WMSL (NSC) Class. ⁽²⁾ Provides the AN/SPQ-9B radar for the Maritime Security Cutter, Large (WMSL) Class, aka the National Security Cutter, to track surface targets and low fliers in support of potential gun engagements. ⁽³⁾ IFF UPX-46 must be integrated with the WMSM (OPC) AEGIS B/L 9G. Budget reflects the portion of costs allocated by the Program Office for the combined contractor and government integration effort. ⁽⁴⁾ IFF Equipment suite for the WPC consists of MK XII equipment, Radar Control Transmitter (RCU), Radar Receiver-Transmitter shipping and installation fixtures which have various unit costs. The IFF AIMS Equipment unit price is an average unit cost for the various components being procured that year. ⁽⁵⁾ IFF Equipment suite for the OPC consists of the RT-1912C, C-12720, AS-177B, AN/APX-123 KIT, AN/UPX-41(C), AN/USM-719, KIV-78 and INCO spares with various unit costs. ⁽⁶⁾ IFF UPX-29A WMSM item name corrected to IFF UPX-46 WMSM ⁽⁷⁾ FY 2018 funding reduced as part of an internal realignment to fund an additional SQP-9B Radar to meet the In Yard Need Date (IYND) for the NSC 10. NSC 10 was added by Congress in the 2018 Budget, however, additional funding was not appropriated to support all associated equipment and weapons procurements. ⁽⁸⁾ Funding increase in FY2020 is due to addition of 1.1 FTEs to support planned Integration and Testing for the WMSM (OPC) Class at NSWC Port Hueneme. This additional ILS/TEST Support is required to keep pace with the increase in procurement quantities. ⁽⁹⁾ Funding increase in FY2020 due to addition of 0.5 FTE to address WMSL equipment integration and testing requirements for the new optical sight. ⁽¹⁰⁾ FY2020 Combat System Integration budget is attributable to existing program efforts plus the requirement for additional Combat Systems Engineering and Integration Support. FY2021 additionally includes WMEC 270' modification efforts, which is the primary driver of funding requirements, as well as the initiation of the program's Combat System Integration Lifecycle Engineering effort. ⁽¹¹⁾ FY2020 is the start of two (2) MMR procurements per year for the OPC program. One (1) additional MMR is required as a training asset in FY2020. Additional MMR procurements for the PSC program begin in FY2022. ⁽¹²⁾ The Multi-Mode Radar (MMR) integration efforts include the software upgrade to correlate radar video tracks and IFF information and the detail design of the IFF antenna onto the MMR antenna hardware integration to include drawing updates and technical publications. ⁽¹³⁾ FY 2020 MMR ILS/TEST SUPPORT costs are attributable to the installation costs of the Multi-Mode Radar (MMR) in FY 2020. Each MMR delivery has an associated installation cost separate from the baseline ILS/TEST SUPPORT that supports the MMR Program, beginning in the first year of delivery (FY 2019). ⁽¹⁴⁾ The Combat System Control and Display OPC integration supports hardware and software integration of the Technical Insertion (TI)-16 Common Display System for the Multi-Mode Radar, IFF and to provide data to the MK48 Gun Weapon System for target engagement. Includes safety, certification, technical documentation, and information assurance efforts. FY 2020 through FY 2023 increase attributable to the required addition of AEGIS Technical Representative support, Combat System Engineering and Integration support, and continued Combat System Integration efforts by the contractor to maintain and update the Athena (AEGIS Baseline 9G) CCD program. FY 2021 increase is also attributable, in part, to new Athena integration efforts required up front for the Polar Security Cutter (PSC) program. ⁽¹⁵⁾ FY 2021 increase attributable to one (1) additional TI-16 CPS/CDSs system for the first Polar Security Cutter (PSC) hull. This is in addition to the annual purchase of the TI-16 CPS/CDS system for the Offshore Patrol Cutter (OPC). ⁽¹⁶⁾ No associated equipment installation costs across the FYDP USCG will install the C4I systems. Procurements provide assets for OPC Hulls #1 through Hull #9 across the FYDP. ⁽¹⁷⁾ Quantity increased from FY19 to FY20 based on the latest USCG Offshore Patrol Cutter (OPC) Project Timeline. OPC 4&5 systems are on the schedule to be procured in FY20. Each ARC-210 system requires 11 radios.		

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 17			P-1 Line Item Number / Title: 3620 / Coast Guard Equipment						Aggregated Items: Coast Guard Equipment			
Item Number / Title [DODIC]	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1) CG001 - SPQ-9B RADAR												
1.2) SPQ-9B RADAR ^{(2)(t)}		2018 ⁽¹⁸⁾	DLS Laurel / Johnstown, PA	C / FFP	NAVSEA	Jul 2018	Jan 2020	2	3,941K	Y		Sep 2017
2) IFF AIMS												
2.4) IFF AIMS EQUIPMENT FRC ⁽⁴⁾		2018	NAVAIR NAWC/AD / ST. INIGOES, MD	WR	NAVAIR	Jan 2018	Jul 2019	3	95,725.00	Y		Dec 2015
2.4) IFF AIMS EQUIPMENT FRC ⁽⁴⁾		2019	NAVAIR NAWC/AD / ST. INIGOES, MD	WR	NAVAIR	Jan 2019	Jul 2020	3	106,000.00	Y		Dec 2015
2.5) IFF EQUIPMENT/INCO SPARES OPC ⁽⁵⁾		2018	NAVAIR NAWC/AD / ST. INIGOES, MD	WR	NAVAIR	Jan 2018	Jul 2019	1	215,000.00	Y		Dec 2015
2.5) IFF EQUIPMENT/INCO SPARES OPC ⁽⁵⁾		2019	NAVAIR NAWC/AD / ST. INIGOES, MD	WR	NAVAIR	Jan 2019	Jul 2020	1	509,000.00	Y		Dec 2015
2.5) IFF EQUIPMENT/INCO SPARES OPC ⁽⁵⁾		2020	NAVAIR NAWC/AD / ST. INIGOES, MD	C / TBD	** NO PCO **	Oct 2019	Apr 2021	1	681,000.00	N		
2.6) IFF UPX-46 OPC ⁽⁶⁾		2018	NAVAIR NAWC/AD / ST. INIGOES, MD	WR	NAVAIR	Jan 2018	Jul 2019	1	929,000.00	Y		Dec 2015
2.6) IFF UPX-46 OPC ⁽⁶⁾		2019	NAVAIR NAWC/AD / ST. INIGOES, MD	WR	NAVAIR	Jan 2019	Jul 2020	1	947,000.00	Y		Dec 2015
2.9) IFF AIMS NSC		2018	NAVAIR NAWC/AD / ST. INIGOES, MD	WR	NAVAIR	Jan 2018	Jul 2019	1	477,000.00	Y		Dec 2016
2.10) IFF AIMS UPX-29 LLT NSC		2018	NAVAIR NAWC/AD / ST. INIGOES, MD	WR	NAVAIR	Jan 2018	Jul 2019	1	259,000.00	Y		Dec 2016
2.12) IFF AIMS SUPPORT EQUIPMENT NSC		2019	NAVAIR NAWC/AD / ST. INIGOES, MD	WR	NAWCAD	Oct 2018	Oct 2019	3	96,000.00	Y		Dec 2015
3) CG003 DECOYS MK 53												
3.1) MK53 MOD 6/10 DLS OPC		2018	BAES / AUSTRALIA	C / FP	NAVSEA	Mar 2018	Jul 2019	1	1,012K	Y		Jul 2017
3.1) MK53 MOD 6/10 DLS OPC		2019	BAES / AUSTRALIA	C / TBD	NAVSEA	Mar 2019	Jul 2020	1	1,254K	Y		Jul 2017
3.2) MK53 MOD 6/10 DLS NSC		2018	BAES / AUSTRALIA	C / FP	NAVSEA	Mar 2018	Mar 2018	1	1,012K	Y		Sep 2016
5) CG005 MK 46/MK 20 OPTICAL SIGHT												
5.1) MK20 (EOSS) OPC		2017	L3 KEO / NORTHAMPTON, MA	SS / FP	NAVSEA	Aug 2017	Feb 2019	1	1,690K	Y		Jan 2016
5.1) MK20 (EOSS) OPC		2019	L3 KEO / NORTHAMPTON, MA	SS / FP	NAVSEA	Apr 2019	Oct 2020	2	1,755K	Y		Jan 2016
5.1) MK20 (EOSS) OPC		2020	L3 KEO / NORTHAMPTON, MA	SS / FP	NAVSEA	Feb 2020	Aug 2021	2	1,788K	Y		Jan 2019
5.4) MK 46/MK 20 NSC		2018	L3 KEO / NORTHAMPTON, MA	SS / FP	NAVSEA	Apr 2018	Apr 2020	1	1,722K	Y		Sep 2016
7) CG007 MULTI-MODE RADAR												
7.1) MMR SYSTEM ⁽¹¹⁾		2018 ⁽¹⁹⁾	SAAB USA / Syracuse, NY, USA	C / FFP	NAVSEA	Feb 2018	Jun 2019	1	8,680K	Y		Oct 2016
7.1) MMR SYSTEM ⁽¹¹⁾		2019 ⁽²⁰⁾	SAAB USA / Syracuse, NY, USA	C / FFP	NAVSEA	Mar 2019	Jun 2020	1	8,845K	Y		Oct 2016

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 17			P-1 Line Item Number / Title: 3620 / Coast Guard Equipment					Aggregated Items: Coast Guard Equipment				
Item Number / Title [DODIC]	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
7.1) MMR SYSTEM ⁽¹¹⁾		2020	SAAB USA / Syracuse, NY, USA	C / TBD	** NO PCO **	Oct 2019	Feb 2021	3	9,013K	N		
9) OPC C4I												
9.1) CRYPTO		2018	SSC LANT / Charleston, SC	C / FFP	SSC LANT	Apr 2018	Apr 2019	1	62,000.00	Y		
9.1) CRYPTO		2019	SSC LANT / Charleston, SC	C / FFP	SSC LANT	Jan 2019	Jan 2020	1	62,000.00	Y		
9.1) CRYPTO		2020	SSC LANT / Charleston, SC	C / FFP	SSC LANT	Jan 2020	Jan 2021	1	62,000.00	Y		
9.2) C2P		2018	NEIF (Lockheed) / San Diego	C / CPFF	SPAWAR	Jul 2018	Jan 2020	1	1,215K	Y		
9.2) C2P		2019	NEIF (Lockheed) / San Diego	C / CPFF	SPAWAR	Jun 2019	Dec 2020	2	1,134K	Y		
9.2) C2P		2020	CALI Contract (DTS System) / General Dynamics	C / TBD	SPAWAR	Jun 2020	Dec 2021	2	1,104K	Y		
9.3) ARC-210 ⁽¹⁷⁾		2018	Rockwell Collins / Cedar Rapids, IA	C / FFP	NAWCAD	Jan 2018	Jul 2019	11	295,909.09	Y		
9.3) ARC-210 ⁽¹⁷⁾		2019	Rockwell Collins / Cedar Rapids, IA	C / FFP	NAWCAD	Jan 2019	Jul 2020	11	283,606.06	Y		
9.3) ARC-210 ⁽¹⁷⁾		2020	Rockwell Collins / Cedar Rapids, IA	C / TBD	** NO PCO **	Jan 2020	Jul 2021	22	281,136.36	Y		
9.4) OE-570D		2018	Trivec Avant / Huntington Beach, CA	C / FFP	SPAWAR	Jul 2018	Jan 2019	1	443,000.00	Y		
9.4) OE-570D		2019	Trivec Avant / Huntington Beach, CA	C / FFP	SPAWAR	Jun 2019	Dec 2019	2	413,000.00	Y		
9.4) OE-570D		2020	Trivec Avant / Huntington Beach, CA	C / TBD	SPAWAR	Feb 2020	Aug 2020	2	477,500.00	Y		
9.5) OA-9277A		2018	Rockwell Collins/Cedar Rapids / NAWCAD	C / FFP	SSC LANT	Jan 2018	Jul 2019	1	293,000.00	Y		
9.5) OA-9277A		2019	SSC LANT/Various / Charleston, SC	C / FFP	SSC LANT	Jan 2019	Jul 2020	3	277,000.00	Y		
9.5) OA-9277A		2020	Rockwell Collins/Cedar Rapids / NAWCAD	C / TBD	SSC LANT	Jan 2020	Jul 2021	2	282,000.00	Y		
9.6) NAVMACs		2018	General Dynamics / Falls Church, VA	C / FFP	SPAWAR	Jan 2018	Aug 2018	2	333,500.00	Y		
9.6) NAVMACs		2019	General Dynamics / Falls Church, VA	C / FFP	SPAWAR	Jan 2019	Aug 2019	1	333,000.00	Y		
9.6) NAVMACs		2020	TBD / TBD	TBD	SPAWAR	Jan 2020	Aug 2020	1	313,000.00	N	Dec 2018	
9.7) FLEET BROADCAST		2018	SSC PAC @San Diego / San Diego	C / FFP	SSC PAC	Jul 2018	Jan 2019	1	357,000.00	Y		
9.7) FLEET BROADCAST		2019	SSC PAC @San Diego / San Diego	C / FFP	SSC PAC	Jul 2019	Jan 2020	8	398,000.00	Y		
(t) indicates the presence of a P-21												
Footnotes: ⁽¹⁸⁾ Contract awarded late July 2018 by PEO IWS 2R. SPQ-9B ordered for WMSL (NSC) 758-759 (NSC Hulls 9 and 10). ⁽¹⁹⁾ MFG List Procurement Lead Time for this order is 16 months from end of 2017-09, with scheduled delivery in 2019-06. ⁽²⁰⁾ MFG List's Procurement Lead Time for this order is approximately 15 months, with scheduled delivery of 2020-06.												

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Exhibit P-21, Production Schedule: PB 2020 Navy																				Date: March 2019												
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 17										P-1 Line Item Number / Title: 3620 / Coast Guard Equipment										Aggregated Items: Coast Guard Equipment												
Items <i>(Units in Each)</i>							Fiscal Year 2017										Fiscal Year 2018										BALANCE					
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	Calendar Year 2017										Calendar Year 2018															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y		J U N	J U L	A U G	S E P	
1) CG001 - SPQ-9B RADAR																																
1.2) SPQ-9B RADAR ⁽²⁾																																
	9	2018	NAVY		2	0	2																		A -	-	-	2				
								O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	

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Exhibit P-21, Production Schedule: PB 2020 Navy																							Date: March 2019											
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 17										P-1 Line Item Number / Title: 3620 / Coast Guard Equipment													Aggregated Items: Coast Guard Equipment											
Items <i>(Units in Each)</i>							Fiscal Year 2019													Fiscal Year 2020													BALANCE	
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	Calendar Year 2019													Calendar Year 2020														
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP				
1) CG001 - SPQ-9B RADAR																																		
1.2) SPQ-9B RADAR ⁽²⁾																																		
	9	2018	NAVY		2	0	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1												1
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP				

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Exhibit P-21, Production Schedule: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 17					P-1 Line Item Number / Title: 3620 / Coast Guard Equipment				Aggregated Items: Coast Guard Equipment			
MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
		MSR For 2020	1-8-5 For 2020	MAX For 2020	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	DLS Laurel - Johnstown, PA			7	0	0	18	18	0	0	18	18

"A" in the Delivery Schedule indicates the Contract Award Date.

Note: Due to space limitations, quantities in the Exhibit P-21 delivery calendar are truncated and rounded based on the maximum quantity in the calendar as follows. If the maximum quantity is less than or equal to than 9,999, all quantities are shown as each. If the maximum quantity is between 10,000 and 999,999 all quantities are shown in thousands. If the maximum quantity is between 1,000,000 and 999,999,999 all quantities are shown in millions (rounded to the nearest thousand).If the maximum quantity is equal or greater than 1,000,000,000 all quantities are shown in billions (rounded to the nearest million).

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 6: Submarine Surveillance Equipment							P-1 Line Item Number / Title: 2562 / Shallow Water Multi-Sensor Surveillance					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: 0204311N				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	11.000	11.220	-	22.220
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	11.000	11.220	-	22.220
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	11.000	11.220	-	22.220
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost <i>(\$ in Dollars)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Description: The Deployable Family of Systems (DFoS) project complements Fixed Surveillance System (FSS) and Surveillance Towed Array Sensor System (SURTASS), providing flexible and responsive wide area surveillance to the Theater Anti-Submarine Warfare (TASW) commanders worldwide. DFoS will operate as adjunct systems to meet the established FSS and SURTASS missions and to meet additional missions as articulated in the DFoS Analysis of Alternatives (AoA)/Capability Description Document (CDD) and as dictated by TASW commanders' evolving and emergent operational requirements. DFoS is comprised of the following systems: Deep Water Passive (DWP), Deep Water Active (DWA), and Mobile Passive System (MPS).												

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Exhibit P-40, Budget Line Item Justification: PB 2020 Navy							Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 6: Submarine Surveillance Equipment					P-1 Line Item Number / Title: 2562 / Shallow Water Multi-Sensor Surveillance					
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: 0204311N				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	2 / Deep Water Passive (DWP) (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-40	Total Gross/Weapon System Cost				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
Exhibits Schedule					FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	2 / Deep Water Passive (DWP) (TBD)				- / 0.000	- / 0.000	- / 11.000	- / 11.220	- / 0.000	- / 22.220
P-40	Total Gross/Weapon System Cost				- / 0.000	- / 0.000	- / 11.000	- / 11.220	- / -	- / 22.220
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										

Justification:

OPN funding begins in FY23 to procure Deep Water Passive (DWP) systems in support of the Deployable Family of Systems (DFoS) project.

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 6	P-1 Line Item Number / Title: 2562 / Shallow Water Multi-Sensor Surveillance	Modification Number / Title: 2 / Deep Water Passive (DWP)

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	11.000	11.220	0.000	22.220
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	11.000	11.220	0.000	22.220
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	11.000	11.220	0.000	22.220
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Deep Water Passive (DWP) system provides a passive deployable system capability in support of worldwide Theater Anti-Submarine Warfare (TASW) commander's wide area surveillance requirements.

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 6				P-1 Line Item Number / Title: 2562 / Shallow Water Multi-Sensor Surveillance						Modification Number / Title: 2 / Deep Water Passive (DWP)			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: [No Model Specified]				Modification Type: TBD				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total	
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	
Procurement													
<i>Modification Item 1 of 1:</i> Deep Water Passive (DWP)													
B Kits													
Recurring													
1.1.1) Deep Water Passive (DWP) - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 10.000	10 / 10.220	- / -	20 / 20.220
<i>Subtotal: Recurring</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 10.000	- / 10.220	- / 0.000	- / 20.220
<i>Subtotal: Deep Water Passive (DWP)</i>	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 10.000	10 / 10.220	- / -	20 / 20.220
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 10.000	- / 10.220	- / 0.000	- / 20.220
Installation													
<i>Modification Item 1 of 1:</i> Deep Water Passive (DWP)	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 1.000	- / 1.000	- / 0.000	- / 2.000
<i>Subtotal: Installation</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.000	- / 1.000	- / 0.000	- / 2.000
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	11.000	11.220	0.000	22.220

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 6										P-1 Line Item Number / Title: 2562 / Shallow Water Multi-Sensor Surveillance										Modification Number / Title: 2 / Deep Water Passive (DWP)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: Deep Water Passive (DWP)																															
Manufacturer Information																															
Manufacturer Name: Future Competitive Contract															Manufacturer Location: TBD																
Administrative Leadtime <i>(in Months)</i> : 6															Production Leadtime <i>(in Months)</i> : 10																
Dates		FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024					
Contract Dates																						Jan 2023				Jan 2024					
Delivery Dates																						Oct 2023				Oct 2024					
Installation Information																															
Method of Implementation: AIT (Alteration Installation Team):: Installation Name: Deep Water Passive (DWP)																															
Installation Cost		Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total		FY 2021		FY 2022		FY 2023		FY 2024		To Complete		Total								
		<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>								
Prior Years		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2018		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2019		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2020		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2021		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2022		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2023		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 1.000		10 / 0.000		0 / 0.000		10 / 1.000						
FY 2024		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 1.000		10 / 0.000		10 / 1.000						
To Complete		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
Total		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 1.000		10 / 1.000		10 / 0.000		20 / 2.000						
Installation Schedule																															
	PYS	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	5	-	-	10	20
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	5	-	-	10	20

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