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

March 2019



Navy

Justification Book Volume 4 of 5

Other Procurement, Navy

BA 04

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The estimated cost of this report for the Department of the Navy (DON) is \$10,789.

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
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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
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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
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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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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
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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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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
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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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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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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
----	-----	-----	-----	-----	-----	-----	-
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
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	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
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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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(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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	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
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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
----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-
	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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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 -
	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
(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
----	-----	-----	-----	-----	-----	-----	-
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
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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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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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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
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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
----	-----	-----	-----	-----	-----
	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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4	01	09	0840	Sub Periscope, Imaging and Supt Equip Prog.....	Volume 1 - 125
5	01	09	0900	DDG Mod.....	Volume 1 - 181
6	01	09	0910	Firefighting Equipment.....	Volume 1 - 261
7	01	09	0925	Command and Control Switchboard.....	Volume 1 - 281
8	01	09	0933	LHA/LHD Midlife.....	Volume 1 - 289
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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18	01	09	0960	CG Modernization.....	Volume 1 - 489
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
34	01	15	1611	Small & Medium UUV.....	Volume 1 - 753

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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
45	02	05	2360	Shipboard IW Exploit.....	Volume 2 - 193
46	02	05	2361	Automatic Identification System (AIS).....	Volume 2 - 217
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48	02	07	2611	Naval Tact Cmd Supt Sys (NTCSS).....	Volume 2 - 251
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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
52	02	07	2624	Shallow Water MCM.....	Volume 2 - 293
53	02	07	2657	NAVSTAR GPS Receivers (Space).....	Volume 2 - 303
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
60	02	09	2876	Naval Mission Planning Systems.....	Volume 2 - 465
61	02	10	2906	Tactical/Mobile C4I Systems.....	Volume 2 - 471
62	02	10	2914	Distributed Common Ground System-Navy (DCGS-N).....	Volume 2 - 489
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68	02	10	2960	Integ Combat System Test Facility.....	Volume 2 - 561
69	02	10	2970	EMI Control Instrumentation.....	Volume 2 - 565
70	02	10	2980	Items less than \$5 Million.....	Volume 2 - 569
71	02	11	3010	Shipboard Tactical Comms.....	Volume 2 - 599
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
83	02	17	3620	Coast Guard Equipment.....	Volume 2 - 745
999	02	06	2562	Shallow Water Multi-Sensor Surveillance.....	Volume 2 - 757

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87	03	03	4204	Weapons Range Support Equipment.....	Volume 3 - 17
88	03	03	4213	Aircraft Support Equipment.....	Volume 3 - 27
89	03	03	4217	Advanced Arresting Gear (AAG).....	Volume 3 - 77
90	03	03	4226	Meteorological Equipment.....	Volume 3 - 89
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
94	03	03	4268	Aviation Support Equipment.....	Volume 3 - 119
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98	04	03	5231	Ship Missile Support Equipment.....	Volume 4 - 9
99	04	03	5253	Tomahawk Support Equipment.....	Volume 4 - 53
100	04	04	5358	Strategic Missile Systems Equip.....	Volume 4 - 59
101	04	05	5420	SSN Combat Control Systems.....	Volume 4 - 89
102	04	05	5429	ASW Support Equipment.....	Volume 4 - 121
103	04	06	5509	Explosive Ordnance Disposal Equip.....	Volume 4 - 133
104	04	06	5543	Items Less Than \$5 Million.....	Volume 4 - 145
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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112	05	01	6028	Tactical Vehicles.....	Volume 5 - 57
113	05	01	6033	Amphibious Equipment.....	Volume 5 - 63
114	05	01	6058	Pollution Control Equipment.....	Volume 5 - 71
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121	07	01	8101	Training and Education Equipment.....	Volume 5 - 139
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
129	07	02	8128	Physical Security Equipment.....	Volume 5 - 247
130	07	02	8161	Enterprise Information Technology.....	Volume 5 - 257
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AN/SQQ-89 Surf ASW Cmbt Sys	2136	37	02	02.....	Volume 2 - 11
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
Aviation Support Equipment	4268	94	03	03.....	Volume 3 - 119
C4ISR Equipment	8120	127	07	02.....	Volume 5 - 221
CANES	2915	63	02	10.....	Volume 2 - 511
CANES Intell	2925	65	02	10.....	Volume 2 - 539
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Command Support Equipment	8106	122	07	02.....	Volume 5 - 169
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
Explosive Ordnance Disposal Equip	5509	103	04	06.....	Volume 4 - 133
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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
LCS In-Service Modernization	1604	33	01	15.....	Volume 1 - 739

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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
Network Tactical Common Data Link (CDL)	2950	67	02	10.....	Volume 2 - 555
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Physical Security Equipment	8128	129	07	02.....	Volume 5 - 247
Physical Security Vehicles	6075	116	05	01.....	Volume 5 - 97
Pollution Control Equipment	0935	9	01	09.....	Volume 1 - 353
Pollution Control Equipment	6058	114	05	01.....	Volume 5 - 71
RADIAC	2920	64	02	10.....	Volume 2 - 525
Reactor Components	1020	25	01	10.....	Volume 1 - 637
Reactor Power Units	1010	24	01	10.....	Volume 1 - 633
SPQ-9B Radar	2026	36	02	02.....	Volume 2 - 1
SSN Acoustic Equipment	2150	38	02	02.....	Volume 2 - 43
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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Small & Medium UUV	1611	34	01	15.....	Volume 1 - 753
Sonobuoys - All Types	4048	85	03	01.....	Volume 3 - 1
Spares and Repair Parts	9020	134	08	01.....	Volume 5 - 279
Special Purpose Supply Systems	7069	119	06	01.....	Volume 5 - 115
Standard Boats	1210	27	01	12.....	Volume 1 - 659
Strategic Missile Systems Equip	5358	100	04	04.....	Volume 4 - 59
Strategic Platform Support Equip	0950	16	01	09.....	Volume 1 - 477
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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Surface Training Equipment	5664	107	04	07.....	Volume 4 - 177
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
Virginia Class Support Equipment	0942	11	01	09.....	Volume 1 - 383
Weapons Range Support Equipment	4204	87	03	03.....	Volume 3 - 17

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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 04: Ordnance Support Equipment / BSA 2: Ship Gun System Equipment	P-1 Line Item Number / Title: 5111 / Ship Gun Systems Equipment
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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: 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>)	17.058	5.277	5.337	5.451	0.000	5.451	5.571	5.681	5.794	5.909	5.059	61.137
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	17.058	5.277	5.337	5.451	0.000	5.451	5.571	5.681	5.794	5.909	5.059	61.137
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	17.058	5.277	5.337	5.451	0.000	5.451	5.571	5.681	5.794	5.909	5.059	61.137
<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:

Ship gun system equipment provides funds for the procurement of equipment, material and Ordnance Alterations to improve combat effectiveness and logistic supportability for gun and mission planning systems, and ancillary support equipment.

P40A - 1/ The Naval Fires Control System is an automated mission planning and coordination system for the Naval Surface Fire Support (NSFS) System. It automates shipboard land attack battle management duties to be interoperable and consistent with joint C4ISR systems. The system significantly improves the Navy's ability to support forces ashore. These improvements provide enhanced capabilities and reduce total ownership costs by improving reliability and supportability of in-service systems. This system also reduces manning requirements for NSFS missions.

[P40A - 2 / NV039 Night Vision Devices]: Procures new Night Vision Devices (NVD) for ships and shore sites. Provides replacement of NVD and NVD Test Equipment.

[P40A - 2 / NV051 Optical Sight Systems Production Improvement]: Procures various Product Improvements for MK46 OSS/MK20 Electro-Optical Sight System (EOSS) on DDG 51 and CG 47 Class ships. The OSS is an integral element of the MK 34 Gun Weapon System. These improvements provide enhanced force protection capabilities, improve availability to address increase in Fleet underway operations, and reduce total ownership costs by improved reliability and supportability of in-service equipment systems. System and component improvements include: Mod 0 Technical Refresh, upgrade of Daylight Imaging Sensor Field of View, system power supplies, Mod 0 console / monitor upgrade, system obsolescence replacement and component level product improvements.

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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 04: Ordnance Support Equipment / BSA 2: Ship Gun System Equipment						P-1 Line Item Number / Title: 5111 / Ship Gun Systems 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	Naval Fires Control Sys				- / 2.134	- / 0.383	- / 0.387	- / 0.395	- / -	- / 0.395
P-40a	Gun Fire Control Equipment				- / 14.924	- / 4.894	- / 4.950	- / 5.056	- / -	- / 5.056
P-40	Total Gross/Weapon System Cost				- / 17.058	- / 5.277	- / 5.337	- / 5.451	- / 0.000	- / 5.451
*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: Note: Before FY15, the programs were previously reported under budget line items (5209 and 5112).										

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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 / 04 / 2						P-1 Line Item Number / Title: 5111 / Ship Gun Systems Equipment									Aggregated Items Title: Naval Fires Control Sys					
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)
2) INSTALLATION																				
2.1) FC0002 Installation of NFCS Equipment	A		245,000.00	1	0.245	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.2) FC010 Product Improvement/ORDALT	A		-	-	0.966	-	-	0.180	-	-	0.182	-	-	0.185	-	-	-	-	-	0.185
2.3) FC011 Installation of ORDALT	A		-	-	0.377	-	-	0.092	-	-	0.093	-	-	0.095	-	-	-	-	-	0.095
2.4) FC830 Production Engineering Support (NFCS)	A		-	-	0.546	-	-	0.111	-	-	0.112	-	-	0.115	-	-	-	-	-	0.115
Subtotal: 2) INSTALLATION			-	-	2.134	-	-	0.383	-	-	0.387	-	-	0.395	-	-	-	-	-	0.395
Total			-	-	2.134	-	-	0.383	-	-	0.387	-	-	0.395	-	-	-	-	-	0.395

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-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 2						P-1 Line Item Number / Title: 5111 / Ship Gun Systems Equipment									Aggregated Items Title: Gun Fire Control 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 (\$)	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) Equipment																				
1.1) NV039 Night Vision Devices	A		-	-	6.775	-	-	2.287	-	-	2.316	-	-	2.363	-	-	-	-	-	2.363
1.2) NV051 Optical Sight Systems Production Improvement	A		-	-	8.149	-	-	2.607	-	-	2.634	-	-	2.693	-	-	-	-	-	2.693
Subtotal: 1) Equipment			-	-	14.924	-	-	4.894	-	-	4.950	-	-	5.056	-	-	-	-	-	5.056
Total			-	-	14.924	-	-	4.894	-	-	4.950	-	-	5.056	-	-	-	-	-	5.056

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

Footnotes:

⁽¹⁾ This program provides for the procurement of equipment, materials and Ordnance Alterations to improve combat effectiveness and maintain logistic supportability of Gun Fire Control Equipment, Optical Sight Systems (OSS) and Night Vision devices.

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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 04: Ordnance Support Equipment / BSA 3: Ship Missile Systems Equipment							P-1 Line Item Number / Title: 5227 / HARPOON Support 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>)	0.000	0.000	0.000	1.100	0.000	1.100	0.100	0.100	0.100	0.100	-	1.500
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	0.000	0.000	1.100	0.000	1.100	0.100	0.100	0.100	0.100	-	1.500
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	0.000	0.000	1.100	0.000	1.100	0.100	0.100	0.100	0.100	-	1.500
<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 provides submarine engagement planning simulator capability to train submarine crews. The Encapsulated (ENCAP) Harpoon Block IC (HIC) missiles provides Navy Los Angeles-class nuclear attack submarines (SSN) a sub-launched, all-weather, long-range Anti-Surface Warfare (ASuW) missile to attack enemy warships at stand-off ranges, to include Surface and Amphibious Action Groups. The ENCAP Reconstitution Program will refurbish and recertify 60 existing ENCAP HIC all-up rounds from deep storage to an "as-new" war-ready material condition (ENCAP Harpoons were placed in deep storage in 1996). The controlled storage conditions achieved by the missile capsule have preserved the material condition of the weapon system, allowing for relatively quick recertification and reissue. Due to the ease and speed of missile recertifications the ENCAP HIC Reconstitution Program will fill a critical, time sensitive ASuW capability gap and meet Speed to the Fleet requirements. Provide submarine engagement planning simulator capability to train submarine crews.												

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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 04: Ordnance Support Equipment / BSA 3: Ship Missile Systems Equipment					P-1 Line Item Number / Title: 5227 / HARPOON Support 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	HARPOON Support - Support Costs				- / 0.000	- / -	- / -	- / 1.100	- / -	- / 1.100
P-40	Total Gross/Weapon System Cost				- / 0.000	- / 0.000	- / 0.000	- / 1.100	- / 0.000	- / 1.100
*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 funding is provided for integrated logistics support, updates to training materials and technical manuals, test procedure development, updates to technical documentation and drawings, launcher firmware updates and integration, and cybersecurity 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 / 04 / 3							P-1 Line Item Number / Title: 5227 / HARPOON Support Equipment							Aggregated Items Title: HARPOON Support - Support Costs ⁽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 (\$)	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) HARPOON Support Equipment																				
1) ILS		A	-	-	-	-	-	-	-	-	-	-	-	1.100	-	-	-	-	-	1.100
Subtotal: 1) HARPOON Support Equipment			-	-	0.000	-	-	-	-	-	-	-	-	1.100	-	-	-	-	-	1.100
Total			-	-	0.000	-	-	-	-	-	-	-	-	1.100	-	-	-	-	-	1.100
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
Footnotes: ⁽¹⁾ FY 2020 funding is provided for integrated logistics support, updates to training materials and technical manuals, test procedure development, updates to technical documentation and drawings, launcher firmware updates and integration, and cybersecurity 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 04: Ordnance Support Equipment / BSA 3: Ship Missile Systems Equipment							P-1 Line Item Number / Title: 5231 / Ship Missile Support 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>)	712.011	230.170	200.118	228.104	0.000	228.104	243.792	241.091	243.267	233.658	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	712.011	230.170	200.118	228.104	0.000	228.104	243.792	241.091	243.267	233.658	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	712.011	230.170	200.118	228.104	0.000	228.104	243.792	241.091	243.267	233.658	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>)	-	4.299	4.447	3.766	-	3.766	3.152	3.066	4.264	4.490	Continuing	Continuing
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Ship Missile Support Equipment provides procurement and installation support to address fleet requirements for AEGIS Weapons System, Ships Self Defense System (SSDS), Vertical Launch Systems (VLS), NATO Seasparrow, Rolling Airframe Missile(RAM) Guided Missile Launcher System (GMLS), Anti-Ship Missile Decoy System NULKA, and Over The Horizon Weapon System (OTH WS).

FY 2018 Total Obligation Authority of \$266.770M was reduced by \$36.600M to \$230.170M for a Congressional Rescission, which reduced the following programs funding: NATO Seasparrow (-\$14.200M) and Anti-ship Missile Decoy System NULKA (-\$22.400M).

[P40A / NATO SEASPARROW]: [P40A / NATO SEASPARROW]: The NATO SEASPARROW Surface Missile System (NSSMS) is a shipboard Self-Defense Missile System. In addition to the standard mission of Anti-Air and Anti-Surface Defense (AAW, ASUW), NSSMS is designed to protect ship and crew from a variety of inbound threats, including Anti-Ship Cruise Missiles (ASCM), Fast Attack Craft/Fast Inshore Attack Craft (FAC/FIAC), Low Velocity Air Threats (LVAT), and a wide range of asymmetrical threats (e.g. Unmanned Aerial and Surface vehicles, small Rigid Hull Inflatable Boats, etc.).

The legacy NSSMS configuration consists of Fire Control and Launcher Systems comprised of 2-4 Directors, a distributed computing network, Transmitter Group, 3-5 Operating Consoles, and 1-2 Eight-Cell missile Launchers (Mk 29) which employ the surface launch variant of the Sparrow and ESSM. NSSMS MK 57 Mods 12 and higher are ESSM capable and are integrated with SSDS. In the Mod 12 and higher configuration, the MK 57 NSSMS becomes part of the SSDS MK 2 Combat System. This fully integrated configuration of the NSSMS is internally dubbed "Objective Configuration". At present, activities are focused on upgrading legacy systems (NSSMS Mk 57 Mod 2) to the Mod 12-15. Efforts are also underway to develop and field MK 29 launcher modifications that enable the firing of ESSM BLK 2 from NSSMS platforms. The BLK 2 associated changes include modifications to mechanical interfaces to enable safe loading, stowage and firing of up to eight ESSM BLK 2 missiles.

Funding provides for (1) equipment modernization to address obsolescence, (2) NATO SEASPARROW Objective Configuration (OC) program consisting of segmenting and automating NSSMS MK 57 and interfacing directly to the SSDS Combat System (Currently planned for the LHD 1 - LHD 6), (3) Launcher Min-Mod program which delivers necessary hardware modifications to the Mk29 launcher to enable firing of ESSM BLK 2 (Currently planned on the LHD 2-6 and CVN Class ships), and (4) Continued support for Stalker Long Range Electro-Optic Sensor System.

MK 29 modernization efforts address a variety of issues with the legacy MK 132 above deck launcher equipment, including achieving the desired Grade A shock qualification, solving missile loading/loader beam safety issues, missile environmental issues and future ESSM compatibility.

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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 04: Ordnance Support Equipment / BSA 3: Ship Missile Systems Equipment		P-1 Line Item Number / Title: 5231 / Ship Missile Support 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		
Improved Stalker (I-Stalker) will provide incremental improvements to the currently fielded Stalker Long Range Electro-Optic Sensor System (SLREOSS) in response to a 2016 United States Fleet Forces Command (USFFC) Operational Needs Statement (ONS). SLREOSS was developed as a modular, portable, form/fit replacement for the NATO Sea Sparrow Missile System (NSSMS) MK 6 Low Light Level Television (LLTV) in response to the 2010 Naval Forces Central Command (NAVCENT) Counter Swarm Urgent Operational Need (UON) to combat Fast Attack Craft/Fast Inshore Attack Craft (FAC/FIAC). It is currently being fielded in either the NSSMS MK6 MOD 3 LLLTV Director Mount configuration or NSSMS MK6 MOD 4 LLLTV Independent Mount configuration depending on platform specifications. I-Stalker will provide required upgrades to the SLREOSS Independent Mount configuration with the enhanced capabilities provided by the Navy owned Situational Awareness System (SAwS) to deliver an integrated radar and electro-optic/Infrared control and display suite. I-Stalker includes two (2) NSSMS MK6 MOD 4 LLLTV Independent Mount systems and one (1) SAwS which are nomenclatured and installed as an AN/SAY-3. [P40A - 2 / RAM GMLS]: Rolling Airframe Missile (RAM) - MK 49 Guided Missile Launching System (GMLS): RAM is a cooperative program with the Federal Republic of Germany, produced under a series of production MOUs and Memorandum of Agreements (MOAs), the latest was signed on 19 March 2013 executed between the U.S. and the Federal Republic of Germany. The MK-31 Guided Missile Weapon System (GMWS) is a lightweight, quick-reaction, high firepower missile system designed to provide anti-ship missile defense. The system is comprised of a MK-44 Guided Missile Round Pack (GMRP) and the MK 49 GMLS, which holds 21 RAM missiles. The 21-round launcher is compatible with various platforms ranging from large USN aircraft carriers to Littoral Combat Ship (LCS). This system is designed to counter high density anti-ship, cruise missile raids and provide for ship survivability with accurate terminal guidance, proven lethality and no fire control illumination dependence. Funding profile directly supports final installations and associated efforts of RAM Mod 3 upgrades on LSD class ships in accordance with ships installation/availability schedule. Installation funding includes DSA planning and actual installation costs. Without this upgrade the Ship Self Defense System (SSDS) on these ships will only be able to fire RAM in manual mode. Funding also supports the procurement and installation of Tech Refresh/Safety/IA ORDALTS required to field RAM BLK 2A capabilities for increased performance in a raid environment while also addressing obsolescence. The RAM Firepower ORDALT increases the number of RAM Block 2B missiles fired to meet self-defense probability of raid annihilation (PRA) requirements against evolving threat raid scenarios. Without this ORDALT, amphibious ships and aircraft carriers will not be able to defend against emergent raid scenarios. The firepower ORDALT and associated software enables full use of the RAM Block 2B missile against raids. [P40A - 3 / Ship Self Defense System]: The Ship Self Defense System (SSDS) is the core combat system control element for the Quick Reaction Combat Capability (QRCC) in aircraft carriers and amphibious assault ships to defend against Anti-Ship Cruise Missiles (ASCM). SSDS integrates a diverse set of fire control loop sensors and weapons, and C4I systems for each ship class (CVN68/78, LHA6, LHD1, LPD17, and LSD41/49 ship classes). SSDS MK2 provides the capabilities for integrated air and missile defense, multi-warfare situational awareness, combat direction, and joint interoperability via the Cooperative Engagement Capability (CEC) and Tactical Digital Information Link (TADIL)-J (Link 16). SSDS MK2 is being fielded with the new construction carriers (CVN78 class) and amphibious ships (LHA6, LPD17 classes). SSDS MK2 is replacing the Advanced Combat Direction System (ACDS) in the LHD1 class, and SSDS MK1 in the LSD 41/49 class, as fleet modernization initiatives. SSDS MK2 integrates new combat system warfighting capabilities and improvements on phased basis via Advanced Capability Builds (ACB), Technology Insertion (TI), the Fire Control Loop Improvement Project (FCLIP), Far-Term Interoperability Improvement Project (FTIIP), and Task Force Cyber Awakening (TFCA) Boundary Defense Capability. New hardware Technology Insertion baselines are required every four years to refresh the Commercial-Off-The-Shelf (COTS) assemblies to sustain system production and to support the incorporation of new ACB/war-fighting capabilities (FY18-21: TI-16 / FY22-25: TI-22). Each individual ship is planned for a Technology Insertion upgrade on an eight to ten year interval to replace obsolescent COTS hardware and support the fielding of the capabilities. Technology refresh of individual COTS assemblies that are unprocurable or unsupported is handled on a case basis. SHIP SELF DEFENSE SYSTEM (SSDS) MK 2 provides Advanced Combat Direction System (ACDS) functionality and SSDS MK1 capabilities with additional weapon and sensor elements. It is integrated with Cooperative Engagement Capability (CEC) and tactical data links to provide joint interoperability for Aircraft Carriers and Amphibious Ships. It provides enhanced capabilities for Force Protection against air, surface, and subsurface threats using both own-ship and remote data in support of the Anti-Air Warfare (AAW) Capstone Requirements. SSDS MK2 increases operational capabilities, improves combat readiness and Strike Group and Expeditionary Strike Group interoperability. SSDS MK 2 equips back-fit LHDs and CVNs with an upgraded Combat System Display, Automatic Status Board (ASTABS), Remote ASTAB Controllers, peripheral control stations and Advanced Sensor Distribution System (ASDS), as well as, the SSDS MK 2 computing equipment. Prior year procurement of SSDS MK 2 equipment included shore-based SSDS MK 2 equipment and full combat system suites for the Ship Combat System Center (SCSC), Wallops Island, Virginia; maintenance and operator training equipment at the Center for Surface Combat Systems (CSCS), Dam Neck, Virginia; and an equipment suite for the Self Defense Test Ship (SDTS), the SSDS MK2 System Integration Lab (SIL), Raytheon IDS, San Diego, and the Integrated Combat System Test Facility, at Naval Surface Warfare Center Dahlgren. FY17-FY23 includes the procurement of COTS Conversion Kits for CVNs, LPDs, LHDs, LHAs and LSDs, as well as COTS Upgrade Kits / field changes for the shore sites used for SSDS software development/ maintenance, training, and Combat System integration and certification testing. SSDS procurement also includes various Commercial Off The Shelf (COTS) based systems and equipment used within the integrated combat 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 04: Ordnance Support Equipment / BSA 3: Ship Missile Systems Equipment		P-1 Line Item Number / Title: 5231 / Ship Missile Support 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		
FY13-18 kits are based on Technology Insertion - 12 (TI-12) and Technology Insertion - 12 Hybrid (TI-12H) configurations. Due to prior year budget constraints, the TI-16 hardware development, production, and associated ACB-12 software migration was delayed. In order to support critical Ship Combat System modernization installation schedules involving many other CS elements, production of the TI-12 configuration has been extended for SSDS MK2 with technology refresh of un-procurable components (designated TI-12H). This has impacted the FY16 and FY17 execution and FY18 plans. FY16-21 transitions to the TI-16 configuration with procurement for shore sites starting in FY16 and FY17, and procurement for ships starting in FY18(SCN) and FY19(OPN). FY20 begins transition to the TI-22 configuration with procurement for shore sites. The budget cost estimates for the procurement and installation of the kits varies depending on the specific ship class (CVNs, LPDs, LSDs, LHAs, and LHDs), and the existing configuration of the ship or shore site. The cost estimates for individual COTS conversion kits and their associated installation costs are included in the footnotes of exhibit P3A (for UQ005B). For FY19-23, (UQ005) includes procurement of Cyber Security Equipment in support of fielding of Cyber Security capabilities as part of SSDS MK2 Ship Modernization. Starting in FY18, equipment is procured for SSDS Shore Sites integration and test of Cyber Security solutions to support Cyber Security Wholeness. P40A exhibits for SSDS includes the following: P40A - 3 (SSDS) / UQ002 - Production Engineering support for SSDS hardware. P40A - 3 (SSDS) / UQ003 - Engineering Change Proposal (ECP) and Ship Change Document (SCD) for SSDS hardware. P40A - 3 (SSDS) / UQ004 - Training Documentation Changes for SSDS hardware. P40A - 3 (SSDS) / UQ005A/B - COTS Engineering / Obsolescence Kits/Field Changes for SSDS hardware. P40A - 3 (SSDS) / UQ007 - Combat System Ships Qualification Trials (CSSQT) P40A - 3 (SSDS) / UQ008 - Combat System Documentation & Support UQ005A - COTS Engineering support for SSDS hardware at headquarters and field activities. UQ005B - SSDS hardware procurement, installation documentation, and drawing specification of the defined SSDS COTS Conversion kits, dependent upon the shipboard or shore site equipment configuration. UQ007 - Combat System Ship Qualification Trial (CSSQT) Combat System Ships Qualification Trials (CSSQTs) are designated for CVNs and AMPHIBs in accordance with NAVSEAINST 9093.1C. CSSQTs will validate installation and performance of Combat System (CS) upgrades, and will ensure crew can operate and maintain the new systems. The execution phase of CSSQT is required to verify/validate CS performance and to qualify the ship and ships forces ability to properly operate and maintain the upgraded ship in an at-sea, Surface Warfare (SUW) and Anti-Air Warfare (AAW) environment. UQ008 - Combat System Documentation & Support Provides for generation, update, and validation of CS documentation as a result of CS configuration changes during ship modernization. This includes the following Ship Selected Records (SSRs)for CVN, LHD, LHA, LPD 17 and LSD 41/49 Class Ships. PB20 includes CS documentation and support for all of the CVN and Amphibious class ships that will undergo SSDS MK2 upgrades. Combat System Operations Sequencing System (CSOSS) - Provides detailed, ship specific procedures to configure the CS for tactical operations, training and casualty reconfiguration. Capabilities and Limitations (C&L) - provides ship CS AAW and SUW capabilities and limitations tailored to the specific ship CS configuration. Combat System Interface Diagrams (CSID) - Provide essential information for troubleshooting CS inter-systems casualties. Combat System Alignment Manual (CSAM) - provides detailed test and alignment procedures for a specific ship. CSAM is used to ensure that all sensors, weapons, navigation and the Landing Indicator Systems are optically, mechanically, and electronically aligned to the ship's Alignment Reference plane. Overall CS Operability Test (OCSOT) - is a CS test from Detect through Engage to demonstrate material condition readiness of the integrated CS. Support includes planning with Ship Program Manager (SPM) for CS modernization across CVN and Amphibious class ships, head-quarter's support, and liaison with local Regional Maintenance Centers (RMC), CS Waterfront Engineers, and NSWC PHD support for Installation Coordination Teams.		

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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 04: Ordnance Support Equipment / BSA 3: Ship Missile Systems Equipment		P-1 Line Item Number / Title: 5231 / Ship Missile Support 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 - 3 / UQ007 - Combat System Ship Qualification Trial (CSSQT)]: For UQ007- FY19 includes CSSQT Conduct funds for one ship and CSSQT Advance Planning funds for 3 LPD's, 2 LHD's, 1 LSD and 1 CVN. FY20 includes CSSQT Conduct funds for 1 LPD, 1 LSD and 1 LHD and CSSQT Advance Planning funds for 3 LPD's, 2 LHD's, and 1 CVN. The cost of the CSSQT varies across ship classes based on the CS weapons configuration (LPD-CS with RAM/MK46, LSD-CS with RAM/CIWS, CVN/LHA/LHD-CS with RAM/ESSM/CIWS). [P40A - 3 / UQ008 - Combat System Documentation & Support]: FY18 procurement includes 3 ships representing 2 ship class CS configurations. FY19 procurement includes Combat System Doc and Waterfront support funding for 2 LPD's, 1 LHD and 1 LSD. FY20 includes Combat System Doc and Waterfront support funding for 1 LPD's, 1 LHD and 1 CVN. PB20 includes Combat System Documentation and Waterfront Support for all the CVN and Amphibious class ships that will undergo Combat System SSDS MK 2 upgrades within the next 2 years. The waterfront and modernization support in UQ008 also increases in FY18 and out to include all of the ships undergoing modernization. [P40A - 4 / AEGIS Support Equipment]: Provides equipment procurement and installation support for AEGIS Shore Facilities and Shipboard Upgrades to AEGIS Cruisers and Destroyers required to maintain the readiness of the AEGIS Weapon System in support of Combatant Commanders requirements. L7001: Provides funding to procure and maintain special test equipment (Adaptive Diagnostic Electronic Portable Test Set(ADEPT)/Radiation Probes) to support Maintenance and Troubleshooting efforts for the AEGIS Weapon System on Deployed Units and Critical shore sites. L7003: Provides funding to procure and maintain Integrated Warfare Systems Laboratory (IWSL) Weapons System and support infrastructure to support fleet issues resolution within the AEGIS Weapon System. L7006: Provides funding to procure and maintain SCSC Weapons and Combat systems and support infrastructure to support fleet training requirements and integration and test efforts required to complete Weapon and Combat System Certification. L7007: Provides funding to procure and maintain ATRC Weapons and Combat systems and support infrastructure to support fleet training requirements for the AEGIS Weapon System. L7011: Provides funding to address fleet hardware issues related to equipment obsolescence, high failure, or to reduce maintenance costs and improve the readiness of the AEGIS Fleet. L7012: Provides SPY 1D/DV radar enhancements for AEGIS DDGs to improve radar reliability L7014: Provides Radar Refurbishment to support AEGIS DDG 53-78 in support of AEGIS BL 5.3 Update L7015: AEGIS Integration and Installation support for 4 DDG to receive SEARAM upgrade L7016: AEGIS TI-12H Backfit L7600: Provides funding to complete installation of ORDALTS and other Ship Changes designed to improve the readiness of the AEGIS Combat System. [P40A - 5 / Vertical Launch Systems]: The MK-41 Vertical Launching System (VLS) is a surface combatant missile launching system, designed to store, select and launch various STANDARD Missile configurations, TOMAHAWK, Tactical TOMAHAWK, EVOLVED SEASPARROW (ESSM) and Vertical Launch ASROC (Anti Submarine ROcket) (VLA) missiles. The MK-41 VLS significantly improves missile capacity, flexibility, multi-mission capability, reaction time and rate of fire and is designed to be adaptable to present and future weapon systems. Current configurations are: two 61 cell launchers, forward and aft, for 22 TICONDEROGA (CG 47) Class Cruisers beginning with CG-52; one 61 cell aft and one 29 cell launcher forward for 28 ARLEIGH BURKE (DDG 51) Class Destroyers; and one 64 cell launcher aft and one 32 cell launcher forward for 34 DDG 51 FLT IIA ships. The OPN requirements procure Engineering Change Proposals/Ordnance Alterations (ECP/ORDALT) and funds sustaining engineering support for Fleet investigations and safety issues. Funds are required for Fleet operational availability, capability, safety and survivability. There are no significant increases or decreases in this program. [P40A - 6 / ANTI SHIP MISSILE DECOY SYSTEM]: Funding is being realigned to BLI 5530 starting in FY20. The last DLS will be procured under BLI 5530. The Anti-Ship Missile Decoy Program covers a family of decoys and the equipment to deploy them. It is an essential element of the Anti-Ship Missile Defense tactics to counter the threat of enemy homing missiles. NULKA is a joint program with Australia, and is currently in service with the Australian, Canadian, and United States Navies. NULKA consists of the Decoy Launching System (DLS) (MK 53) and Offboard Active Decoy (MK 234). This line contains various equipment and subsystems for a system which will provide the capability to defeat the effectiveness of hostile Anti-Ship cruise missiles. The MK 53 DLS consists of a Decoy Launch Processor (DLP), launching power supplies, and from two to six launchers depending on the ship class. Each launcher is capable of storing and launching two Nulka decoys. The MK 53 DLS provides the launch authorization and flight demands to the Nulka decoy when a Nulka engagement is initiated by the Electronic Warfare (EW) operator. The MK 53 DLS has been installed on the CG 47, DDG 51, FFG 7, LSD 41, and LSD 49 Classes in prior years. Installation of the MK 53 DLS on CVNs began in FY14 and it will be installed on eight carriers. The first DLS for CVNs was procured under the previous OPN budget (BLI 5530). Six of the final seven are being procured under this budget.		

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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 04: Ordnance Support Equipment / BSA 3: Ship Missile Systems Equipment		P-1 Line Item Number / Title: 5231 / Ship Missile Support 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		
The Advanced Decoy Architecture Project (ADAP) is EW payload developed under an Office of Naval Research (ONR) program that targets specific threats that the current payload on the Nulka decoy does not. The ADAP payload provides an advanced EW transmitter and increased signal processing capability. [P40A - 7 / OTH PROCUREMENT]: The Over The Horizon Weapon System (OTH WS) provides the Littoral Combat Ship/Frigate (LCS/FF) with long range anti-surface offensive capability against the full range of surface combatants (Fast Attack Craft to Capital Warships). The OTH WS consists of a Missile Launch System and a complement of missiles. Missile Launch System components include a Launch Mechanism, Operator Interface, and Fire Control System. [P40A - 7 / OTH WS INSTALLATION]: Provides funding for the installation of the Over The Horizon Weapon System (OTH WS) onto Littoral Combat Ship (LCS) Class ships. [P40A - 7 / OTH WS INSTALLATION]: Provides funding for the installation of the Over The Horizon Weapon System (OTH WS) onto Littoral Combat Ship (LCS) Class ships.		

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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 04: Ordnance Support Equipment / BSA 3: Ship Missile Systems Equipment			P-1 Line Item Number / Title: 5231 / Ship Missile Support 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	NATO SEASPARROW	P-5a			- / 78.869	- / 19.319	- / 27.847	- / 21.185	- / -	- / 21.185
P-40a	RAM GMLS				- / 8.884	- / 3.938	- / 6.070	- / 2.757	- / -	- / 2.757
P-40a	Ship Self Defense System				- / 29.490	- / 8.880	- / 13.385	- / 23.307	- / -	- / 23.307
P-40a	AEGIS Support Equipment				- / 311.434	- / 75.089	- / 33.692	- / 89.000	- / -	- / 89.000
P-40a	Vertical Launch Systems				- / 2.058	- / 0.660	- / 0.667	- / 0.682	- / -	- / 0.682
P-40a	ANTI SHIP MISSILE DECOY SYSTEM	P-5a, P-21			- / 107.582	- / 38.008	- / 19.387	- / -	- / -	- / -
P-40a	OTH Weapon System				- / 0.000	- / -	- / 2.874	- / 1.800	- / -	- / 1.800
P-3a	1 / NATO SEASPARROW (NSSMS Mk 57)				- / 29.670	- / 10.128	- / 8.488	- / 12.800	- / 0.000	- / 12.800
P-3a	2 / UR006 RAM MK-49 GMLS ORDALTS (NON-FMP Install)				- / 13.443	- / 3.862	- / 3.688	- / 4.707	- / 0.000	- / 4.707
P-3a	3 / UQ005B - SSDS COTS CONVERSION KITS (TBD)				- / 105.615	- / 57.253	- / 75.565	- / 71.866	- / 0.000	- / 71.866
P-3a	4 / VV001 NULKA SYSTEMS (TBD)				- / 24.966	- / 13.033	- / 8.455	- / 0.000	- / 0.000	- / 0.000
P-40	Total Gross/Weapon System Cost				- / 712.011	- / 230.170	- / 200.118	- / 228.104	- / 0.000	- / 228.104

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	NATO SEASPARROW	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-40a	RAM GMLS				- / -	- / -	- / -	- / -	- / -	- / -
P-40a	Ship Self Defense System				- / -	- / -	- / -	- / -	- / -	- / -
P-40a	AEGIS Support Equipment				- / -	- / -	- / -	- / -	- / -	- / -
P-40a	Vertical Launch Systems				- / -	- / -	- / -	- / -	- / -	- / -
P-40a	ANTI SHIP MISSILE DECOY SYSTEM	P-5a, P-21			- / -	- / -	- / -	- / -	- / -	- / -
P-40a	OTH Weapon System				- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / NATO SEASPARROW (NSSMS Mk 57)				- / 21.018	- / 22.853	- / 16.187	- / 16.354	- / 2.200	- / 139.698
P-3a	2 / UR006 RAM MK-49 GMLS ORDALTS (NON-FMP Install)				- / 7.345	- / 6.826	- / 6.065	- / 6.460	- / 77.600	- / 129.996
P-3a	3 / UQ005B - SSDS COTS CONVERSION KITS (TBD)				- / 70.352	- / 71.176	- / 66.800	- / 76.678	- / 31.406	- / 626.711
P-3a	4 / VV001 NULKA SYSTEMS (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.001	- / 46.455
P-40	Total Gross/Weapon System Cost				- / 243.792	- / 241.091	- / 243.267	- / 233.658	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.

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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 / 04 / 3								P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment								Aggregated Items Title: NATO SEASPARROW			

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) EQUIPMENT MODERNIZATION - US005																				
1.1) Objective Configuration Engineering ⁽¹⁾	A		-	-	10.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.2) MISSILE LAUNCHER UPGRADE ⁽²⁾	A		-	-	44.177	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.3) PRODUCTION SUPPORT ⁽³⁾	A		-	-	4.500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.5) LHD UPGRADE ⁽⁴⁾	A		-	-	18.346	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.6) Mk57 Mod 12-15 Modernization ⁽⁵⁾	A		-	-	-	-	-	11.551	-	-	12.412	-	-	11.285	-	-	-	-	-	11.285
1.7) Launcher Min-Mod BLK 2 Capability H/W ⁽⁶⁾	A		-	-	-	-	-	1.500	-	-	2.500	-	-	1.000	-	-	-	-	-	1.000
1.8) CVN/ LHA Objective Configuration Engineering Upgrade ⁽⁷⁾	A		-	-	-	-	-	-	-	-	2.500	-	-	-	-	-	-	-	-	-
Subtotal: 1) EQUIPMENT MODERNIZATION - US005			-	-	77.023	-	-	13.051	-	-	17.412	-	-	12.285	-	-	-	-	-	12.285
2) STALKER - US005																				
2.1) STALKER PRODUCTION SUPPORT	A		-	-	1.846	-	-	0.189	-	-	0.210	-	-	0.355	-	-	-	-	-	0.355
Subtotal: 2) STALKER - US005			-	-	1.846	-	-	0.189	-	-	0.210	-	-	0.355	-	-	-	-	-	0.355
3) I-Stalker - US005 ⁽⁸⁾																				
3.1) I-Stalker Kits ^(†)	A		-	-	-	551,000.00	10	5.510	545,818.00	11	6.004	800,000.00	6	4.800	-	-	-	800,000.00	6	4.800
3.2) I-Stalker Install	A		-	-	-	-	-	0.569	-	-	4.221	-	-	3.745	-	-	-	-	-	3.745
Subtotal: 3) I-Stalker - US005			-	-	0.000	-	-	6.079	-	-	10.225	-	-	8.545	-	-	-	-	-	8.545
Total			-	-	78.869	-	-	19.319	-	-	27.847	-	-	21.185	-	-	-	-	-	21.185

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⁾ The Objective Configuration Engineering line funded the requirements for the NSSMS MK 57 Mod 14 (Objective Configuration) for LHD 1 Class ships. The design was completed in FY 15 and no additional funding was placed on this line.

⁽²⁾ The Missile Launcher Upgrade (MLU) program, that would have provided a launcher capable of launching a ESSM Blk 2, has been placed on indefinite hold. The solicitation for the launcher upgrade development contract was cancelled because a fair and reasonable price with Raytheon could not be reached; however the requirement to deliver a launcher capable of launching an ESSM Blk 2 still exists. The Navy is pursuing a minimum modification approach for fielding this launcher upgrade to meet schedule requirements. The MLU line was zeroed out in FY 17/18. A new line, 1.7) Launcher Min-Mod to BLK 2, has replaced the MLU line.

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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 / 04 / 3	P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment	Aggregated Items Title: NATO SEASPARROW
(3) The Production Support Line has been zeroed out to better streamline the funding requirements. This funding has been rolled up in the Objective Configuration line on the P3A to support the current program baseline. (4) This funding line provides the hands on labor required to deliver an Objective Configuration system to the LHD 1 Class ships. To reflect the true cost of an Objective Configuration System this funding has been incorporated into the hardware costs on the P3A. A full up ship cost is now being used in the P3A. This funding has been zeroed out. (5) The title of this line has been changed from Objective Configuration to Mk57 Mod 12-15 Modernization. The title Objective Configuration caused confusion in that it was assumed this funding was upgrade support for production of the NSSMS Mk57 Mod 14 Objective Configuration (OC) system. Funding in this line actually provides for field activity and industry support for all efforts associated with the Mk57 Mods 12-15 system. (6) This Launcher Min-Mod BLK 2 Capability Upgrade line replaces the Missile Launcher Upgrade line. With the Missile Launcher Upgrade program being placed on indefinite hold this provides funding for a minimum modification approach for fielding a launcher capable of launching a ESSM Blk 2 missile. Installation plan as follows: CVN78 and LHD8 planned for FY21, CVN71 and LHD2 planned for FY22, CVN72 and LHD3 planned for FY23, LHD5/7 planned for FY24. (7) This line provides funding for Objective Configuration Engineering Upgrade on CVN/LHA ships. CVN70 planned in FY19, CVN71/72 planned in FY23, LHD7/8 planned in FY24. (8) Kits procured in FY2018 includes 10 Stalker mounts and 3 SAWS components; kits procured FY2019 includes 11 Stalker mounts and 6 SAWS components. Kits procured in FY2020 to FY2022 include Stalker mount, SAWS components, and below deck equipment. I-Stalker kit cost increase from FY19 to FY20 is due to the inclusion of below deck Stalker IM support equipment kits. In FY19 and prior, these kits were included as GFE and not procured, however, GFE stocks of these kits will be depleted by FY20 and must be included in the system procurement cost in FY20 and forward.		

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3			P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment					Aggregated Items: NATO SEASPARROW				
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>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
3) I-Stalker - US005												
3.1) I-Stalker Kits		2018	BALL / Westminster, CO	SS / FFP	NSWC Crane	Sep 2018	Jul 2019	10	551,000.00	Y		Nov 2017
3.1) I-Stalker Kits		2019	BALL / Westminster, CO	SS / FFP	NSWC Crane	Dec 2018	Dec 2019	11	545,818.00	Y		Nov 2017
3.1) I-Stalker Kits		2020	TBD / TBD	C / FFP	TBD	Apr 2020	Apr 2021	6	800,000.00	Y		Mar 2019

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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 / 04 / 3								P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment							Aggregated Items Title: RAM GMLS ⁽⁹⁾					
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) UR006 RAM MK-49 GMLS ORDALTS ⁽¹⁰⁾																				
1.1) UR006 RAM MK-49 GMLS ORDALTS	A		-	-	3.384	-	-	3.804	-	-	5.865	-	-	2.757	-	-	-	-	-	2.757
Subtotal: 1) UR006 RAM MK-49 GMLS ORDALTS			-	-	3.384	-	-	3.804	-	-	5.865	-	-	2.757	-	-	-	-	-	2.757
2) UR901 Systems Improvements ⁽¹¹⁾																				
2.1) UR901 System Improvement	A		-	-	5.500	-	-	0.134	-	-	0.205	-	-	-	-	-	-	-	-	-
Subtotal: 2) UR901 Systems Improvements			-	-	5.500	-	-	0.134	-	-	0.205	-	-	-	-	-	-	-	-	-
Total			-	-	8.884	-	-	3.938	-	-	6.070	-	-	2.757	-	-	-	-	-	2.757
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
Footnotes:																				
⁽⁹⁾ NSWC Port Hueneme provides installation oversight support as the In-Service Engineering Activity (ISEA) for the RAM GMLS system.																				
⁽¹⁰⁾ These funds provide for GMLS production support, systems engineering, logistics, Ship Change Designs (SCD), Engineering Change Proposals (ECP), ship drawings for ORDALT instructions as well as information assurance (IA) compliance and safety and Interactive Electronic Technical Manuals (IETM). Funding increased in FY18-FY21 to support RAM Blk 2B Firepower ORDALTS to meet self defense PRA requirements against evolving threat raid scenarios and development and fielding of associated software.																				
⁽¹¹⁾ Provides for procurement and installation of critical RAM system improvement and safety ORDALTS																				

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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 / 04 / 3								P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment							Aggregated Items Title: Ship Self Defense System ⁽¹²⁾					
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) Ship Self Defense System (SSDS) ⁽¹³⁾																				
1.1) UQ002 - SSDS Production Support	A		-	-	4.909	-	-	1.548	-	-	1.574	-	-	1.600	-	-	-	-	-	1.600
1.2) UQ003 - SSDS ECP / SCD	A		-	-	0.586	-	-	0.202	-	-	0.205	-	-	0.209	-	-	-	-	-	0.209
1.3) UQ004 - SSDS Training	A		-	-	2.139	-	-	0.737	-	-	0.750	-	-	0.763	-	-	-	-	-	0.763
1.4) UQ005A - SSDS COTS Eng/ Obsolescence Kits	A		-	-	9.671	-	-	0.509	-	-	2.950	-	-	2.970	-	-	-	-	-	2.970
1.5) UQ007 - Combat System Ship Qualification Trial (CSSQT) ⁽¹⁴⁾	A		-	-	9.803	-	-	3.154	-	-	3.971	-	-	13.975	-	-	-	-	-	13.975
1.6) UQ008 - Combat System Documentation & Support	A		-	-	2.382	-	-	2.730	-	-	3.935	-	-	3.790	-	-	-	-	-	3.790
Subtotal: 1) Ship Self Defense System (SSDS)			-	-	29.490	-	-	8.880	-	-	13.385	-	-	23.307	-	-	-	-	-	23.307
Total			-	-	29.490	-	-	8.880	-	-	13.385	-	-	23.307	-	-	-	-	-	23.307

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

Footnotes:

⁽¹²⁾ See P-40 Description (on page 3) for the description of each item listed in P-40a (UQ005A/5B, UQ007, and UQ008).

⁽¹³⁾ In FY2016, \$5.2M of SSDS funds were reprogramed from UQ005B - COTS Upgrade Kits for Shore Sites to UQ007 - CSSQT to support essential CSSQT requirements for LSD Class SSDS MK2/Combat System Upgrade in LSD45 and LSD52. (7) In FY2016, \$2.082M of SSDS funds were re-designated from UQ005B - COTS Upgrade Kits for shore sites to UQ005A - COTS Engineering/Obsolescence Kits to fund critical COTS assemblies/kits for Diminishing Manufacturing Source (DMS) parts to extend the production and fielding of the TI-12 configuration with the TI-12H configuration, and to fund an emergent requirement for COTS High Speed Guard equipment for the Self Defense Test Ship CVN78 SSDS configuration for network Cyber Security Protection. (8) In FY2017, \$1.431M of SSDS funds were re-designated from UQ005B - COTS Conversion Kits to UQ007 for the completion of CSSQT in the LSD Class ships (LSD51 and LSD52) in addition to the conduct of CSSQT in the LHD2. (9) In FY2017, \$0.805M of SSDS funds were re-designated from UQ005B - COTS Conversion Kits to UQ008 for CS Documentation and support for the LSD Class Ships (LSD49 and LSD52) in addition to the LHD2 requirements. (10) In FY17, two TI-12H COTS Conversion Kits in UQ005B for ships ((1) for CVN and (1) for L-Class) were re-designated to shore sites due to a combination of factors, including the reduction in shore site procurement in UQ005B in FY16 and FY17 for higher priority requirements (CSSQT, DMS parts and cyber security equipment), and the impact of the delayed FY17 equipment procurement on the availability schedules for the two ships.

⁽¹⁴⁾ FY19 includes CSSQT Conduct funds for one ship and CSSQT Advance Planning funds for 3 LPD's, 2 LHD's, 1 LSD and 1 CVN. FY20 includes CSSQT Conduct funds for 1 LPD, 1 LSD and 1 LHD and CSSQT Advance Planning funds for 3 LPD's, 2 LHD's, and 1 CVN. The cost of the CSSQT varies across ship classes based on the CS weapons configuration (LPD-CS with RAM/MK46, LSD-CS with RAM/CIWS, CVN/LHA/LHD-CS with RAM/ESSM/CIWS).

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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 / 04 / 3							P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment								Aggregated Items Title: AEGIS Support Equipment ⁽¹⁵⁾					
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) Aegis Support Equipment																				
1.1) L7001 - Depot Special Tooling/Test Equipment	A		-	-	12.215	-	-	4.086	-	-	4.095	-	-	4.184	-	-	-	-	-	4.184
1.2) L7003 - Integrated Warfare Systems Laboratory ⁽¹⁶⁾	A		-	-	1.317	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.3) L7006 - Surface Combat Systems Center Equipment	A		-	-	104.278	-	-	8.751	-	-	5.541	-	-	3.379	-	-	-	-	-	3.379
1.4) L7007 - Aegis Training and Readiness Center Upgrade	A		-	-	53.365	-	-	8.230	-	-	3.578	-	-	2.980	-	-	-	-	-	2.980
1.5) L7011 - Aegis Weapon System Ship Change Procurement	A		-	-	44.021	-	-	12.684	-	-	12.332	-	-	10.571	-	-	-	-	-	10.571
1.6) L7012 - SPY 1D/DV Radar Enhancements ⁽¹⁷⁾	A		-	-	24.000	-	-	17.172	-	-	-	-	-	17.900	-	-	-	-	-	17.900
1.7) L7014 - SPY Radar Refurbishment ⁽¹⁸⁾	A		-	-	40.200	-	-	17.918	-	-	-	-	-	29.100	-	-	-	-	-	29.100
1.8) L7015 - AEGIS SEARAM Integration and Installation Support	A		-	-	-	-	-	-	-	-	1.400	-	-	-	-	-	-	-	-	-
1.9) L7016 - AEGIS TI12H Backfit ⁽¹⁹⁾	A		-	-	-	-	-	-	-	-	-	-	-	13.800	-	-	-	-	-	13.800
1.11) L7600 - Aegis Support Equipment Installation	A		-	-	32.038	-	-	6.248	-	-	6.746	-	-	7.086	-	-	-	-	-	7.086
Subtotal: 1) Aegis Support Equipment			-	-	311.434	-	-	75.089	-	-	33.692	-	-	89.000	-	-	-	-	-	89.000
Total			-	-	311.434	-	-	75.089	-	-	33.692	-	-	89.000	-	-	-	-	-	89.000

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

Footnotes:

⁽¹⁵⁾ Provides equipment procurement and installation support for AEGIS Shore Facilities and Shipboard Upgrades to AEGIS Cruisers and Destroyers required to maintain the readiness of the AEGIS Weapon System in support of Combatant Commanders requirements. Combat System Procurements: L7001: Special Tools & Test Equipment L7003: Computers, Displays, and Simulators for Integrated Warfare Systems Laboratory (IWSL) at Dahlgren, VA L7006: Weapon/Combat System Equipment for Surface Combat System Center (SCSC) at Wallops Island, VA L7007: Weapon/Combat System Equipment for AEGIS Readiness Training Center (ATRC) at Dahlgren, VA L7011: AEGIS Weapon System Procurements to support Ship Change Documents L7012: AEGIS Weapon System Procurements to support AEGIS SPY-1D/DV Enhancements for AEGIS DDGs (APLS) L7014: AEGIS Weapon System Procurements to support SPY Refurbishments

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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 / 04 / 3	P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment	Aggregated Items Title: AEGIS Support Equipment ⁽¹⁵⁾
in support of AEGIS BL 5.3.X Upgrade planned to field in FY18. L7015: AEGIS Integration and Installation support for 4 DDG to receive SEARAM upgrade L7016: AEGIS TI-12H Backfit L7027: AEGIS Software License Procurements to support Shore Facilities and In-Service Ship L7600: AEGIS Installation support for approved ship changes L7999: Congressional Recission ⁽¹⁶⁾ Eliminates procurement outfitting and maintenance of the Integrated Warfare System Laboratory (IWSL) beyond FY15 ⁽¹⁷⁾ SPY 1D/DV Radar Enhancements - The AEGIS Linear Processor System (ALPS) program provides the AN/SPY-1D/DV radar with AAW improvements in a complex electronic environment. ALPS provides growth capability for EMI susceptibility, electronic support measures (ESM), and barrage jamming improvements via new wideband receiver modules in an adjunct processor. ⁽¹⁸⁾ Covers the Navy share for refurbishment of the Flight I and II DDG SPY-1D arrays to include the installation of Low Noise Amplifiers (LNA) to improve radar sensitivity against emerging threats. The Navy and Missile Defense Agency are each covering half the cost for these upgrades that will keep the Flight I/II DDGs relevant through the remainder of their service life. ⁽¹⁹⁾ Funds the backfit of the Technology Insertion-12 Hybrid solution (TI-12H) on the baseline 9 TI-12 CGs and DDGs which enables those ships to be upgraded to AEGIS Baseline 9 Capability Packages 2020, 2021, and 2022. These baseline upgrades include significant warfighter improvements to include Laser integration, ESSM BLK II, SM-6 BLK 1B, SEWIP BLK II integration, NIFC-CA 2019, NIFC-CA Collateral III, as well as cybersecurity improvements. The Missile Defense Agency is funding half of the TI-12H backfits.		

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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 / 04 / 3						P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment									Aggregated Items Title: Vertical Launch 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 (\$)	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) Vertical Launch Systems																				
1.1) VLS ORDALTS	A		-	-	1.314	-	-	0.422	-	-	0.438	-	-	0.447	-	-	-	-	-	0.447
1.2) VLS PRODUCTION ENGINEERING	A		-	-	0.583	-	-	0.184	-	-	0.174	-	-	0.179	-	-	-	-	-	0.179
Subtotal: 1) Vertical Launch Systems			-	-	1.897	-	-	0.606	-	-	0.612	-	-	0.626	-	-	-	-	-	0.626
2) 5A5IN Install Equipment N86 ⁽²⁰⁾																				
2.1) 5A5IN Install Equipment N86	A		-	-	0.161	-	-	0.054	-	-	0.055	-	-	0.056	-	-	-	-	-	0.056
Subtotal: 2) 5A5IN Install Equipment N86			-	-	0.161	-	-	0.054	-	-	0.055	-	-	0.056	-	-	-	-	-	0.056
Total			-	-	2.058	-	-	0.660	-	-	0.667	-	-	0.682	-	-	-	-	-	0.682

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

Footnotes:

⁽²⁰⁾ VLS ORDALT Installation

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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 / 04 / 3							P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment							Aggregated Items Title: ANTI SHIP MISSILE DECOY 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) VV002 - NULKA DECOYS ⁽²¹⁾																				
1.1) NULKA DECOYS ^(†)	A		1,571K	33	51.837	1,235K	25	30.864	1,900K	7	13.300	-	-	-	-	-	-	-	-	-
Subtotal: 1) VV002 - NULKA DECOYS			-	-	51.837	-	-	30.864	-	-	13.300	-	-	-	-	-	-	-	-	-
2) VV830 - PRODUCTION ENGINEERING ⁽²²⁾																				
2.1) PRODUCTION ENGINEERING	A		-	-	6.451	-	-	2.502	-	-	2.089	-	-	-	-	-	-	-	-	-
Subtotal: 2) VV830 - PRODUCTION ENGINEERING			-	-	6.451	-	-	2.502	-	-	2.089	-	-	-	-	-	-	-	-	-
3) VV004 - ADAP PAYLOAD																				
3.1) ADAP PAYLOAD ^(†)	A		493,547.95	73	36.029	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 3) VV004 - ADAP PAYLOAD			-	-	36.029	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5) VV003 - ENG CHANGE PROPOSALS (ECPs)/ILS SUPPORT ⁽²³⁾																				
5.1) ECPs	A		-	-	2.291	-	-	1.433	-	-	1.460	-	-	-	-	-	-	-	-	-
5.2) Logistics/ Production Support	A		-	-	10.974	-	-	3.209	-	-	2.538	-	-	-	-	-	-	-	-	-
Subtotal: 5) VV003 - ENG CHANGE PROPOSALS (ECPs)/ILS SUPPORT			-	-	13.265	-	-	4.642	-	-	3.998	-	-	-	-	-	-	-	-	-
Total			-	-	107.582	-	-	38.008	-	-	19.387	-	-	-	-	-	-	-	-	-
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:																				
⁽²¹⁾ VV002: Procurement of MK 234 NULKA Decoys. The FY18 unit cost (\$1,236K) is based on a total procurement of 35 decoys (23 procured with 5231/OPN and 12 procured by Australia). The FY19 unit cost (\$1,900K) is based on a total procurement of 19 decoys (7 procured with 5231/OPN and 12 procured by Australia). Decrease in FY18 VV002 decoys procurement due to \$17.317M Congressional Rescission. 1288 = Total number of Nulka decoys (PU: VV002) To Complete: 962 decoys procured under BLI:5530 (FY14 and prior) and 33 decoys procured under BLI:5231 (FY15-FY17).																				
⁽²²⁾ VV830: Production Engineering support to the MK 234 NULKA Decoy.																				
⁽²³⁾ VV003 - Funding will procure Engineering Change Proposals (ECPs)/ORDALT Kits to ensure future tactical suitability and viability of NULKA and to address obsolescence, quality assurance, reliability, safety, Electromagnetic Interference (EMI), and diminishing manufacturing source issues. Additionally, funding will provide for updating Logistics including decoy and special purpose test equipment maintenance, provisioning, transportation, and training school support as required.																				

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3				P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment				Aggregated Items: ANTI SHIP MISSILE DECOY 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) VV002 - NULKA DECOYS												
1.1) NULKA DECOYS ^(†)		2017	BAES / AUSTRALIA	C / FFP	US Embassy, Canberra	Jun 2018	Aug 2019	21	1,456K	Y		
1.1) NULKA DECOYS ^(†)		2018	BAES / AUSTRALIA	C / FFP	US Embassy, Canberra	Dec 2018	Feb 2020	25	1,235K	Y		
1.1) NULKA DECOYS ^(†)		2019	BAES / AUSTRALIA	C / FFP	US Embassy, Canberra	Dec 2018	Dec 2020	7	1,900K	Y		
3) VV004 - ADAP PAYLOAD												
3.1) ADAP PAYLOAD ^(†)		2016	EXELIS / NJ	C / FFP	Naval Research Lab	Apr 2016	Jun 2018	35	537,970.00	Y		
3.1) ADAP PAYLOAD ^(†)		2017	EXELIS / NJ	C / FFP	Naval Research Lab	Aug 2017	Nov 2019	38	452,632.00	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 / 04 / 3										P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment										Aggregated Items: ANTI SHIP MISSILE DECOY SYSTEM														
Items (Units in Each)								Fiscal Year 2016												Fiscal Year 2017												BALANCE		
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2015	BAL DUE AS OF 1 OCT							Calendar Year 2016										Calendar Year 2017											
							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) VV002 - NULKA DECOYS																																		
1.1) NULKA DECOYS																																		
Prior Years Deliveries: 12																																		
	1	2017	NAVY	21	0	21																										21		
	1	2018	NAVY	25	0	25																										25		
	1	2019	NAVY	7	0	7																										7		
3) VV004 - ADAP PAYLOAD																																		
3.1) ADAP PAYLOAD																																		
	2	2016	NAVY	35	0	35											A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35
	2	2017	NAVY	38	0	38																										A -	-	38
							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 / 04 / 3										P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment										Aggregated Items: ANTI SHIP MISSILE DECOY 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) VV002 - NULKA DECOYS																																								
1.1) NULKA DECOYS																																								
Prior Years Deliveries: 12																																								
	1	2017	NAVY	21	0	21											A	-	-	-	-	-	-	-	-	-	-	-	-	1	2	18								
	1	2018	NAVY	25	0	25																					A	-	-	-	-	-	-	-	-	-	-	-	-	25
	1	2019	NAVY	7	0	7																					A	-	-	-	-	-	-	-	-	-	-	-	-	7
3) VV004 - ADAP PAYLOAD																																								
3.1) ADAP PAYLOAD																																								
	2	2016	NAVY	35	0	35	-	-	-	-	-	-	-	-	2	3	3	3	3	3	3	3	3	3	3	3	3	3	0											
	2	2017	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 / 04 / 3										P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment																			Aggregated Items: ANTI SHIP MISSILE DECOY SYSTEM									
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								
1) VV002 - NULKA DECOYS																																						
1.1) NULKA DECOYS																																						
Prior Years Deliveries: 12																																						
	1	2017	NAVY	21	3	18	2	2	2	2	1	1	2	2	2	2																0						
	1	2018	NAVY	25	0	25	-	-	-	-	2	3	2	2	2	2	2	2	2	2	2												0					
	1	2019	NAVY	7	0	7	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1								0			
3) VV004 - ADAP PAYLOAD																																						
3.1) ADAP PAYLOAD																																						
	2	2016	NAVY	35	35	0																										0						
	2	2017	NAVY	38	0	38	-	2	3	3	4	3	3	4	3	4	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 / 04 / 3				P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment				Aggregated Items: ANTI SHIP MISSILE DECOY 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	BAES - AUSTRALIA			192	0	6	12	18	0	0	12	12
2	EXELIS - NJ			TBD	0	0	12	12	0	0	12	12

"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-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy															Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3						P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment									Aggregated Items Title: OTH Weapon 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) OTH Weapon System																				
1.1) OTH PROCUREMENT	A		-	-	-	-	-	-	2,874K	1	2.874	752,581.00	2	1.505	-	-	-	752,581.00	2	1.505
1.2) OTH Support	A		-	-	-	-	-	-	-	-	-	-	-	0.295	-	-	-	-	-	0.295
Subtotal: 1) OTH Weapon System			-	-	0.000	-	-	-	-	-	2.874	-	-	1.800	-	-	-	-	-	1.800
Total			-	-	0.000	-	-	-	-	-	2.874	-	-	1.800	-	-	-	-	-	1.800

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 / 04 / 3	P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment	Modification Number / Title: 1 / NATO SEASPARROW

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)	29.670	10.128	8.488	12.800	0.000	12.800	21.018	22.853	16.187	16.354	2.200	139.698
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	29.670	10.128	8.488	12.800	0.000	12.800	21.018	22.853	16.187	16.354	2.200	139.698
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	29.670	10.128	8.488	12.800	0.000	12.800	21.018	22.853	16.187	16.354	2.200	139.698
(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:

Equipment procurements on the P3a

- Objective Configuration H/W line supports the NSSMS Mk57 Mod 14 (L class ships) for installation on six LHD 1 class ships. An NSSMS Mk 57 Mod 14 system is comprised of the following:

For LHD 1, 3, 5 - (2) Solid State Transmitter (SSTX), (2) Integrated Radar Processors (IRPs), (2) ESSM ORDALTs and (2) System Launcher Controllers (SLCs) are required for each of those ships.

For LHD 2, 4, 6 - These ships already have the SSTX ORDALT installed, so only (2) Integrated Radar Processors (IRPs), (2) ESSM ORDALTs, and (2) System Launcher Controllers (SLCs) are required for each of those ships.
- Launcher Min-Mod to BLK 2 H/W line procures equipment required to support the BLK 2 capability on LHA/LHD/CVN Class ships.

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Navy									Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3				P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment					Modification Number / Title: 1 / NATO SEASPARROW				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: MK 57				Modification Type: NSSMS Mk 57				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 4: Radar Group													
A Kits													
Non-Recurring													
1.1.1) SOLID STATE TRANSMITTER UPGRADE (SSTX) - NonOrganic ⁽²⁴⁾	2 / 4.644	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 4.644	
1.1.2) INTEGRATED RADAR PROCESSOR (IRP) - NonOrganic	2 / 2.149	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 2.149	
1.1.3) TEST SUPPORT - Organic	- / 0.030	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.030	
1.1.4) COTS OBSOLESCENCE - Organic	- / 0.296	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.296	
1.1.5) ECP'S - Organic	- / 0.030	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.030	
Subtotal: Non-Recurring	- / 7.149	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 7.149	
Subtotal: Radar Group	4 / 7.149	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 7.149	
Modification Item 2 of 4: Launcher Group													
B Kits													
Non-Recurring													
2.1.1) ESSM ORDALT - NonOrganic	10 / 2.542	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 2.542	
2.1.2) SYSTEM LAUNCHER/CONTROLLER (SLC) - NonOrganic	10 / 2.148	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 2.148	
2.1.3) TEST SUPPORT - Organic	- / 0.030	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.030	
2.1.4) ECP'S - Organic	- / 0.260	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.260	
2.1.5) Launcher Support - Organic ⁽²⁵⁾	- / 2.940	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 2.940	
2.1.6) Radar Support - Organic ⁽²⁶⁾	- / 1.990	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.990	
Subtotal: Non-Recurring	- / 9.910	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 9.910	
Subtotal: Launcher Group	20 / 9.910	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	20 / 9.910	
Modification Item 3 of 4: Objective Configuration													
A Kits													
Non-Recurring													
3.1.1) Objective Configuration H/W - NonOrganic ⁽²⁷⁾	- / -	2 / 7.500	- / 5.530	- / -	- / -	- / -	1 / 14.898	1 / 16.549	- / -	- / -	- / -	4 / 44.477	
Subtotal: Non-Recurring	- / 0.000	- / 7.500	- / 5.530	- / -	- / -	- / -	- / 14.898	- / 16.549	- / -	- / -	- / 0.000	- / 44.477	
Subtotal: Objective Configuration	- / -	2 / 7.500	- / 5.530	- / -	- / -	- / -	1 / 14.898	1 / 16.549	- / -	- / -	- / -	4 / 44.477	
Modification Item 4 of 4: Launcher Min-Mod to Blk 2													

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3				P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment				Modification Number / Title: 1 / NATO SEASPARROW				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Models of Systems Affected: MK 57			Modification Type: NSSMS Mk 57					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)
A Kits												
Non-Recurring												
4.1.1) Launcher Min-Mod Blk 2 Capability H/W - NonOrganic ⁽²⁸⁾	- / -	- / -	- / -	2 / 4.000	- / -	2 / 4.000	2 / 4.120	2 / 4.244	2 / 4.371	2 / 4.502	- / -	10 / 21.237
Subtotal: Non-Recurring	- / 0.000	- / -	- / -	- / 4.000	- / -	- / 4.000	- / 4.120	- / 4.244	- / 4.371	- / 4.502	- / 0.000	- / 21.237
Subtotal: Launcher Min-Mod to Blk 2	- / -	- / -	- / -	2 / 4.000	- / -	2 / 4.000	2 / 4.120	2 / 4.244	2 / 4.371	2 / 4.502	- / -	10 / 21.237
Subtotal: Procurement, All Modification Items	- / 17.059	- / 7.500	- / 5.530	- / 4.000	- / -	- / 4.000	- / 19.018	- / 20.793	- / 4.371	- / 4.502	- / 0.000	- / 82.773
Support (All Modification Items)												
5.1) Obsolescence ⁽²⁹⁾	- / -	- / -	- / 2.958	- / -	- / -	- / -	- / -	- / -	- / 4.995	- / 4.827	- / -	- / 12.780
6.1) Radar Support	- / 1.900	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.900
7.1) Launcher Support	- / 2.940	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 2.940
Subtotal: Support	- / 4.840	- / -	- / 2.958	- / -	- / -	- / -	- / -	- / -	- / 4.995	- / 4.827	- / 0.000	- / 17.620
Installation												
Modification Item 1 of 4: Radar Group	- / 4.644	- / 0.899	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 5.543
Modification Item 2 of 4: Launcher Group	- / 3.127	- / 1.729	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 4.856
Modification Item 3 of 4: Objective Configuration	- / 0.000	- / 0.000	- / 0.000	- / 8.800	- / 0.000	- / 8.800	- / 0.000	- / 0.000	- / 4.699	- / 4.840	- / 0.000	- / 18.339
Modification Item 4 of 4: Launcher Min-Mod to Blk 2	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 2.000	- / 2.060	- / 2.122	- / 2.185	- / 2.200	- / 10.567
Subtotal: Installation	- / 7.771	- / 2.628	- / -	- / 8.800	- / -	- / 8.800	- / 2.000	- / 2.060	- / 6.821	- / 7.025	- / 2.200	- / 39.305
Total												
Total Cost (Procurement + Support + Installation)	29.670	10.128	8.488	12.800	0.000	12.800	21.018	22.853	16.187	16.354	2.200	139.698

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Navy											Date: March 2019																				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3										P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment										Modification Number / Title: 1 / NATO SEASPARROW											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 4: Radar Group																															
Manufacturer Information																															
Manufacturer Name: Raytheon														Manufacturer Location: Portsmouth, RI																	
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						Aug 2019																									
Delivery Dates						Aug 2022																									
Installation Information																															
Method of Implementation: Alteration Installation Team (AIT):: Installation Name: SOLID STATE TRANSMITTER UPGRADE (SSTX)																															
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)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (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 / 4.644	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 4.644					
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -					
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -					
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -					
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -					
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -					
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -					
FY 2024		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -					
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -					
Total		2 / 4.644	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 4.644					
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
Method of Implementation: Alteration Installation Team (AIT):: Installation Name: Launcher Min-Mod to BLK 2 H/W																															
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)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (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 / 0.899	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 0.899					

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3					P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment					Modification Number / Title: 1 / NATO SEASPARROW																					
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:																					
Modification Item 1 of 4: Radar Group																															
Installation Information																															
Method of Implementation: Alteration Installation Team (AIT):: Installation Name: Launcher Min-Mod to BLK 2 H/W																															
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	- / -	2 / 0.899	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 0.899																			
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	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Navy											Date: March 2019																																		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3											P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment											Modification Number / Title: 1 / NATO SEASPARROW																							
ID Code (A=Service Ready, B=Not Service Ready) :											MDAP/MAIS Code:																																		
Modification Item 2 of 4: Launcher Group																																													
Manufacturer Information																																													
Manufacturer Name: Raytheon													Manufacturer Location: Portsmouth, 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		Aug 2018								Aug 2020																																			
Delivery Dates		Mar 2020								Mar 2022																																			
Installation Information																																													
Method of Implementation: Alteration Installation Team (AIT):: Installation Name: ESSM ORDALT																																													
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		8 / 1.701				2 / 0.920				- / -				- / -				- / -				- / -				- / -				- / -				- / -				0 / 0.000				10 / 2.621			
FY 2018		- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -			
FY 2019		- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -			
FY 2020		- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -			
FY 2021		- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -			
FY 2022		- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -			
FY 2023		- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -			
FY 2024		- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -			
To Complete		- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -			
Total		8 / 1.701				2 / 0.920				- / -				- / -				- / -				- / -				- / -				- / -				- / -				0 / 0.000				10 / 2.621			
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	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10													
Out	8	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10													
Method of Implementation: Alteration Installation Team:: Installation Name: SYSTEM LAUNCHER/CONTROLLER (SLC)																																													
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		8 / 1.426				2 / 0.809				- / -				- / -				- / -				- / -				- / -				- / -				- / -				0 / 0.000				10 / 2.235			

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3										P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment										Modification Number / Title: 1 / NATO SEASPARROW											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 3 of 4: Objective Configuration																															
Installation Information																															
Method of Implementation: ALT:: Installation Name: Objective Configuration H/W																															
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		- / -	- / -	- / -	2 / 8.800	0 / 0.000	2 / 8.800	- / -	- / -	- / -	- / -	0 / 0.000	2 / 8.800																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 4.699	- / -	0 / 0.000	1 / 4.699																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 4.840	0 / 0.000	1 / 4.840																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2024		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		- / -	- / -	- / -	2 / 8.800	0 / 0.000	2 / 8.800	- / -	- / -	1 / 4.699	1 / 4.840	0 / 0.000	4 / 18.339																		
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

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3										P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment										Modification Number / Title: 1 / NATO SEASPARROW											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 4 of 4: Launcher Min-Mod to Blk 2																															
Installation Information																															
Method of Implementation: AIT:: Installation Name: Launcher Min-Mod Blk 2 Capability H/W																															
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		- / -	- / -	- / -	- / -	- / -	- / -	2 / 2.000	- / -	- / -	- / -	0 / 0.000	2 / 2.000																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 2.060	- / -	- / -	0 / 0.000	2 / 2.060																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 2.122	- / -	0 / 0.000	2 / 2.122																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 2.185	0 / 0.000	2 / 2.185																		
FY 2024		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 2.200	2 / 2.200																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		- / -	- / -	- / -	- / -	- / -	- / -	2 / 2.000	2 / 2.060	2 / 2.122	2 / 2.185	2 / 2.200	10 / 10.567																		
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	2	10
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	1	-	-	-	2	1	-	-	-	4	10
Footnotes: ⁽²⁴⁾ Starting in FY 18 a new procurement/upgrade strategy will be used. Contracting for Ordalt kits/equipment Components and refurbishment/upgrade of equipment will no longer be accomplished separately. NSWC PHD will award one contact to deliver a fully upgraded System that includes Ordalt kits/equipment components and refurbishment/upgrade. The Radar Group (1.1.1 - 1.1.5)and Launcher Group (2.1.1 - 2.1.4) costs have been rolled into the 5.1.1 Objective Configuration H/W line. ⁽²⁵⁾ Starting in FY 18 a new procurement/upgrade strategy will be used. Contracting for Ordalt kits/equipment Components and refurbishment/upgrade of equipment will no longer be accomplished separately. NSWC PHD will award one contact to deliver a fully upgraded System that includes Ordalt kits/equipment components and refurbishment/upgrade. This line has been zeroed out. Funding is now part of the Objective Configuration H/W line. ⁽²⁶⁾ Starting in FY 18 a new procurement/upgrade strategy will be used. Contracting for Ordalt kits/equipment Components and refurbishment/upgrade of equipment will no longer be accomplished separately. NSWC PHD will award one contact to deliver a fully upgraded System that includes Ordalt kits/equipment components and refurbishment/upgrade. This line has been zeroed out. Funding is now part of the Objective Configuration H/W line. ⁽²⁷⁾ This lines provides funding to for a full up Objective Configuration System that includes Ordalt kits/equipment components procurement and refurbishment/upgrade.																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment	Modification Number / Title: 1 / NATO SEASPARROW
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
(28) The Missile Launcher Upgrade (MLU) program has been placed on indefinite hold. The solicitation for the launcher upgrade development contract was cancelled because a fair and reasonable price with Raytheon could not be reached; however the requirement to deliver a launcher capable of launching an ESSM Blk 2 still exists. The Launcher Min-Mod to Blk 2 will provide interim capability to launch the ESSM Blk 2 until a new approach is in place. This lines procures hardware required for the Min-Mod upgrade. (29) Funding will be used to address numerous obsolescence issues with the NATO Seasparrow Surface Missile System (NSSMS) that will allow deliver of the Objective Configuration systems to the LHD 3 and LHD 5 in FY 23/24.		

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Exhibit P-3a, Individual Modification: PB 2020 Navy						Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3				P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment				Modification Number / Title: 2 / UR006 RAM MK-49 GMLS ORDALTS			

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)	13.443	3.862	3.688	4.707	0.000	4.707	7.345	6.826	6.065	6.460	77.600	129.996
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	13.443	3.862	3.688	4.707	0.000	4.707	7.345	6.826	6.065	6.460	77.600	129.996
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	13.443	3.862	3.688	4.707	0.000	4.707	7.345	6.826	6.065	6.460	77.600	129.996
(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 Rolling Airframe Missile is a lightweight, quick-reaction, high firepower missile system designed to provide anti-ship missile defense. The system (MK-31 GMWS) is comprised of a MK-44 Guided Missile Round Pack (GMRP) and the MK 49 Guided Missile Launching System (GMLS), which holds 21 RAM missiles. The 21-round launcher is compatible with various platforms, ranging from large USN amphibious assault ships to Littoral Combat Ship (LCS). This system is designed to counter high density anti-ship, cruise missile raids and provide for ship survivability with accurate terminal guidance, proven lethality and no fire control illumination dependence.

Procurement and installation of RAM MK 49 GMLS critical ORDALTS on CVN, LSD, LPD, LHA, LHD and LCS class ships.

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Exhibit P-3a, Individual Modification: PB 2020 Navy								Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3				P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment				Modification Number / Title: 2 / UR006 RAM MK-49 GMLS ORDALTS					
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: MK 49 GMLS			Modification Type: NON-FMP Install					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: UR006 RAM MK-49 GMLS ORDALTS													
B Kits													
Recurring													
1.1.1) UR006 RAM MK-49 GMLS ORDALTS - NonOrganic ⁽³⁰⁾		28 / 9.935	8 / 2.552	1 / 2.000	10 / 4.707	- / -	10 / 4.707	10 / 4.795	10 / 4.890	10 / 5.000	10 / 5.095	104 / 62.400	191 / 101.374
Subtotal: Recurring		- / 9.935	- / 2.552	- / 2.000	- / 4.707	- / -	- / 4.707	- / 4.795	- / 4.890	- / 5.000	- / 5.095	- / 62.400	- / 101.374
Subtotal: UR006 RAM MK-49 GMLS ORDALTS		28 / 9.935	8 / 2.552	1 / 2.000	10 / 4.707	- / -	10 / 4.707	10 / 4.795	10 / 4.890	10 / 5.000	10 / 5.095	104 / 62.400	191 / 101.374
Subtotal: Procurement, All Modification Items		- / 9.935	- / 2.552	- / 2.000	- / 4.707	- / -	- / 4.707	- / 4.795	- / 4.890	- / 5.000	- / 5.095	- / 62.400	- / 101.374
Installation													
Modification Item 1 of 1: UR006 RAM MK-49 GMLS ORDALTS		- / 3.508	- / 1.310	- / 1.688	- / 0.000	- / 0.000	- / 0.000	- / 2.550	- / 1.936	- / 1.065	- / 1.365	- / 15.200	- / 28.622
Subtotal: Installation		- / 3.508	- / 1.310	- / 1.688	- / -	- / -	- / -	- / 2.550	- / 1.936	- / 1.065	- / 1.365	- / 15.200	- / 28.622
Total													
Total Cost (Procurement + Support + Installation)		13.443	3.862	3.688	4.707	0.000	4.707	7.345	6.826	6.065	6.460	77.600	129.996

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Exhibit P-3a, Individual Modification: PB 2020 Navy							Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3				P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment				Modification Number / Title: 2 / UR006 RAM MK-49 GMLS ORDALTS				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Modification Item 1 of 1: UR006 RAM MK-49 GMLS ORDALTS												
Manufacturer Information												
Manufacturer Name: Raytheon Co ⁽³¹⁾							Manufacturer Location: Tucson AZA					
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	Sep 2018											
Delivery Dates	May 2020											
Manufacturer Name: Raytheon Co ⁽³²⁾							Manufacturer Location: Tucson AZA					
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		Apr 2019	Dec 2019	Dec 2020	Dec 2021	Dec 2022	Dec 2023					
Delivery Dates		Apr 2021	Dec 2021	Dec 2022	Dec 2023	Dec 2024	Dec 2025					
Installation Information												
Method of Implementation: NON-FMP Install:: Installation Name: UR006 RAM MK-49 GMLS ORDALTS												
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	13 / 3.508	8 / 1.310	2 / 0.700	- / -	- / -	- / -	- / -	3 / 0.000	2 / 0.000	- / -	0 / 2.050	28 / 7.568
FY 2018	- / -	- / -	8 / 0.988	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	8 / 0.988
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	1 / 2.550	- / -	- / -	- / -	0 / 0.350	1 / 2.900
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 1.936	- / -	- / -	0 / 0.000	10 / 1.936
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 1.065	- / -	0 / 0.200	10 / 1.265
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 1.365	0 / 0.200	10 / 1.565
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 1.000	10 / 1.000
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 1.000	10 / 1.000
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	104 / 10.400	104 / 10.400
Total	13 / 3.508	8 / 1.310	10 / 1.688	- / -	- / -	- / -	1 / 2.550	13 / 1.936	12 / 1.065	10 / 1.365	124 / 15.200	191 / 28.622

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019																													
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment	Modification Number / Title: 2 / UR006 RAM MK-49 GMLS ORDALTS																													
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:																													
Modification Item 1 of 1: UR006 RAM MK-49 GMLS ORDALTS																															
Installation Information																															
Method of Implementation: NON-FMP Install:: Installation Name: UR006 RAM MK-49 GMLS ORDALTS																															
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	13	-	-	8	-	2	-	-	8	-	-	-	-	-	-	1	-	3	-	10	-	2	-	10	-	-	-	10	-	124	191
Out	13	-	-	-	8	-	-	-	10	-	-	-	-	-	-	-	1	-	-	-	13	-	-	-	10	-	-	-	10	126	191

Footnotes:

⁽³⁰⁾ MOD 1 to MOD 3 procurements shown in prior years were procured under BLI 5238 and are being installed under BLI 5231 due to the LSD schedule and rephrasing. FY17-FY18 procurements are for Tech Refresh/Safety/IA ORDALTS to include a MAM kit per ship set. The Tech Refresh launcher ORDALTS are required to field RAM BLK 2A capabilities for increased performance in a raid environment while also addressing obsolescence. The FY20-FY24 procurements are for the RAM Blk 2B Firepower ORDALTS. These ORDALTS are required to field RAM BLK 2B raid ECP capabilities to meet self defense PRA requirements against evolving threat raid scenarios. FY19 includes one MOD 1 to MOD 3 ORDALT procurement at a unit cost of \$2M. The LSMU kits, which support current fleet configurations, include new displays, power supplies and other hardware which facilitates our ability to fully utilize future RAM configurations (Block 2A/2B). The MOD 1 to MOD 3 Launcher ORDALT kit is a stand-alone procurement and reflects an increased cost, compared to previous bundled ORDALT kit procurements. Installation costs are associated with Mod 1 to Mod 3 ORDALT installs, Tech Refresh/Safety/IA ORDALT and Firepower ORDALT installations. Installs noted below reflect ship sets (QTY 2 per ship): FY18: 4 Ships Tech Refresh/Safety/IA ORDALT Installs; FY19: 1 MOD 1 to MOD 3 ORDALT install and 4 Ships Tech Refresh/Safety/IA ORDALT Installs; FY21: 6 RAM Blk 2B Firepower ORDALT Installs FY22: 2 MOD 1 to MOD 3 ORDALT Install and 5 RAM Blk 2B Firepower ORDALT Installs FY23: 1 MOD 1 to MOD 3 ORDALT Installs and 5 RAM Blk 2B Firepower ORDALT Installs FY24: 5 RAM Blk 2B Firepower ORDALT Installs

⁽³¹⁾ Tech Refresh/Safety/IA ORDALTS

⁽³²⁾ RAM Blk 2B Firepower ORDALTS and MOD 1 to MOD 3 ORDALTS

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Exhibit P-3a, Individual Modification: PB 2020 Navy							Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3				P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment				Modification Number / Title: 3 / UQ005B - SSDS COTS CONVERSION 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)	105.615	57.253	75.565	71.866	0.000	71.866	70.352	71.176	66.800	76.678	31.406	626.711
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	105.615	57.253	75.565	71.866	0.000	71.866	70.352	71.176	66.800	76.678	31.406	626.711
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	105.615	57.253	75.565	71.866	0.000	71.866	70.352	71.176	66.800	76.678	31.406	626.711
(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:												
FY18-FY24 includes the procurement of COTS Conversion Kits for CVNs, LPDs, LHDs, LHAs and LSDs, as well as COTS Upgrade Kits / field changes for the shore sites used for SSDS software development/ maintenance, training, and Combat System integration and certification testing. SSDS procurement also includes various Commercial Off The Shelf (COTS) based systems and equipment used within the integrated combat system. The COTS conversion kits will replace obsolete COTS hardware and will support the integration of new CS elements and capabilities. FY13-FY18 kits are based on a Technology Insertion - 12 (TI-12) and Technology Insertion - 12 Hybrid (TI-12H) configurations. FY16-FY21 transitions to the TI-16 configuration with procurement for shore sites starting in FY16 and procurement for ships starting in FY18. FY20-25 transitions to TI-22. The budget cost estimates for the procurement and installation of the kits varies depending on the specific ship class (CVNs, LPDs, LSDs, LHAs, and LHDs), and the existing configuration of the ship or shore site.												
[UQ5IN FMP SHIP UNITS] The costs for each kit is listed below. SSDS kit funding is provided to various contractors and field activities. The SSDS equipment procurement is based on competitive contracts. Production lead time for kits ranges from12 months (for equipment COTS upgrade kits/field changes) up to 24 months for system COTS conversion kits for ships and shore sites.												
The non-FMP kits are required for SSDS/CS shore sites: The SSDS MK 2 System/Software Platform System Engineering Agent; Combat System Engineering Agent; SCSC Wallops Island; CS Integration/ Engineering test facility; NSWC Dahlgren CS software certification facility; and crew SSDS maintenance training facilities. Each of these facilities require equipment to support the in-service ship configurations, and to support the new configuration baselines in development. The SSDS OPN UQ005 supports field changes to the in-service baselines, and the establishment of new baseline configurations at the shore sites. The cost for the kits varies significantly depending on the site, its existing configuration, and mission of the site.												
The FY18 procurement includes TI-16 equipment for SCSC Wallops Island for Combat System Integration Testing; and includes the TI-16 equipment for the Design Agent System Integration Lab; and the procurement of TI-16 equipment for the competitive CSEA contract for the development of the SSDS MK2 ACB-20 baseline.												
The FY19 procurement includes TI-16 equipment for Maintenance Trainer, and ICSTF, in support of Combat System certification tests.												
SSDS FY18 unit costs are: \$ 8,346K for (1) LPD COTS Conversion Kits (TI-12H) for LPD23 \$ 10,774K for (1) CVN COTS Conversion Kit (TI-12H) for CVN 70 \$ 8,988K for (1) Design Agent COTS Upgrade Kit (TI-16 - GFE for Design Agent/CSEA competitive contract) \$ 7,776K for (1) Wallops Island COTS Upgrade Kit (TI-16) for CS Integration Testing												

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment	Modification Number / Title: 3 / UQ005B - SSDS COTS CONVERSION KITS
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
\$ 5,312K for (1) CDSA DN Maintenance Trainer (TI-12H Field Changes) \$ 555K for Cyber Security Total Cost for 5 units in FY18 (UQ005B) is \$41,751K ----- SSDS FY19 unit costs are: \$ 18,486K for (2) LPD COTS Conversion Kits (TI-16) for LPD17 and LPD19 \$ 13,097K for (1) LHD COTS Conversion Kit (TI-16) for LHD4 \$ 8,583K for (1) CDSA DN Maintenance Trainer (TI-16) \$ 5,618K for Cyber Security Total Cost for 4 units in FY19 (UQ005B) is \$45,784K ----- SSDS FY20 unit costs are: \$ 7,334K for (1) LPD COTS Conversion Kit (TI-16) for LPD 22 \$ 9,413K for (1) LHD COTS Conversion Kits (TI-16) for LHD 7 \$ 6,752K for (1) LSD COTS Conversion Kit (TI-16) for LSD 41 \$ 9,792K for (1) CVN COTS Conversion Kit (TI-16) for CVN 71 \$ 8,977K for (1) ICSTF, (TI-16) \$ 5,620K for Cyber Security Total Cost for 5 units in FY20 (UQ005B) is \$47,888K ----- SSDS Ship Installation Costs in FY18 (total \$12,962K) include: \$ 7,558K for AIT/DSA for installation of (1) LHD Kit (TI-12H) in LHD6 \$ 2,000K for AIT/DSA for installation of (1) CVN Kit in CVN78 (Various Field Changes) \$ 3,404K for Advanced Planning/DSA for CVN70, LHD4, LPD17, LPD23 ----- SSDS Ship Installation Costs in FY19 (total \$27,381K) include: \$ 4,326K for AIT/DSA for installation of (1) LPD Kit (TI-12H) in LPD 23 \$ 5,015K for AIT/DSA for installation of (1) LSD Kit (TI-12H) with SS removal in LSD47 \$ 12,300K for AIT/DSA for installation of (1) CVN Kit (TI-12H) in CVN 70 \$ 5,740K for Advanced Planning/DSA for LHD4, LPD17, LPD19, LHD7, CVN71 -----		

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment	Modification Number / Title: 3 / UQ005B - SSDS COTS CONVERSION KITS
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
SSDS Ship Installation Costs in FY20 (total \$17,740K) include: \$ 5,740K for AIT/DSA for installation of (1) LHD Kit (TI-16) LHD4 \$ 6,206K for AIT/DSA for installation of (1) LPD Kit (TI-16) in LPD17 \$ 5,794K for Advanced Planning/DSA for LHD3, LPD22, LPD19, LPD 21, LHD7, LSD 41, CVN71		

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3				P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment						Modification Number / Title: 3 / UQ005B - SSDS COTS CONVERSION KITS			
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: UQ005B - SSDS COTS CONVERSION KITS</i>													
<i>B Kits</i>													
<i>Recurring</i>													
1.1.1) UQ5IN FMP SHIP UNITS - NonOrganic	7 / 26.135	2 / 19.120	3 / 31.583	4 / 33.291	- / -	4 / 33.291	2 / 18.903	2 / 21.318	4 / 35.021	4 / 36.019	- / -	28 / 221.390	
1.1.2) UQ6IN NON FMP SHORE SITES - NonOrganic (33)	11 / 42.761	3 / 22.631	1 / 14.201	1 / 19.510	- / -	1 / 19.510	2 / 15.334	4 / 19.724	2 / 9.109	1 / 7.033	- / -	25 / 150.303	
<i>Subtotal: Recurring</i>	- / 68.896	- / 41.751	- / 45.784	- / 52.801	- / -	- / 52.801	- / 34.237	- / 41.042	- / 44.130	- / 43.052	- / 0.000	- / 371.693	
<i>Subtotal: UQ005B - SSDS COTS CONVERSION KITS</i>	18 / 68.896	5 / 41.751	4 / 45.784	5 / 52.801	- / -	5 / 52.801	4 / 34.237	6 / 41.042	6 / 44.130	5 / 43.052	- / -	53 / 371.693	
<i>Subtotal: Procurement, All Modification Items</i>	- / 68.896	- / 41.751	- / 45.784	- / 52.801	- / -	- / 52.801	- / 34.237	- / 41.042	- / 44.130	- / 43.052	- / 0.000	- / 371.693	
Installation													
<i>Modification Item 1 of 1: UQ005B - SSDS COTS CONVERSION KITS</i>	- / 36.719	- / 15.502	- / 29.781	- / 19.065	- / 0.000	- / 19.065	- / 36.115	- / 30.134	- / 22.670	- / 33.626	- / 31.406	- / 255.018	
<i>Subtotal: Installation</i>	- / 36.719	- / 15.502	- / 29.781	- / 19.065	- / -	- / 19.065	- / 36.115	- / 30.134	- / 22.670	- / 33.626	- / 31.406	- / 255.018	
Total													
Total Cost (Procurement + Support + Installation)	105.615	57.253	75.565	71.866	0.000	71.866	70.352	71.176	66.800	76.678	31.406	626.711	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3										P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment										Modification Number / Title: 3 / UQ005B - SSDS COTS CONVERSION KITS											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: UQ005B - SSDS COTS CONVERSION KITS																															
Manufacturer Information																															
Manufacturer Name: TBD (Competitive Procurement)															Manufacturer Location: TBD (Competitive Procurement)																
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		Jan 2018				Jan 2019				Jan 2020				Jan 2021				Jan 2022				Jan 2023				Jan 2024					
Delivery Dates		Mar 2019				Jan 2020				Feb 2021				Jan 2022				Jun 2023				Jan 2024				Jan 2025					
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: UQ5IN FMP SHIP UNITS - INSTALLATION																															
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 / 30.960		2 / 9.558		0 / 5.015		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		7 / 45.533							
FY 2018		- / -		0 / 1.872		2 / 16.626		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 18.498							
FY 2019		- / -		0 / 1.532		0 / 4.060		2 / 12.665		0 / 0.000		2 / 12.665		1 / 6.311		- / -		- / -		- / -		0 / 0.000		3 / 24.568							
FY 2020		- / -		- / -		0 / 1.680		0 / 2.693		0 / 0.000		0 / 2.693		3 / 21.754		1 / 7.293		- / -		- / -		0 / 0.000		4 / 33.420							
FY 2021		- / -		- / -		- / -		0 / 2.382		0 / 0.000		0 / 2.382		0 / 3.678		2 / 12.409		- / -		- / -		0 / 0.000		2 / 18.469							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		0 / 2.422		0 / 3.970		2 / 14.251		- / -		0 / 0.000		2 / 20.643							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 3.214		0 / 1.635		4 / 30.115		0 / 0.000		4 / 34.964							
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 3.269		0 / 1.661		4 / 30.606		4 / 35.536							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		5 / 30.960		2 / 12.962		2 / 27.381		2 / 17.740		0 / 0.000		2 / 17.740		4 / 34.165		3 / 26.886		2 / 19.155		4 / 31.776		4 / 30.606		28 / 231.631							
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	1	2	1	1	-	1	-	-	1	1	-	2	-	2	4	28
Out	5	-	-	-	2	-	-	-	2	-	-	1	1	-	-	2	2	1	-	1	1	-	-	-	2	-	-	2	2	4	28

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment	Modification Number / Title: 3 / UQ005B - SSDS COTS CONVERSION KITS

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Modification Item 1 of 1: UQ005B - SSDS COTS CONVERSION KITS

Installation Information

Method of Implementation: Method:: Installation Name: UQ6IN NON FMP SHORE SITES - INSTALLATION

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	7 / 5.759	4 / 1.250	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	11 / 7.009
FY 2018	- / -	0 / 1.290	3 / 1.900	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 3.190
FY 2019	- / -	- / -	0 / 0.500	1 / 0.700	0 / 0.000	1 / 0.700	- / -	- / -	- / -	- / -	0 / 0.000	1 / 1.200
FY 2020	- / -	- / -	- / -	0 / 0.625	0 / 0.000	0 / 0.625	1 / 0.750	- / -	- / -	- / -	0 / 0.000	1 / 1.375
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	0 / 1.200	2 / 1.600	- / -	- / -	0 / 0.000	2 / 2.800
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 1.648	4 / 2.540	- / -	0 / 0.000	4 / 4.188
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.975	2 / 1.300	0 / 0.000	2 / 2.275
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.550	1 / 0.800	1 / 1.350
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	7 / 5.759	4 / 2.540	3 / 2.400	1 / 1.325	0 / 0.000	1 / 1.325	1 / 1.950	2 / 3.248	4 / 3.515	2 / 1.850	1 / 0.800	25 / 23.387

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	7	-	-	-	4	-	-	1	2	-	-	-	1	-	-	-	1	-	-	-	2	-	-	2	2	-	-	-	2	1	25
Out	7	-	-	-	4	-	-	1	2	-	-	-	1	-	-	-	1	-	-	-	2	-	-	2	2	-	-	-	2	1	25

Footnotes:

⁽³³⁾ Starting in FY18 The SSDS Program Office added Cyber Security Funds to the budget under UQ6IN Non FMP Shore Sites. Of these funds, \$5.62M for Cyber Security are to procure components in support of implementing, testing, and certifying a Cyber Security capability at SSDS Shore Sites. The rest of the UQ6IN funds in FY20 (\$13,890K) are to start procuring TI-16 Equipment for CSEA, Wallops Island (Testing), Dam Neck (Trainer), and Integrated Combat Systems Test Facility.

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment	Modification Number / Title: 4 / VV001 NULKA 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)	24.966	13.033	8.455	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	46.455
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	24.966	13.033	8.455	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	46.455
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	24.966	13.033	8.455	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	46.455
(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:

Funds the procurement and installation of the MK53 Nulka Decoy Launching System (DLS). The MK 53 DLS consists of a Decoy Launch Processer (DLP), launching power supplies and from two to six launchers depending on the ship class. Each launcher is capable of storing and launching two Nulka decoys. The MK 53 DLS provides the launch authorization and flight demands to the Nulka decoy when a Nulka engagement is initiated by the EW operator. The MK 53 DLS has been installed on the CG 47, DDG 51, FFG 7, LSD 41, and LSD 49 Classes in prior years. Installation of the MK 53 DLS on CVNs began in FY14 and it will be installed on eight carriers. The first DLS for CVNs was procured under the previous OPN budget (BLI 5530). Six of the final seven are being procured under this budget. Funding is being realigned to BLI 5530 starting in FY20. The last DLS will be procured under BLI 5530.

DLS Installation costs increase for CVN 71 in FY18 was due to significantly higher than estimated labor, material, and shipyard support services costs, as well as increased overtime needed to meet 188-day availability.

A MK53 Decoy Launching System procurement was previously planned for CVN 74 in FY19. CVN 74 is now planned for an Refueling and Complex Overhaul (RCOH) SCN period of availability. Funding planned for the CVN 74 procurement and installation has been re-aligned to cover carrier installation funding shortfalls. Carrier installation costs are higher than originally estimated due to location of installations, and labor and material cost increases.

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LI 5231 - Ship Missile Support Equipment
Navy

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3					P-1 Line Item Number / Title: 5231 / Ship Missile Support Equipment										Modification Number / Title: 4 / VV001 NULKA SYSTEMS																
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:																					
Modification Item 1 of 1: VV001 NULKA SYSTEMS																															
Manufacturer Information																															
Manufacturer Name: SECHAN										Manufacturer Location: LITITZ, PA																					
Administrative Leadtime (in Months): 6										Production Leadtime (in Months): 14																					
Dates		FY 2018			FY 2019			FY 2020			FY 2021			FY 2022			FY 2023			FY 2024											
Contract Dates		May 2018																													
Delivery Dates		Jul 2019																													
Installation Information																															
Method of Implementation: AIT:: Installation Name: NULKA 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		4 / 21.959		1 / 11.367		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		5 / 33.326							
FY 2018		0 / 0.179		0 / 0.392		1 / 8.455		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		1 / 9.026							
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		4 / 22.138		1 / 11.759		1 / 8.455		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		6 / 42.352					
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	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
Out	3	-	-	-	-	-	-	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 04: Ordnance Support Equipment / BSA 3: Ship Missile Systems Equipment							P-1 Line Item Number / Title: 5253 / Tomahawk Support 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: 289												
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>)	680.115	73.184	86.045	78.593	0.000	78.593	95.438	108.493	86.741	85.304	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	680.115	73.184	86.045	78.593	0.000	78.593	95.438	108.493	86.741	85.304	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	680.115	73.184	86.045	78.593	0.000	78.593	95.438	108.493	86.741	85.304	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>)	-	0.311	0.365	0.069	-	0.069	0.180	0.199	0.219	0.223	Continuing	Continuing
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Theater Mission Planning Center (TMPC) consists of Commercial and Government Off-The-Shelf (COTS/GOTS) software and COTS hardware. TMPC is the mission planning segment of the Tomahawk Weapon System (TWS) that provides subsystems for the precision targeting, route planning, mission distribution, and strike management of Tomahawk cruise missile missions from sites located ashore and afloat. TMPC optimizes all aspects of the Tomahawk missile mission to successfully engage a target. TMPC has evolved into 4 scalable configurations deployed at 189 sites: Cruise Missile Support Activities (CMSAs) (3), Tomahawk Strike Mission Planning Cells (TSMPCs) (3), Carrier Strike Groups (CSGs) (19 - 10 CVN), and Firing Units (FRUs) (145 - 88 Surface / 57 Subsurface). Additionally, TMPC is installed in labs (6) and training classrooms (13) that contain various combinations of the four configurations.

Continuous TMPC software updates decreases mission planning time and increases the quality and accuracy of each mission while reducing complexity. TMPC provides mission planning at the theater and operational levels and is designed for high rate mission planning production responsive to national strategic, operational, and tactical requirements. TMPC produces and distributes missions; provides command information services; provides strike planning, execution, coordination, control and reporting, and provides Maritime Component Commanders (MCC) the capability to plan or modify conventional TWS missions. TMPC supports major joint combat operations and Overseas Contingency Operations. TMPC was previously referred to as Tomahawk Command and Control System (TC2S).

Funds provide for systems engineering, testing, Independent Verification & Validation (IV&V), security accreditation, installation, site acceptance testing, user familiarization of products, and hardware. Also, this funding line provides for COTS refreshment, engineering changes, software upgrades, cyber-security modernization, and associated Nuclear Powered General Purpose Attack Submarine/Guided Missile Destroyer/Guided Missile Cruiser/Nuclear Aircraft Carrier (SSNs/DDGs/CGs/CVN) logistics and infrastructure to maintain compatibility and interoperability with existing and future TMPC system configurations.

Surface and Submarine Tactical Tomahawk Weapon Control System (TTWCS) is a post milestone III program executing its first major tech refresh since its 2004 IOC. This refresh resolves processor, display console, equipment rack and software obsolescence issues. The updated TTWCS version was released in FY 2017, but hardware and software must be procured and delivered throughout the next several years to promulgate it across the entire fleet, FRUs (145 - 88 Surface / 57 Subsurface), labs (6), and initial training classrooms (2). Advanced TTWCS functions include: tasking validation (missile mission matching), planning of over the water routes, initialization, preparation and launch of BLK III/IV missiles, TTWCS reduced response time and increased operational flexibility through addition of Launch Platform Mission Planning (LPMP), C4I Web services interfaces, and in-flight monitoring and control of Blk IV missiles. In addition, funds provided to continue TTWCS viability in TTWCS v5.6 and ensure compliance with cyber security mandates, continue to address hardware obsolescence through periodic COTS hardware refresh and periodically refresh of GOTS software to address obsolescence, support migration from 32 bit to 64 bit architecture and migrate away from legacy Ada code. Finally, it will allow reduction of system complexity and incorporation of critical software fixes. Program options are being identified that will enable TWS integration into future platforms. Included in those options will be changes necessary for TTWCS to ensure required functionality as the missile is modernized beginning in FY 2020.

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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 04: Ordnance Support Equipment / BSA 3: Ship Missile Systems Equipment						P-1 Line Item Number / Title: 5253 / Tomahawk Support 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: 289										
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 / 525300, TOMAHAWK Support Equipment				- / 680.115	- / 73.184	- / 86.045	- / 78.593	- / 0.000	- / 78.593
P-40	Total Gross/Weapon System Cost				- / 680.115	- / 73.184	- / 86.045	- / 78.593	- / 0.000	- / 78.593
*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 is required to continue fielding TTWCS hardware/software obsolescence updates. Funds also provide for integration, modernization and interoperability efforts necessary to keep pace with changes, retain capability and exploit capabilities of internal (TWS All-Up-Round missile and TTWCS) and external (Modernized Integrated Data Base (MIDB)), National Geospatial Intelligence Agency (NGA) products, Distributed Common Ground Systems (DCGS) Integrated Backbone (DIB) compliance, Future Imagery Architecture (FIA) imagery formats and Intelligence Surveillance & Reconnaissance (ISR) interfaces, Network Centric Enterprise Services (NCES), Global Information Grid/Internet Protocol (GIG/IP) (V)6, FORCEnet compliance systems/interfaces to the effectiveness of the TWS, into TMPC deployed configurations. Funding supporting TTWCS is appropriately phased to complete the 1st major tech refresh since IOC in 2004. TTWCS relies on COTS hardware that requires a constant and predictive upgrade path to meet cyber security mandates, ensure continued vendor supportability, avoid costly retrofits of fielded systems, and ensure interoperability between tightly coupled COTS software applications, operating systems, and hardware processing nodes. Consequently, increased product improvement resources are required to comply with commercial hardware/software supportability mandates, obsolescence, and information assurance requirements to maintain pace with modern computing architectures.

FY 2020 funding is required to continue the upgrade of unsupportable and obsolete TMPC hardware and software, to ensure compliance with DoD cyber-security mandates, to continue fielding of TMPC 5.0.2 to 189 sites, and to continue navigation and communications improvements required to support the TWS Modernization program via TMPC 6.0. FY 2020 supports TMPC 5.0.2 installation of both hardware and software required for upgrading the Microsoft Operating System from Windows 7 to Windows 10 to ensure continued interrupted Tomahawk Weapon System capability beyond Windows 7 end of life in 2020. FY 2020 also supports hardware and software procurements and installation for TMPC 6.0 IOC. FY 2020 decrease in funds from FY2019 is primarily the result of a partially funded unique hardware buy in FY 2019 to support anti-tamper capability for the Tomahawk Planning System (TPS) component of the TMPC required to protect Critical Program Information. Integration is planned for the period FY 2019 - FY 2021. This anti-tamper capability will permit implementation of advanced capabilities of the Tomahawk Modernization program with needed anti-tamper safeguards.

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3						P-1 Line Item Number / Title: 5253 / Tomahawk Support Equipment						Item Number / Title [DODIC]: 1 / 525300, TOMAHAWK Support 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				
Procurement Quantity (Units in Each)				-		-		-		-		-		-				
Gross/Weapon System Cost (\$ in Millions)				680.115		73.184		86.045		78.593		0.000		78.593				
Less PY Advance Procurement (\$ in Millions)				-		-		-		-		-		-				
Net Procurement (P-1) (\$ in Millions)				680.115		73.184		86.045		78.593		0.000		78.593				
Plus CY Advance Procurement (\$ in Millions)				-		-		-		-		-		-				
Total Obligation Authority (\$ in Millions)				680.115		73.184		86.045		78.593		0.000		78.593				
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																		
Initial Spares (\$ in Millions)				-		0.311		0.365		0.069		-		0.069				
Gross/Weapon System Unit Cost (\$ in Dollars)				-		-		-		-		-		-				
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 - TTWCS Cost																		
Recurring Cost																		
1.1.1) Tactical Tomahawk Weapon Control System (TTWCS) Hardware ⁽¹⁾	-	-	15.930	-	-	1.549	-	-	1.560	-	-	1.588	-	-	-	-	-	1.588
Subtotal: Recurring Cost	-	-	15.930	-	-	1.549	-	-	1.560	-	-	1.588	-	-	-	-	-	1.588
Subtotal: Hardware - TTWCS Cost	-	-	15.930	-	-	1.549	-	-	1.560	-	-	1.588	-	-	-	-	-	1.588
Hardware - HARDWARE RECURRING SUPPORT - TTWCS Cost																		
Recurring Cost																		
2.1.1) TTWCS Product Improvement ⁽²⁾	-	-	148.772	-	-	18.469	-	-	19.891	-	-	20.004	-	-	-	-	-	20.004
Subtotal: Recurring Cost	-	-	148.772	-	-	18.469	-	-	19.891	-	-	20.004	-	-	-	-	-	20.004
Subtotal: Hardware - HARDWARE RECURRING SUPPORT - TTWCS Cost	-	-	148.772	-	-	18.469	-	-	19.891	-	-	20.004	-	-	-	-	-	20.004
Hardware - TMPC Cost																		
Recurring Cost																		
3.1.1) Tomahawk Mission Planning Center (TMPC) Hardware ⁽³⁾	-	-	24.735	-	-	3.128	-	-	9.684	-	-	3.049	-	-	-	-	-	3.049
Subtotal: Recurring Cost	-	-	24.735	-	-	3.128	-	-	9.684	-	-	3.049	-	-	-	-	-	3.049

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3						P-1 Line Item Number / Title: 5253 / Tomahawk Support Equipment						Item Number / Title [DODIC]: 1 / 525300, TOMAHAWK Support Equipment						
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)
Subtotal: Hardware - TMPC Cost	-	-	24.735	-	-	3.128	-	-	9.684	-	-	3.049	-	-	-	-	-	3.049
Software - PRODUCT IMPROVEMENTS - TMPC Cost																		
Recurring Cost																		
4.1.1) TMPC Product Improvements ⁽⁴⁾	-	-	161.176	-	-	17.196	-	-	20.123	-	-	21.240	-	-	-	-	-	21.240
Subtotal: Recurring Cost	-	-	161.176	-	-	17.196	-	-	20.123	-	-	21.240	-	-	-	-	-	21.240
Subtotal: Software - PRODUCT IMPROVEMENTS - TMPC Cost	-	-	161.176	-	-	17.196	-	-	20.123	-	-	21.240	-	-	-	-	-	21.240
Support - Support - TTWCS Cost																		
5.1) TTWCS Production Engineering ⁽⁵⁾	-	-	24.179	-	-	1.059	-	-	0.976	-	-	0.901	-	-	-	-	-	0.901
5.2) TTWCS Integrated Logistic Support ⁽⁶⁾	-	-	109.651	-	-	12.442	-	-	11.699	-	-	9.300	-	-	-	-	-	9.300
Subtotal: Support - Support - TTWCS Cost	-	-	133.830	-	-	13.501	-	-	12.675	-	-	10.201	-	-	-	-	-	10.201
Support - TMPC Cost																		
6.1) TMPC Production Engineering ⁽⁷⁾	-	-	41.037	-	-	4.064	-	-	4.440	-	-	4.510	-	-	-	-	-	4.510
6.2) TMPC Production Support ⁽⁸⁾	-	-	38.538	-	-	3.504	-	-	4.218	-	-	4.225	-	-	-	-	-	4.225
6.3) TMPC Integrated Logistic Support ⁽⁹⁾	-	-	92.069	-	-	11.773	-	-	13.454	-	-	13.776	-	-	-	-	-	13.776
Subtotal: Support - TMPC Cost	-	-	171.644	-	-	19.341	-	-	22.112	-	-	22.511	-	-	-	-	-	22.511
Support - ILS INSTALLATIONS Cost																		
7.1) FMP Installations	-	-	15.139	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - ILS INSTALLATIONS Cost	-	-	15.139	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Support - Miscellaneous Cost																		
8.1) TTWCS Other Cost	-	-	8.889	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - Miscellaneous Cost	-	-	8.889	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	680.115	-	-	73.184	-	-	86.045	-	-	78.593	-	-	0.000	-	-	78.593

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Exhibit P-5, Cost Analysis: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 3	P-1 Line Item Number / Title: 5253 / Tomahawk Support Equipment	Item Number / Title [DODIC]: 1 / 525300, TOMAHAWK Support Equipment
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
Footnotes: ⁽¹⁾ TTWCS Hardware funds are required to address hardware obsolescence through periodic COTS hardware refresh. ⁽²⁾ TTWCS relies on COTS hardware that require constant and predictive upgrade path to meet cyber security mandates, ensure continued vendor supportability, avoid costly retrofits of fielded systems, and ensure interoperability between tightly coupled COTS software applications, operating systems, and hardware processing nodes. Consequently, increased product improvement resources are required commencing in FY 2017 and continuing through FY 2020 to comply with evolving security compliance requirements that necessitate a more frequent update cycle to combat obsolescence and adhere to commercial hardware/software supportability mandates to maintain pace with modern computing architectures. ⁽³⁾ Procures hardware and software for installations of system upgrades at all U.S. TMPC sites. This also includes hardware and software for the system developers. FY 2020 procures the hardware and software for the continued installation of TMPC 5.0.2 onboard Firing Units Guided Missile Destroyers, Guided Missile Cruisers and Nuclear Powered General Purpose Attack Submarines (DDGs/CGs/SSNs), Command Staffs, laboratories, and training sites. FY 2020 also supports hardware and software procurements and installation for TMPC 6.0 IOC. FY 2020 decrease from FY 2019 levels is the result of a unique hardware buy in FY 2019 to support anti-tamper capability for the Tomahawk Planning System (TPS) component of the TMPC required to protect Critical Program Information. Completion of this unique hardware procurement will be executed FY 2020 using a qualified manufacturer. Integration is planned for the period FY 2019 - FY 2021. This anti-tamper capability will permit implementation of advanced capabilities of the Tomahawk Modernization program with needed anti-tamper safeguards. ⁽⁴⁾ Provides for software engineering efforts associated with the delivery of system modernization and improvements by the prime developers to continue the upgrade of unsupportable and obsolete TMPC hardware and software and to ensure compliance with DoD cyber security mandates. In FY 2020, this line continues the upgrades to the TMPC Enterprise Network (TEN 2.0) to improve the distribution of electronic software distribution / propagation, enable remote assistance/troubleshooting, provide enhanced configuration management visibility, and provide cost effective means to deploy cyber-security patches and settings expeditiously. FY 2020 also funds software system upgrades for the submarine community to address system interfaces and upgrades to support the TMPC system usability improvements necessary for fleet operators to effectively execute large and complex TLAM operations as required by US Fleet Forces Command (USFFFC). ⁽⁵⁾ Decrease in production engineering from FY 2019 to FY 2020 is associated with the cost of fabrication of ship sets supporting TTWCS v5.4.0.2 upgrades. ⁽⁶⁾ TTWCS Integrated Logistics Support required for Surface/Submarine installations onboard firing units. FY 2020 funding decrease associated with surface and submarine platform TTWCS update schedules. ⁽⁷⁾ Provides systems engineering support for system design and definition of requirements necessary to evaluate all functional aspects of the TMPC subsystems and workflows that directly impact strike & execution and mission planning products. It includes reviewing TWS and external interfaces for impacts resulting from design upgrades/changes within TWS and by external organizations, Independent Verification & Validation (IV&V), and security accreditation activities. ⁽⁸⁾ Funds activities that directly support system upgrades requirements such as user events, requirements validation, systems engineering technical reviews, software formal qualification testing, and delta training documentation. ⁽⁹⁾ Funds installation support associated with the deployment of new TMPC system upgrades to all U.S. TMPC sites. FY 2020 funds the installation of TMPC 5.0.2 onboard Firing Units Guided Missile Destroyer, Guided Missile Cruiser and Nuclear Attack Submarine (DDGs/CGs/SSNs), Command Staffs, laboratories, and training classrooms. FY 2020 funding supports TMPC 5.0.2 installation of both hardware and software required for upgrading the Microsoft Operating System from Windows 7 to Windows 10 to ensure continued uninterrupted Tomahawk Weapon System capability beyond Windows 7 end of life in 2020. FY 2020 also supports hardware and software procurements and installation for TMPC 6.0 IOC. Integration of the Anti-Tamper capability is planned for the period FY 2020 - FY 2021. This anti-tamper capability will permit implementation of advanced capabilities of Tomahawk Modernization program with needed anti-tamper safeguards.		

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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 04: Ordnance Support Equipment / BSA 4: FBM Support Equipment							P-1 Line Item Number / Title: 5358 / Strategic Missile Systems Equip					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: 0603561N, 0603595N, 0603570N, 0901211N, 0805376N, 0101228N				
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>)	1,395.019	238.675	256.817	280.510	0.000	280.510	241.396	254.053	259.020	264.201	-	3,189.691
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,395.019	238.675	256.817	280.510	0.000	280.510	241.396	254.053	259.020	264.201	-	3,189.691
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1,395.019	238.675	256.817	280.510	0.000	280.510	241.396	254.053	259.020	264.201	-	3,189.691
<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: This budget provides for the procurement of Strategic Weapons System (SWS) equipment for deployed ballistic missile submarines (SSBNs) and shore support sites to support the TRIDENT II (D5) program. Included are shipboard subsystem equipment modernization and technical refresh efforts associated with the TRIDENT II (D5) life extension program. TRIDENT II SSBN hull life has been extended, therefore extending system life to FY 2042. OTHER MATERIAL SUPPORT A broad range of other material support equipment must be procured for deployed SSBNs, shore installations and contractor facilities. Included within this category are general and special purpose test equipment, launcher expendables, navigation principal items, test instrumentation in support of missile flight tests, and missile checkout equipment. ALTERATIONS Alterations to non-flying tactical hardware are continuing requirements for the SWS. Requirements primarily relate to shipboard investments in Commercial-off-the-Shelf/Non-Developmental Items (COTS/NDI) SWS subsystem equipment, including periodic refresh cycles, to ensure continued reliable performance of the weapon system for its extended service life to match the OHIO Class life extension. Strategic Programs Alterations (SPALTs) also entail the application of available technology to eliminate personnel safety hazards, correct design deficiencies, maintain system effectiveness by resolving equipment operability problems, achieve logistic economies, and provide for shipboard subsystem D5 life extension modernization efforts. Funds are required to procure alterations to the SWS launcher and fire control subsystems; to inertial, non-inertial, and ESGN navigation subsystem equipment on deployed SSBNs and installed at supporting shore facilities, including the TRIDENT Training Facility (TTF), Bangor, TTF, Kings Bay, the Ashore Navigation Center, and the Inertial System Test Laboratory; to test instrumentation used on SSBNs, support ships and at the Eastern Test Range, the TRIDENT Refit Facility (TRF), Bangor, and TRF, Kings Bay; and to missile handling equipment, missile test and readiness equipment, and surface support equipment. Installation of approved SPALTs is performed on a turnkey basis in conjunction with the procurement of equipment. Use of COTS/NDI has been initiated and is being implemented in all subsystems, wherever possible. The majority of the Alterations funding supports the Shipboard System Integration (SSI) program which utilizes a COTS based strategy that integrates common electronics (from Fire Control, Launcher, Navigation and Shipboard Data Recording Systems) into the fire control sub-system as well as refreshing inertial systems in order to ensure the TRIDENT II (D5) weapon system can be sustained to FY 2042 in support of OHIO Class SSBNs. Below is a description of each SSI Increment (Inc):												

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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 04: Ordnance Support Equipment / BSA 4: FBM Support Equipment		P-1 Line Item Number / Title: 5358 / Strategic Missile Systems Equip
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0603561N, 0603595N, 0603570N, 0901211N, 0805376N, 0101228N
Line Item MDAP/MAIS Code: N/A		
SSI Inc 1: Provide subsystems integration into the MOD 6/7 Tech Refresh for the Fire Control System (FCS) leaving the missile and guidance system interface unchanged. Also provides Ship/Strategic Weapons Support System (SWSS) SHIPALT's for ship interfaces that comprise of power, missile tube cabling, radio room, and Fire Control (FC) cabling. Installation is accomplished during 50 day refit without missile offload. SSI Inc 2: Introduction of an integrated Shipboard Data Systems (SDS) which is comprised of Data Recording Subsystem (DRS), Maintenance Information Network (MIN), and Electronic Work Log (EWL) subsystems. the DRS legacy functionality, connectivity, equipment is unchanged. The EWL subsystem provides software upgrades and the Window 7 Operating System upgrade. Provides subsystem SPALTs for SDS and Strategic Weapon System Maintenance Information Network (SWSMIN) and refresh portable computing devices. SSI Inc 4: Prerequisite is SSI Inc 1 and Inc 2. Inc 4 provides SWS Subsystem SPALTs which includes Mod 6/7 FCS Refresh SPALT, Navigation (NAV) Radio Frequency (RF) SPALT, SDS SPALT, and Cabling SPALT. For the FC Mod 6/7 Refresh it contains the technical refresh, integration and commonality of the system. The DRS legacy software modifies the support of the new NAV/SHIP/DRS and NAV/FC interfaces and format changes. for Navigation changes, the equipment remains in NAV Center. Supplies the first technical refresh in 25 years for Navigation Aids (NAVAIDS0 Electronics, frequency standard, workstation, and NAV Control Panel (NCP). SSI Inc 8: Inc 8 provides replacement of the 30 year old ESGN which needs a refresh of inertial technology components, replacement of the Electronic Equipment Consoles (EEC), and updates Navigation Subsystem software to accommodate ESGN replacement navigator. Also, provides SWS subsystem SPALTs for FC and TTF NAV Lab trainers, and SDS (DRS) Software SPALT changes which are driven by data requirement changes. The SHIPALTs retain NAV Center bedplate, cabling, chilled water/ventilation, and retain electrical Power. SSI Inc 10: Inc 10 provides for the refresh of Shipboard Data Systems. SSI Inc 11: Launcher Initiation System (LIS) is being developed for backfit onto OHIO Class D5LE. This provides a technical refresh of 30+ year old technology to ensure long term system reliability. SHIP/SWSS SHIPALT are to replace electrical cable with hybrid fiber-optic/electrical cable. SSI Inc 13: Inc 13 provides Shipboard Systems Refresh for FCS, NAV, and Missile Test and Readiness Equipment (MTRE) to integrate within the subsystems. SSI Inc 15: Prerequisite is SSI Inc 13. Inc 15 provides pre-configuration and post-configuration support of Inc 8 and Inc 11. Inc 15 provides refresh alterations for fire control equipment, navigation, launcher, and trainer subsystems. SSI Inc 16: Prerequisite is SSI Inc 15. Inc 16 provides Fire Control Subsystem refresh of SSI Inc 13 components, technical refresh of Shipboard Data System (SDS) subsystems, technical refresh of Navigation SSI Inc 4, technical refresh of Launcher Variable Energy Eject (VEE) actuators to address obselece to sustain the fleet. Shipboard Systems Integration: Efforts in this cost code focus on capturing legacy fire control and navigation subsystem behavior to develop a functional model to inform future SSI increments.		
TRAINING		
This category provides for procurement of, and alterations to, both tactical and non-tactical equipment required at submarine training facilities to train personnel in the operation and maintenance of launcher and handling, fire control, navigation, missile checkout, and test instrumentation subsystems. Each training facility consists of an integrated family of system and unit laboratories that interface with a training simulation system to provide complete and realistic training for replacement and off-crew personnel, both officer and enlisted, as required for manning of SSBNs and shore facilities. Funding is budgeted to procure training-unique equipment required as the result of alterations to SWS tactical equipment, including those associated with D-5 life extension.		
NEW START		

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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 04: Ordnance Support Equipment / BSA 4: FBM Support Equipment		P-1 Line Item Number / Title: 5358 / Strategic Missile Systems Equip
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0603561N, 0603595N, 0603570N, 0901211N, 0805376N, 0101228N
Line Item MDAP/MAIS Code: N/A		
Funding in this category is in support of the Strategic Arms Reduction Treaty (New START) signed into law on 5 February 2011. New START is a nuclear arms reduction treaty between the United States and the Russian Federation which limits the number of deployed launchers. COLUMBIA CLASS Funding in this category is in support of the Columbia class SSBN for the procurement of trainer 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 04: Ordnance Support Equipment / BSA 4: FBM Support Equipment						P-1 Line Item Number / Title: 5358 / Strategic Missile Systems Equip				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: 0603561N, 0603595N, 0603570N, 0901211N, 0805376N, 0101228N				
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 Missile Systems Equip	P-5a, P-21			- / 1,395.019	- / 238.675	- / 256.817	- / 280.510	- / -	- / 280.510
P-40	Total Gross/Weapon System Cost				- / 1,395.019	- / 238.675	- / 256.817	- / 280.510	- / 0.000	- / 280.510
*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: OTHER MATERIAL SUPPORT A broad range of other material support equipment must be procured for deployed SSBNs, shore installations and contractor facilities. Included within this category are general and special purpose test equipment, launcher expendables, navigation principal items, test instrumentation in support of missile flight tests, and missile checkout equipment. Amounts included within this P1 line for this category are subdivided as follows: Launcher and Handling Equipment (Cost code 1.2 & 1.5): Funding in FY 2020 continues to procure 10 MK-74 Gas Generator (GG) procurements to support missile launch operations and the life extension of the Gas Generators. Funding also increases to complete the Ballast installation of the ballast cans that were procured due to the decision to keep SSBN 730/731 as Strategic assets. Fire Control Equipment (Cost code 2.1-2.6): Funding in FY 2020 provides for procurement of continued capital maintenance projects at the Naval Industrial Reserve Ordnance Plant (NIROP) in Pittsfield, MA. These projects are essential to correct environmental, safety, and energy conservation deficiencies. Funding also provides procurement of hardware and software for targeting, funding for the RT-WEG program, technology refresh of Fire Control Auxiliary Support Equipment as well as the integration of Navy Enterprise Resource Planning (NERP) and the Advanced Inventory Logistics (SAIL) to track tactical support equipment. Navigation Equipment (Cost code 3.3): Funding in FY 2020 provides for factory test equipment refresh to Non-Inertial Navigation Sonar System (NSS) and the Frequency Standard module as well as a series of high complexity tests for non-inertial and inertial Navigation components. Funding is required for replacement of worn or damaged inertial test equipment used at contractors' plants to support test, evaluation, and analysis of inertial instruments. Instrumentation/Missile Test Equipment (Cost code 4.1, 4.4-4.5): Funding in all years provides for shore based and shipboard test instrumentation equipment in support of missile flight tests. Funding in FY 2020 provides for the refresh of the SMART Antenna which is the only system available to the Department to record Reentry Body (RB) data in the terminal (impact) area during required D5 missile flights, as there are no land-based sensors available which can fulfill the requirements for reentry telemetry coverage. Funding in FY20 also provides for Flight Test Support System (FTSS) IV and Portable Navy GPS Translator Processor (PNGTP) Refresh and the procurement of umbilical cable shipsets which are used to replace Umbilical's after approximately twenty years of use, to ensure no reliability degradation and to support the TRIDENT unique portion of the Range refresh of the Command Destruct Transmitter. Information Technology (Cost code 5.1): Funding in all years provides for IT equipment acquisitions (hardware and related software) in support of the Strategic Systems Programs. This includes the IT hardware and software components connected to the Strategic Weapons System Network (SWSNET). ALTERATIONS Alterations to non-flying tactical hardware are continuing requirements for the SWS. Requirements primarily relate to shipboard investments in Commercial-off-the-Shelf/Non-Developmental Items (COTS/NDI) SWS subsystem equipment, including periodic refresh cycles, to ensure continued reliable performance of the weapon system for its extended service life to match the OHIO Class life extension. Strategic										

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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 04: Ordnance Support Equipment / BSA 4: FBM Support Equipment		P-1 Line Item Number / Title: 5358 / Strategic Missile Systems Equip
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0603561N, 0603595N, 0603570N, 0901211N, 0805376N, 0101228N
Line Item MDAP/MAIS Code: N/A		
Programs Alterations (SPALTs) also entail the application of available technology to eliminate personnel safety hazards, correct design deficiencies, maintain system effectiveness by resolving equipment operability problems, achieve logistic economies, and provide for shipboard subsystem D5 life extension modernization efforts. Funds are required to procure alterations to the SWS launcher and fire control subsystems; to inertial, non-inertial, and ESGN navigation subsystem equipment on deployed SSBNs and installed at supporting shore facilities, including the TRIDENT Training Facility (TTF), Bangor, TTF, Kings Bay, the Ashore Navigation Center, and the Inertial System Test Laboratory; to test instrumentation used on SSBNs, support ships and at the Eastern Test Range, the TRIDENT Refit Facility (TRF), Bangor, and TRF, Kings Bay; and to missile handling equipment, missile test and readiness equipment, and surface support equipment. Installation of approved SPALTs is performed on a turnkey basis in conjunction with the procurement of equipment. Use of COTS/NDI has been initiated and is being implemented in all subsystems, wherever possible. Launcher and Handling Equipment (Cost code 6.4): Funding in FY 2020 provides for major Launcher SPALT activities including Maintenance Platform refresh, Ejector Group Handling Equipment (EGHE) refresh, Variable Energy Eject (VEE) Actuator refurbishment and Davit SPALT to address aging and obsolescence issues. Fire Control Equipment (Cost code 7.2): Funding in FY 2020 supports refreshes of the fire control software (FCS) with the initial development and systems requirements review for FCS X56. The scope of one FC redesign will correct between 85 and 100 software defects, as well as include approximately 25 software modifications. Navigation Equipment (Cost code 8.3-8.5): Funding in FY20 provides support for efforts in problem correction, fleet documentation, and system modeling and simulations related to the Navigation system. Transducer (non-inertial) and Navigation SPALTS are being procured to replace legacy equipment. Additionally, FY 2020 efforts will continue to support testing of Navigation software code. Instrumentation/Missile Checkout equipment (Cost code 9.1): FY 2020 funding provides for Forecast Instrumentation SPALT for hardware modification to submarine instrumentation of flight systems. The majority of the Alterations funding supports the Shipboard System Integration (SSI) program which utilizes a COTS based strategy that integrates common electronics (from Fire Control, Launcher, Navigation and Shipboard Data Recording Systems) into the fire control sub-system as well as refreshing inertial systems in order to ensure the TRIDENT II (D5) weapon system can be sustained to FY 2042 in support of OHIO Class SSBNs. Below is a description of each SSI Increment (Inc): SSI Inc 8: Prerequisite is SSI Inc 4. Inc 8 provides replacement of the 30 year old Electrostatic Gyro Navigator (ESGN) which needs a refresh of inertial technology components, replacement of the Electronic Equipment Consoles (EEC), and updates to Navigation Subsystem software to accommodate the ESGN replacement navigator. Also, provides SWS subsystem SPALTs for FC and TTF NAV Lab trainers, and SDS (DRS) Software SPALT changes which are driven by data requirement changes. The SHIPALTs retain NAV Center bedplate, cabling, chilled water/ventilation, and retain electrical Power. The ESGN replacement program is highly complex and has required additional resources in FY19 than shown in the PB19 budget submission. Additional funding out of cost codes 17.1-17.4 was realigned to this program as it has required additional development cycles, testing and qualification. The current ESGN was designed in the early 1980's and deployed in 1983 with a 20 year designed service live. This refresh is critical to ensure the program continues to meet STRATCOM requirements. Efforts funded in Cost codes 13.4-13.6 & 13.8-13.10 in FY 2020 include: -Gyroscope and Inertial Navigation System (INS) performance and qualification testing -Validation testing of fleet and trainer documentation -Gyroscope Production QTY increases from 31 to 67 QTY in FY 2020 including special test equipment, long lead material procurement, and acceptance testing. -INS Production of 2 units. -Increase in production to support life of type buys for Gyroscope's, Integrated Optical Circuits, Optical Fiber, and various other materials need for the deployment of the gyroscopes. -Independent Verification and Validation for Inc 8 efforts -INS Production Software testing and qualification -SSBN validation testing and trainer installation support -Navigation SHIPALT in FY 2020 supports installation for proofing boat as well as an additional 2 boats		

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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 04: Ordnance Support Equipment / BSA 4: FBM Support Equipment		P-1 Line Item Number / Title: 5358 / Strategic Missile Systems Equip
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0603561N, 0603595N, 0603570N, 0901211N, 0805376N, 0101228N
Line Item MDAP/MAIS Code: N/A		
-Inc 8 Installation procedure and coordination definition SSI Inc 10: Prerequisite is SSI Inc 2. Inc 10 provides for the refresh of Shipboard Data Systems. SSI Inc 11: Launcher Initiation System (LIS) is being developed for backfit onto OHIO Class D5LE SSI Inc 1 is a prerequisite. This provides a technical refresh of 30+ year old technology to ensure long term system reliability. SHIP/SWSS SHIPALT are to replace electrical cable with hybrid fiber-optic/electrical cable. Efforts funded in Cost codes 15.5-15.7 in FY 2020 include: -Procure Launcher SSI Inc 11 two (2) shipsets of Laser Firing Units -Installation of LIS SPALT kits and Fiber optic Cables SSI Inc 13: Prerequisite is SSI Inc 4. Inc 13 provides Shipboard Systems Refresh for FCS, NAV, and Missile Test and Readiness Equipment (MTRE) to integrate within the subsystems. Efforts funded in Cost codes 16.1, 16.7-16.9 in FY 2020 include: -MTRE refresh to integrate with Fire Control software changes for SSI Inc 13 for the first proofing boat as well as beginning to support the SSI Increment 15 MTRE preliminary design review and system preliminary design review to prepare for kit procurements in FY21. -Procure and install Fire Control SSI Inc 13 Electronics' Refresh SPALTS Kits with a QTY 6 -Complete the refresh and redesign of Fire Control Inc 13 SSI Inc 15: Prerequisite is SSI Inc 13. Inc 15 provides pre-configuration and post-configuration support of Inc 8 and Inc 11. Inc 15 is a critical path and the baseline for the deployment of the COLUMBIA class SSBN. Inc 15 involves refreshes to several subsystem such as alterations for fire control equipment, navigation, launcher, and trainer subsystems. Due to the developmental challenges experienced for SSI Increment 8 during the engineering and test phase, Strategic Systems Programs (SSP) reduced the efforts of SSI increment 15 to the minimally required effort to address obsolescence issues which are required for the SWS to be the initial baseline for the COLUMBIA class SSBN. Funding in FY19 was prioritized towards the SSI Increment 8 program specifically for the Launcher and Navigation subsystems. Efforts funded in Cost Codes 17.1-17.2, 17.4 in FY 2020 include: -Fire Control SSI Inc 15 development is for Systems Preliminary Design Review (PDR), Software Requirements Review, Hardware Concept Design Review (CDR). Procurement and test of Life-cycle Cost Control (LCCC)/Technology Refresh SPALTs planned for fleet implementation to minimize impacts to USSTRATCOM targeting revisions. -Preliminary Launcher SSI Inc 15 refresh/redesign efforts and support to the Fire Control Increment 15 development. SSI Inc 16: Prerequisite is SSI Inc 15. Inc 16 provides Fire Control Subsystem refresh of SSI Inc 13 components, technical refresh of Shipboard Data System (SDS) subsystems, technical refresh of Navigation SSI Inc 4, and technical refresh of Launcher Variable Energy Eject (VEE) actuators to address obsolesce to sustain the fleet. Shipboard System Integration (Cost code 19.1) cost code provides funding to build legacy fire control and navigation system models to support future SSI Increments. These models will identify the functions required for the subsystems and will help shape the future subsystems architecture which could lead to future cost savings. TRAINING SUPPORT EQUIPMENT This category provides for procurement of, and alterations to, both tactical and non-tactical equipment required at submarine training facilities to train personnel in the operation and maintenance of launcher and handling, fire control, navigation, missile checkout, and test instrumentation subsystems. Each training facility consists of an integrated family of system and unit laboratories that interface with a training simulation system to provide complete and realistic training for replacement and off-crew personnel, both officer and enlisted, as required for manning of SSBNs and shore facilities. Funding is budgeted to procure training-unique equipment required as the result of alterations to SWS tactical equipment, including those associated with D-5 life extension. Funds in Cost code 20.1 are required for software and hardware design modification, lab documentation modification, facility modification, and design and system integration, as well as procurement and fabrication of all hardware needed to support Navigation and Fire Control subsystem training at both the TTF, Bangor, and at TTF, Kings Bay. The required effort includes upgrade of the Bangor and Kings Bay Navigation and Fire Control trainers from SSI Inc 8 and Inc 13, Integration of Fire Control SSI Inc 8 PC Simulation, Inc 8 and Inc 13 Curricula development, and development of the Virtual Strategic Weapons		

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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 04: Ordnance Support Equipment / BSA 4: FBM Support Equipment		P-1 Line Item Number / Title: 5358 / Strategic Missile Systems Equip
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0603561N, 0603595N, 0603570N, 0901211N, 0805376N, 0101228N
Line Item MDAP/MAIS Code: N/A		
System (SWSD) classroom trainers. Funding also addresses the need for acquisition of upgrades to the Bangor and Kings Bay TTFs resulting from tactical changes in the TRIDENT II (D5) missile under the Life Extension (LE) program. FY 2020 tasks will include the SSI Inc 13 Simulation and Training, Inc 13 Curricula development, and SSI Inc 13 software updates to the Fire Control System network and modifies the Navigation interface.		

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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 / 04 / 4								P-1 Line Item Number / Title: 5358 / Strategic Missile Systems Equip								Aggregated Items Title: Strategic Missile Systems 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 (\$ 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) Other Material Support- Launcher and Handling Equipment																					
1.1) Casting Powder Lot Buy	A		1,926.333	9	17.337	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1.2) Gas Generator Production ^(†)	A		312.265	68	21.234	333.578	8	2.669	340.249	10	3.402	347.055	10	3.471	-	-	-	347.055	10	3.471	
1.3) Launch Tube Closures ^(†)	A		533.218	55	29.327	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1.4) Ballast Production ^(†)	A		437.000	15	6.555	445.760	25	11.144	-	-	-	-	-	-	-	-	-	-	-	-	
1.5) Ballast Installation ⁽¹⁾	A		-	-	-	-	-	-	-	-	0.360	-	-	1.301	-	-	-	-	-	1.301	
1.6) Second Explosives Handling Wharf (EHW) Support Equipment	A		-	-	5.864	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1.7) Second Explosives Handling Wharf (EHW) Outfitting	A		-	-	5.925	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Subtotal: 1) Other Material Support-Launcher and Handling Equipment			-	-	86.242	-	-	13.813	-	-	3.762	-	-	4.772	-	-	-	-	-	4.772	
2) Other Material Support-Fire Control Equipment																					
2.1) Nirop Capital Maintenance	A		-	-	26.999	-	-	5.014	-	-	8.962	-	-	3.735	-	-	-	-	-	3.735	
2.2) Fire Control Auxillary Support Equipment	A		-	-	15.304	-	-	-	-	-	-	-	-	1.234	-	-	-	-	-	1.234	
2.3) D5 Targeting Hardware	A		-	-	2.535	-	-	0.875	-	-	0.890	-	-	0.909	-	-	-	-	-	0.909	
2.4) Advanced Inventory Logistics (SAIL) ⁽²⁾	A		-	-	4.590	-	-	1.344	-	-	0.432	-	-	1.155	-	-	-	-	-	1.155	
2.5) Targeting Software Refresh ⁽³⁾	A		-	-	24.904	-	-	10.736	-	-	10.950	-	-	11.279	-	-	-	-	-	11.279	
2.6) RT - WEG ⁽⁴⁾	A		-	-	-	-	-	-	-	-	-	-	-	6.070	-	-	-	-	-	6.070	
Subtotal: 2) Other Material Support-Fire Control Equipment			-	-	74.332	-	-	17.969	-	-	21.234	-	-	24.382	-	-	-	-	-	24.382	
3) Other Material Support-Navigation Equipment																					
3.1) Stable Platform and Housing Material Kits ^(†)	A		363.862	29	10.552	385.560	4	1.542	393.271	4	1.573	-	-	-	-	-	-	-	-	-	
3.2) Shock Isolation System Kits ^(†)	A		736.100	20	14.722	775.922	4	3.104	791.441	4	3.166	-	-	-	-	-	-	-	-	-	

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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 / 04 / 4							P-1 Line Item Number / Title: 5358 / Strategic Missile Systems Equip								Aggregated Items Title: Strategic Missile Systems 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 (\$ 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) Factory Test Equipment ⁽⁵⁾	A		-	-	1.875	-	-	2.888	-	-	1.583	-	-	7.711	-	-	-	-	-	7.711
Subtotal: 3) Other Material Support- Navigation Equipment			-	-	27.149	-	-	7.534	-	-	6.322	-	-	7.711	-	-	-	-	-	7.711
4) Other Material Support- Instrumentation/Missile Checkout Equipment																				
4.1) Umbilical Sets/ Kits ⁽¹⁾	A		1,948.000	4	7.792	-	-	-	2,742.000	1	2.742	2,797.000	1	2.797	-	-	-	2,797.000	1	2.797
4.2) Fire Suppression System	A		-	-	0.300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.3) Electronic Documentation Refresh	A		-	-	1.852	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.4) Data System Integration	A		-	-	2.244	-	-	0.403	-	-	0.435	-	-	0.443	-	-	-	-	-	0.443
4.5) Flight Test Instrumentation (FTI) Refresh ⁽⁶⁾	A		-	-	36.573	-	-	6.853	-	-	1.103	-	-	24.836	-	-	-	-	-	24.836
4.6) Range Systems Refresh	A		-	-	-	-	-	-	-	-	1.161	-	-	-	-	-	-	-	-	-
Subtotal: 4) Other Material Support- Instrumentation/Missile Checkout Equipment			-	-	48.761	-	-	7.256	-	-	5.441	-	-	28.076	-	-	-	-	-	28.076
5) Other Material Support- Information Technology																				
5.1) Hardware/ Software IT Procurement	A		-	-	18.165	-	-	3.006	-	-	3.512	-	-	2.868	-	-	-	-	-	2.868
Subtotal: 5) Other Material Support- Information Technology			-	-	18.165	-	-	3.006	-	-	3.512	-	-	2.868	-	-	-	-	-	2.868
6) Alterations-Launcher and Handling Equipment																				
6.1) Detonator Power Assembly SPALT	A		2,810.000	1	2.810	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.2) Detonator Relay Box SPALT	A		1,902.000	2	3.804	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.3) Hoist ⁽¹⁾	A		1,573.500	10	15.735	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.4) Launcher SPALTS	A		-	-	27.012	-	-	16.770	-	-	14.148	-	-	13.783	-	-	-	-	-	13.783
Subtotal: 6) Alterations-Launcher and Handling Equipment			-	-	49.361	-	-	16.770	-	-	14.148	-	-	13.783	-	-	-	-	-	13.783
7) Alterations-Fire Control																				
7.1) Portable Computing Devices (PCD) Refresh SPALT	A		-	-	2.833	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.2) Minor SPALTS	A		-	-	10.554	-	-	11.325	-	-	11.506	-	-	11.736	-	-	-	-	-	11.736

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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 / 04 / 4							P-1 Line Item Number / Title: 5358 / Strategic Missile Systems Equip								Aggregated Items Title: Strategic Missile Systems 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 (\$ 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: 7) Alterations-Fire Control			-	-	13.387	-	-	11.325	-	-	11.506	-	-	11.736	-	-	-	-	-	11.736
8) Alterations-Navigation Equipment																				
8.1) Navigation Sonar System (NSS) Sensor Qualification	A		-	-	17.285	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.2) Legacy ESGN SPALTs	A		-	-	13.681	-	-	4.759	-	-	-	-	-	-	-	-	-	-	-	-
8.3) TSSS Transducer SPALTs	A		-	-	4.534	-	-	1.855	-	-	3.334	-	-	3.400	-	-	-	-	-	3.400
8.4) Navigation Software SPALTs	A		-	-	12.223	-	-	4.081	-	-	1.227	-	-	1.251	-	-	-	-	-	1.251
8.5) GPS Antenna Refresh	A		-	-	1.500	-	-	4.025	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 8) Alterations-Navigation Equipment			-	-	49.223	-	-	14.720	-	-	4.561	-	-	4.651	-	-	-	-	-	4.651
9) Alterations-Instrumentation/Missile Checkout Equipment																				
9.1) Forecast Instrumentation SPALTs	A		-	-	5.211	-	-	0.790	-	-	0.804	-	-	0.820	-	-	-	-	-	0.820
Subtotal: 9) Alterations-Instrumentation/Missile Checkout Equipment			-	-	5.211	-	-	0.790	-	-	0.804	-	-	0.820	-	-	-	-	-	0.820
10) SSI Increment 1																				
10.1) SSI Increment #1 Production (SHIPALT/SPALT)	A		3,322.583	12	39.871	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 10) SSI Increment 1			-	-	39.871	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11) SSI Increment 2																				
11.1) SSI Increment #2 Production	A		384.207	29	11.142	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.2) SSI Increment #2 Refresh/Redesign	A		-	-	8.215	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 11) SSI Increment 2			-	-	19.357	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12) SSI Increment 4																				
12.1) Navigation SSI Increment 4 Refresh/Redesign	A		-	-	60.760	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.2) Navigation Pre-Production Units Electronics SPALT Kits	A		1,450.000	3	4.350	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.3) Navigation SSI Increment 4 GPS Receiver Production	A		374.417	12	4.493	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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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 / 04 / 4							P-1 Line Item Number / Title: 5358 / Strategic Missile Systems Equip								Aggregated Items Title: Strategic Missile Systems 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 (\$ 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)
12.4) Navigation SSI Increment 4 Electronic SPALT Kits	A		1,000.000	21	21.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.5) Navigation SSI Increment 4 On Board Repair Parts	A		-	-	6.609	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.6) Navigation SSI Increment 4 Engineering and Test	A		-	-	67.892	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.7) Navigation SSI Increment 4 SHIPALT and Installation	A		-	-	12.125	-	-	8.720	-	-	-	-	-	-	-	-	-	-	-	-
12.8) Fire Control SSI Increment 4 Refresh/Redesign	A		-	-	27.451	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.9) Fire Control SSI Increment 4 SPALT Kit Production ^(t)	A		2,837.571	21	59.589	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.10) Fire Control SSI Increment 4 Installation Kits	A		-	-	2.433	-	-	1.722	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 12) SSI Increment 4			-	-	266.702	-	-	10.442	-	-	-	-	-	-	-	-	-	-	-	-
13) SSI Increment 8																				
13.1) Navigation SSI Increment 8 Pre-Production Gyroscope	A		400.000	30	12.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.2) Navigation SSI Increment 8 Pre-Production Inertial Navigation System	A		1,500.000	8	12.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.3) Navigation SSI Increment 8 Refresh/Redesign	A		-	-	119.802	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.4) Navigation SSI Increment 8 Engineering and Test	A		-	-	162.182	-	-	61.965	-	-	65.824	-	-	64.054	-	-	-	-	-	64.054
13.5) Navigation SSI Increment 8 Independent verification and validation	A		-	-	10.311	-	-	3.755	-	-	3.219	-	-	3.283	-	-	-	-	-	3.283
13.6) Navigation SSI Increment 8 Production Gyroscope ^{(7)(t)}	A		1,739.778	9	15.658	431.458	24	10.355	830.774	31	25.754	392.075	67	26.269	-	-	-	392.075	67	26.269

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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 / 04 / 4									P-1 Line Item Number / Title: 5358 / Strategic Missile Systems Equip							Aggregated Items Title: Strategic Missile Systems 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 (\$ 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)	
13.7) Navigation SSI Increment 8 SPALT Engineering drawings	A		-	-	10.064	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
13.8) Navigation SSI Increment 8 On Board Repair Parts (OBRPs) (8)	A		-	-	-	-	-	3.000	-	-	7.439	-	-	15.239	-	-	-	-	-	15.239	
13.9) Navigation SSI Increment 8 Production INS (9)(t)	A		-	-	-	-	-	-	3,778.000	2	7.556	-	-	-	-	-	-	-	-	-	
13.10) Navigation SSI Increment 8 SHIPALT / Installation (10)	A		-	-	-	-	-	1.426	-	-	1.220	-	-	5.856	-	-	-	-	-	5.856	
Subtotal: 13) SSI Increment 8			-	-	342.017	-	-	80.501	-	-	111.012	-	-	114.701	-	-	-	-	-	114.701	
14) SSI Increment 10																					
14.1) Fire Control SSI Increment 10 Shipboard Data System (SDS) SPALT Refresh	A		-	-	5.804	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
14.2) Fire Control SSI Increment 10 SDS SPALT Kits(t)	A		253.000	14	3.542	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
14.3) Fire Control SSI Increment 10 SDS Install	A		-	-	0.490	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Subtotal: 14) SSI Increment 10			-	-	9.836	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
15) SSI Increment 11																					
15.1) Launcher SSI Increment 11 LIS Redesign	A		-	-	10.288	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
15.2) Launcher Increment 11 System Integration Testing	A		-	-	5.404	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
15.3) Launcher SSI Increment 11 LIS Support Equipment/ Fiberoptic Cables	A		-	-	3.496	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
15.4) Launcher SSI Increment 11 LIS Engineering and Test	A		-	-	10.973	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
15.5) Launcher SSI Increment 11 Firing Units/Launch Safing Units(t)	A		1,807.000	14	25.298	-	-	-	1,670.000	2	3.340	1,704.000	2	3.408	-	-	-	1,704.000	2	3.408	

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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 / 04 / 4									P-1 Line Item Number / Title: 5358 / Strategic Missile Systems Equip						Aggregated Items Title: Strategic Missile Systems 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 (\$ 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)
15.6) Launcher SSI Increment 11 LIS Fiberoptic Cables Installation	A		-	-	2.106	-	-	1.096	-	-	1.551	-	-	0.911	-	-	-	-	-	0.911
15.7) Fire Control SSI Increment 11 LIS SPALT Installs	A		-	-	5.777	-	-	1.847	-	-	1.595	-	-	0.880	-	-	-	-	-	0.880
Subtotal: 15) SSI Increment 11			-	-	63.342	-	-	2.943	-	-	6.486	-	-	5.199	-	-	-	-	-	5.199
16) SSI Increment 13																				
16.1) Instrumentation/ Missile SSI Increment 13 MTRE Refresh	A		-	-	12.586	-	-	2.739	-	-	6.248	-	-	6.295	-	-	-	-	-	6.295
16.2) Navigation SSI Increment 13 Refresh/ Redesign	A		-	-	39.624	-	-	14.942	-	-	-	-	-	-	-	-	-	-	-	-
16.3) Navigation SSI Increment 13 Shipalt	A		-	-	0.210	-	-	0.365	-	-	-	-	-	-	-	-	-	-	-	-
16.4) Navigation SSI Increment 13 Independent Verification & Validation	A		-	-	0.333	-	-	0.547	-	-	-	-	-	-	-	-	-	-	-	-
16.5) Navigation SSI Increment 13 SPALT Kit Pre-Production ^(†)	A		-	-	-	536.000	6	3.216	-	-	-	-	-	-	-	-	-	-	-	-
16.6) Navigation SSI Increment 13 On Board Repair Parts (OBRPs)	A		-	-	-	-	-	0.551	-	-	-	-	-	-	-	-	-	-	-	-
16.7) Fire Control SSI Increment 13 Refresh/ Redesign	A		-	-	56.635	-	-	13.658	-	-	13.078	-	-	3.739	-	-	-	-	-	3.739
16.8) Fire Control SSI Increment 13 Electronics Refresh SPALT Kits ^(†)	A		-	-	-	-	-	-	2,349.167	6	14.095	2,342.833	6	14.057	-	-	-	2,342.833	6	14.057
16.9) Fire Control SSI Increment 13 Installation ⁽¹¹⁾	A		-	-	-	-	-	-	-	-	0.855	-	-	1.777	-	-	-	-	-	1.777
Subtotal: 16) SSI Increment 13			-	-	109.388	-	-	36.018	-	-	34.276	-	-	25.868	-	-	-	-	-	25.868
17) SSI Increment 15																				
17.1) Navigation SSI Increment 15 Refresh/ Redesign	A		-	-	-	-	-	0.935	-	-	-	-	-	-	-	-	-	-	-	-

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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 / 04 / 4						P-1 Line Item Number / Title: 5358 / Strategic Missile Systems Equip								Aggregated Items Title: Strategic Missile Systems 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 (\$ 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)
17.2) Fire Control SSI Increment 15 Refresh/ Redesign	A		-	-	-	-	-	1.417	-	-	22.349	-	-	22.796	-	-	-	-	-	22.796
17.4) Launcher SSI Increment 15 Refresh/ Redesign ⁽¹²⁾	A		-	-	-	-	-	-	-	-	1.029	-	-	1.063	-	-	-	-	-	1.063
Subtotal: 17) SSI Increment 15			-	-	0.000	-	-	2.352	-	-	23.378	-	-	23.859	-	-	-	-	-	23.859
19) Training Support Equipment																				
19.1) Training Support Equipment ⁽¹³⁾	A		-	-	97.452	-	-	11.701	-	-	10.375	-	-	12.084	-	-	-	-	-	12.084
Subtotal: 19) Training Support Equipment			-	-	97.452	-	-	11.701	-	-	10.375	-	-	12.084	-	-	-	-	-	12.084
20) New START																				
20.1) Ballast Production & Support Equipment	A		-	-	8.175	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20.2) Steel Closure Design, Procurement & Material	A		-	-	35.148	-	-	1.535	-	-	-	-	-	-	-	-	-	-	-	-
20.3) Material Support, Removed/ Converted Hardware	A		-	-	31.900	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 20) New START			-	-	75.223	-	-	1.535	-	-	-	-	-	-	-	-	-	-	-	-
Total			-	-	1,395.019	-	-	238.675	-	-	256.817	-	-	280.510	-	-	-	-	-	280.510
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⁾ Increases to complete the Ballast installation of the ballast cans that were procured due to the decision to keep SSBN 730/731 as Strategic assets.																				
⁽²⁾ Increase from FY19 to FY20 to bring the SSP Advanced Inventory and Logistics (SAIL) into compliance with Information Assurance reforms. SAIL is an inventory management system used across the Strategic Weapon System program.																				
⁽³⁾ Increase from FY19 to FY20 due to fire control software updates needed to meet strategic priorities																				
⁽⁴⁾ The RT-Weg consists of updates to the fire control system requested by USSTRATCOM to create a SLBM flexibility and efficiency enhancement program.																				
⁽⁵⁾ Increase from FY19 to FY20 due to the factory test equipment refresh of the Non-Inertial Navigation Sonar System (NSS) and the Frequency Standard module, as well as high complexity tests of non-inertial and inertial Navigation components.																				
⁽⁶⁾ Increase from FY19 to FY20 for the refresh of the SMART Antenna which is the only system available to the Department to record Reentry Body (RB) data in the terminal (impact) area during required D5 missile flights, as there are no land-based sensors available which can fulfill the requirements for reentry telemetry coverage. Additional funding in FY20 also provides for Flight Test Support System (FTSS) IV and Portable Navy GPS Translator Processor (PNGTP) Refreshes. These critical Flight Test Instrumentation systems operate in the launch area during a SSBN TRIDENT D5 Missile test launch. The refresh replaces critical safety system components essential to Range safety of the TRIDENT D5 test launch. These systems provide real time data, voice communications, and SSBN tracking information for range safety in the Launch Area to include Mean Time to Endanger of US mainland.																				
⁽⁷⁾ Increase from FY19 to FY20 is due largely to production QTYs (31 to 67), production test equipment, and life of type material kits, as well as acceptance testing. Unit pricing in years 2017-2020 is not reflective of true unit pricing due to procurements in those years of life of type materials, and production special test equipment. Both the US & UK quantities are procured for the same production line and this budget only reflects the US quantities. Total quantity variation also effects the unit costs reflected. In FY18, a total of 48 units were procured (24 each US/UK). In FY19, a total of 31 units are being procured, US/UK quantities are 31/0 respectively. In FY20, a total of 84 units are being procured, US/UK quantities are 67/17 respectively.																				

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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 / 04 / 4	P-1 Line Item Number / Title: 5358 / Strategic Missile Systems Equip	Aggregated Items Title: Strategic Missile Systems Equip
(8) Increase from FY19 to FY20 is due to procurement of initial spares and on board repair parts for Increment 8. FY20 will also procure special production test equipment and trainer spares. (9) INS units are produced on a shared production line with the United Kingdom. Total production line quantities in FY19 are 5 (US - 2 / UK - 3). In FY20, funding for US production has been reallocated to Increment 8 development, but UK quantities will continue to be procured and US quantities will continue in future years. (10) FY19 provides for completion of documentation and initial planning for Increment 8 installations. Increase from FY19 to FY20 provides for installations on the proofing boat plus two additional boats. (11) Increase from FY19 to FY20 support additional installs which are required in order to meet Strategic commitments. In FY19, the majority of the installations are on shore based assets, however in FY20, the majority are ship based, which increases the complexity and cost of the installations. (12) Increase from FY19 to FY20 due to refresh alterations required to the Launcher subsystem. (13) Increase from FY19 to FY20 support efforts associated with trainer and documentation updates for Shipboard System Integration Increment 13. Efforts include, Shipboard Data Systems applications updates, requirements reviews, and Strategic Programs Alteration (SPALT) generation.		

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 4				P-1 Line Item Number / Title: 5358 / Strategic Missile Systems Equip					Aggregated Items: Strategic Missile Systems 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 (\$ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1) Other Material Support- Launcher and Handling Equipment												
1.2) Gas Generator Production		2014	Alliant Tech Systems / Rocket Center, WV	C / CPFF	Washington Navy Yard, DC	Dec 2013	Dec 2015	8	309.500	Y		
1.2) Gas Generator Production		2015	Alliant Tech Systems / Rocket Center, WV	C / CPFF	Washington Navy Yard, DC	Feb 2015	Feb 2017	8	314.500	Y		
1.2) Gas Generator Production		2016	Alliant Tech Systems / Rocket Center, WV	C / CPFF	Washington Navy Yard, DC	Mar 2016	Mar 2018	8	320.625	Y		
1.2) Gas Generator Production		2017	Alliant Tech Systems / Rocket Center, WV	C / CPFF	Washington Navy Yard, DC	Mar 2017	Mar 2019	8	327.038	Y		
1.2) Gas Generator Production		2018	Alliant Tech Systems / Rocket Center, WV	C / CPFF	Washington Navy Yard, DC	Mar 2018	Mar 2020	8	333.578	Y		
1.2) Gas Generator Production		2019	Alliant Tech Systems / Rocket Center, WV	C / CPFF	Washington Navy Yard, DCWashington Navy Yard, DCWa	Mar 2019	Mar 2021	10	340.249	Y		
1.2) Gas Generator Production		2020	Alliant Tech Systems / Rocket Center, WV	C / CPFF	Washington Navy Yard, DC	Mar 2020	Mar 2022	10	347.055	Y		
1.3) Launch Tube Closures ^(†)		2015	NORTHROP GRUMMAN (Launch Tube Closures) / Sunnyvale, CA	C / CPIF	Washington Navy Yard, DC	Feb 2015	Feb 2017	18	539.556	Y		
1.4) Ballast Production ^(†)		2017	Lockheed Martin / Sunnyvale, CA	C / CPIF	Washington Navy Yard, DC	Mar 2017	Mar 2018	15	437.000	Y		
1.4) Ballast Production ^(†)		2018	Lockheed Martin / Sunnyvale, CA	C / CPIF	Washington Navy Yard, DC	Mar 2018	Mar 2019	25	445.760	Y		
3) Other Material Support-Navigation Equipment												
3.1) Stable Platform and Housing Material Kits		2014	Boeing / Anaheim, CA	C / CPFF	Washington Navy Yard, DC	Jan 2014	Jan 2016	6	358.333	Y		
3.1) Stable Platform and Housing Material Kits		2015	Boeing / Anaheim, CA	C / CPFF	Washington Navy Yard, DC	Feb 2015	Feb 2017	6	364.500	Y		
3.1) Stable Platform and Housing Material Kits		2016	Boeing / Anaheim, CA	C / CPFF	Washington Navy Yard, DC	Oct 2015	Oct 2017	5	371.000	Y		
3.1) Stable Platform and Housing Material Kits		2017	Boeing / Anaheim, CA	C / CPFF	Washington Navy Yard, DC	Oct 2016	Oct 2018	2	378.000	Y		
3.1) Stable Platform and Housing Material Kits		2018	Boeing / Anaheim, CA	C / CPFF	Washington Navy Yard, DC	Oct 2017	Oct 2019	4	385.560	Y		
3.1) Stable Platform and Housing Material Kits		2019	Boeing / Anaheim, CA	C / CPFF	Washington Navy Yard, DC	Oct 2018	Oct 2020	4	393.271	Y		
3.2) Shock Isolation System Kits		2015	Boeing / Anaheim, CA	C / CPIF	Washington Navy Yard, DC	Feb 2015	Feb 2016	6	733.000	Y		
3.2) Shock Isolation System Kits		2016	Boeing / Anaheim, CA	C / CPIF	Washington Navy Yard, DC	Oct 2015	Oct 2016	6	747.000	Y		

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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
3.2) Shock Isolation System Kits		2017	Boeing / Anaheim, CA	C / CPIF	Washington Navy Yard, DC	Oct 2016	Oct 2017	2	760.708	Y		
3.2) Shock Isolation System Kits		2018	Boeing / Anaheim, CA	C / CPIF	Washington Navy Yard, DC	Oct 2017	Oct 2018	4	775.922	Y		
3.2) Shock Isolation System Kits		2019	Boeing / Anaheim, CA	C / CPIF	Washington Navy Yard, DC	Oct 2018	Oct 2019	4	791.441	Y		
4) Other Material Support- Instrumentation/Missile Checkout Equipment												
4.1) Umbilical Sets/Kits		2013	Lockheed Martin / Sunnyvale, CA	C / CPIF	Washington Navy Yard, DC	Dec 2012	Dec 2015	1	1,948.000	Y		
4.1) Umbilical Sets/Kits		2014	Lockheed Martin / Sunnyvale, CA	C / CPIF	Washington Navy Yard, DC	Dec 2013	Dec 2016	1	1,948.000	Y		
4.1) Umbilical Sets/Kits		2019	Lockheed Martin / Sunnyvale, CA	C / CPIF	Washington Navy Yard, DC	Oct 2018	Oct 2021	1	2,742.000	Y		
4.1) Umbilical Sets/Kits		2020	Lockheed Martin / Sunnyvale, CA	C / CPIF	Washington Navy Yard, DC	Oct 2019	Oct 2022	1	2,797.000	Y		
6) Alterations-Launcher and Handling Equipment												
6.3) Hoist		2014	NORTHROP GRUMMAN / Sunnyvale, CA	C / CPFF	Washington Navy Yard, DC	Dec 2013	Mar 2016	2	1,556.500	Y		
6.3) Hoist		2015	NORTHROP GRUMMAN / Sunnyvale, CA	C / CPFF	Washington Navy Yard, DC	Feb 2015	May 2017	2	1,585.000	Y		
6.3) Hoist		2016	NORTHROP GRUMMAN / Sunnyvale, CA	C / CPFF	Washington Navy Yard, DC	Oct 2015	Jan 2018	2	1,613.000	Y		
12) SSI Increment 4												
12.9) Fire Control SSI Increment 4 SPALT Kit Production ^(†)		2014	General Dynamics (SSI Increment #4 MOD 6 Refresh SPALT Kit Production) / Pittsfield, MA	C / CPIF	Washington Navy Yard, DC	Dec 2013	Dec 2016	4	2,835.000	Y		
12.9) Fire Control SSI Increment 4 SPALT Kit Production ^(†)		2015	General Dynamics (SSI Increment #4 MOD 6 Refresh SPALT Kit Production) / Pittsfield, MA	C / CPIF	Washington Navy Yard, DC	Feb 2015	Feb 2018	1	2,886.000	Y		
13) SSI Increment 8												
13.6) Navigation SSI Increment 8 Production Gyroscope ^{(7)(†)}		2017	Lockheed Martin (SSI Increment #8 Gyroscope) / Mitchfield, NY	C / CPIF	Washington Navy Yard, DC	May 2017	Aug 2018	9	382.500	Y		
13.6) Navigation SSI Increment 8 Production Gyroscope ^{(7)(†)}		2018	Lockheed Martin (SSI Increment #8 Gyroscope) / Mitchfield, NY	C / CPIF	Washington Navy Yard, DC	Jan 2018	Jun 2019	24	431.458	Y		
13.6) Navigation SSI Increment 8 Production Gyroscope ^{(7)(†)}		2019	Lockheed Martin (SSI Increment #8 Gyroscope) / Mitchfield, NY	C / CPIF	Washington Navy Yard, DC	Nov 2018	Jun 2020	31	830.774	Y		
13.6) Navigation SSI Increment 8 Production Gyroscope ^{(7)(†)}		2020	Lockheed Martin (SSI Increment #8 Gyroscope) / Mitchfield, NY	C / CPIF	Washington Navy Yard, DC	Nov 2019	Jun 2021	67	392.075	Y		

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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
13.9) Navigation SSI Increment 8 Production INS ^{(9)(†)}		2019	Lockheed Martin (SSI Increment #8 EDM Inertial Navigation System (INS)) / Mitchfield,NY	C / CPIF	Washington Navy Yard, DC	Nov 2018	Feb 2020	2	3,778.000	Y		
14) SSI Increment 10												
14.2) Fire Control SSI Increment 10 SDS SPALT Kits		2016	General Dynamics (SSI Increment #10 SDS SPALT kit) / Pittsfield, MA	C / CPIF	Washington Navy Yard, DC	Oct 2015	Oct 2017	14	253.000	Y		
15) SSI Increment 11												
15.5) Launcher SSI Increment 11 Firing Units/Launch Safing Units ^(†)		2013	NORTHROP GRUMMAN (LIS Firing Units (FUs)/Launch Safing Units (LSUs) / Sunnyvale, CA	C / CPIF	Washington Navy Yard, DC	Oct 2012	Jul 2015	2	2,730.000	Y		
15.5) Launcher SSI Increment 11 Firing Units/Launch Safing Units ^(†)		2014	NORTHROP GRUMMAN (LIS Firing Units (FUs)/Launch Safing Units (LSUs) / Sunnyvale, CA	C / FFP	Washington Navy Yard, DC	Dec 2013	Sep 2016	1	2,730.000	Y		
15.5) Launcher SSI Increment 11 Firing Units/Launch Safing Units ^(†)		2015	NORTHROP GRUMMAN (LIS Firing Units (FUs)/Launch Safing Units (LSUs) / Sunnyvale, CA	C / FFP	Washington Navy Yard, DC	Feb 2015	Nov 2017	9	1,544.000	Y		
15.5) Launcher SSI Increment 11 Firing Units/Launch Safing Units ^(†)		2017	NORTHROP GRUMMAN (LIS Firing Units (FUs)/Launch Safing Units (LSUs) / Sunnyvale, CA	C / CPFF	Washington Navy Yard, DC	Nov 2016	Aug 2019	2	1,606.000	Y		
15.5) Launcher SSI Increment 11 Firing Units/Launch Safing Units ^(†)		2019	NORTHROP GRUMMAN (LIS Firing Units (FUs)/Launch Safing Units (LSUs) / Sunnyvale, CA	C / CPFF	Washington Navy Yard, DC	Feb 2019	Nov 2021	2	1,670.000	Y		
15.5) Launcher SSI Increment 11 Firing Units/Launch Safing Units ^(†)		2020	NORTHROP GRUMMAN (LIS Firing Units (FUs)/Launch Safing Units (LSUs) / Sunnyvale, CA	C / CPFF	Washington Navy Yard, DC	Nov 2019	Aug 2022	2	1,704.000	Y		
16) SSI Increment 13												
16.5) Navigation SSI Increment 13 SPALT Kit Pre-Production ^(†)		2018	Lockheed Martin (SSI Increment #13 SPALT) / Mitchfield, NY	C / CPIF	Washington Navy Yard, DC	Jan 2018	Aug 2018	6	536.000	Y		
16.8) Fire Control SSI Increment 13 Electronics Refresh SPALT Kits ^(†)		2019	General Dynamics (SSI Increment #13 FC Electronic Refresh SPALT Kits) / Pittsfield, MA	C / CPIF	Washington Navy Yard, DC	Oct 2018	Oct 2019	6	2,349.167	Y		
16.8) Fire Control SSI Increment 13 Electronics Refresh SPALT Kits ^(†)		2020	General Dynamics (SSI Increment #13 FC Electronic Refresh SPALT Kits) / Pittsfield, MA	C / CPIF	Washington Navy Yard, DC	Oct 2019	Oct 2020	6	2,342.833	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 / 04 / 4							P-1 Line Item Number / Title: 5358 / Strategic Missile Systems Equip																	Aggregated Items: Strategic Missile Systems Equip									
Items (Units in Each)							Fiscal Year 2013													Fiscal Year 2014													B A L A N C E
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2012	BAL DUE AS OF 1 OCT	Calendar Year 2013													Calendar Year 2014													
							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			
	10	2020	NAVY	6	0	6																											6
							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 / 04 / 4										P-1 Line Item Number / Title: 5358 / Strategic Missile Systems Equip										Aggregated Items: Strategic Missile Systems Equip														
Items (Units in Each)							Fiscal Year 2015										Fiscal Year 2016													BALANCE				
OCO#	MFR#	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2014	BAL DUE AS OF 1 OCT	OCT		NOV	DEC	Calendar Year 2015										Calendar Year 2016													
											JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL		AUG	SEP		
1) Other Material Support- Launcher and Handling Equipment																																		
1.3) Launch Tube Closures																																		
Prior Years Deliveries: 37																																		
	3	2015	NAVY	18	0	18						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	
1.4) Ballast Production																																		
	4	2017	NAVY	15	0	15																											15	
	4	2018	NAVY	25	0	25																											25	
12) SSI Increment 4																																		
12.9) Fire Control SSI Increment 4 SPALT Kit Production																																		
Prior Years Deliveries: 16																																		
	5	2014	NAVY	4	0	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4		
	5	2015	NAVY	1	0	1						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1		
13) SSI Increment 8																																		
13.6) Navigation SSI Increment 8 Production Gyroscope ⁽⁷⁾																																		
	6	2017	NAVY	9	0	9																											9	
	6	2018	NAVY	24	0	24																											24	
	6	2019	NAVY	31	0	31																											31	
	6	2020	NAVY	67	0	67																											67	
13.9) Navigation SSI Increment 8 Production INS ⁽⁹⁾																																		
	7	2019	NAVY	2	0	2																											2	
15) SSI Increment 11																																		
15.5) Launcher SSI Increment 11 Firing Units/Launch Safing Units																																		
	8	2013	NAVY	2	0	2	-	-	-	-	-	-	-	-	-	1	1																0	
	8	2014	NAVY	1	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0		
	8	2015	NAVY	9	0	9						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9		
	8	2017	NAVY	2	0	2																											2	
	8	2019	NAVY	2	0	2																											2	
	8	2020	NAVY	2	0	2																											2	
16) SSI Increment 13																																		
16.5) Navigation SSI Increment 13 SPALT Kit Pre-Production																																		
	9	2018	NAVY	6	0	6																											6	
16.8) Fire Control SSI Increment 13 Electronics Refresh SPALT Kits																																		
	10	2019	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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Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 4							P-1 Line Item Number / Title: 5358 / Strategic Missile Systems Equip																	Aggregated Items: Strategic Missile Systems Equip									
Items (Units in Each)							Fiscal Year 2015													Fiscal Year 2016													B A L A N C E
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2014	BAL DUE AS OF 1 OCT	Calendar Year 2015													Calendar Year 2016													
							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			
	10	2020	NAVY	6	0	6																											6
							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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Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 4										P-1 Line Item Number / Title: 5358 / Strategic Missile Systems Equip										Aggregated Items: Strategic Missile Systems Equip													
Items (Units in Each)						Fiscal Year 2017												Fiscal Year 2018												BALANCE			
OCO#	MFR#	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	Calendar Year 2017												Calendar Year 2018														
							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) Other Material Support- Launcher and Handling Equipment																																	
1.3) Launch Tube Closures																																	
Prior Years Deliveries: 37																																	
	3	2015	NAVY		18	0	18	-	-	-	-	2	2	2	2	2	2	2	2														0
1.4) Ballast Production																																	
	4	2017	NAVY		15	0	15						A -	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	3	0	
	4	2018	NAVY		25	0	25																		A -	-	-	-	-	-	-	25	
12) SSI Increment 4																																	
12.9) Fire Control SSI Increment 4 SPALT Kit Production																																	
Prior Years Deliveries: 16																																	
	5	2014	NAVY		4	0	4	-	-	1	1	1	1																		0		
	5	2015	NAVY		1	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1								0		
13) SSI Increment 8																																	
13.6) Navigation SSI Increment 8 Production Gyroscope ⁽⁷⁾																																	
	6	2017	NAVY		9	0	9						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	7		
	6	2018	NAVY		24	0	24														A -	-	-	-	-	-	-	-	-	-		24	
	6	2019	NAVY		31	0	31																									31	
	6	2020	NAVY		67	0	67																									67	
13.9) Navigation SSI Increment 8 Production INS ⁽⁹⁾																																	
	7	2019	NAVY		2	0	2																									2	
15) SSI Increment 11																																	
15.5) Launcher SSI Increment 11 Firing Units/Launch Safing Units																																	
	8	2013	NAVY		2	2	0																									0	
	8	2014	NAVY		1	1	0																									0	
	8	2015	NAVY		9	0	9	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1				0	
	8	2017	NAVY		2	0	2		A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		2	
	8	2019	NAVY		2	0	2																									2	
	8	2020	NAVY		2	0	2																									2	
16) SSI Increment 13																																	
16.5) Navigation SSI Increment 13 SPALT Kit Pre-Production																																	
	9	2018	NAVY		6	0	6														A -	-	-	-	-	-	-	-	1	1		4	
16.8) Fire Control SSI Increment 13 Electronics Refresh SPALT Kits																																	
	10	2019	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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Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 4							P-1 Line Item Number / Title: 5358 / Strategic Missile Systems Equip																	Aggregated Items: Strategic Missile Systems Equip									
Items (Units in Each)							Fiscal Year 2017													Fiscal Year 2018													B A L A N C E
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			
	10	2020	NAVY	6	0	6																											6
							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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Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 4										P-1 Line Item Number / Title: 5358 / Strategic Missile Systems Equip										Aggregated Items: Strategic Missile Systems Equip																		
Items (Units in Each)							Fiscal Year 2019										Fiscal Year 2020													BALANCE								
OCC#	MFR#	FY	SERVICE	PROCQTY	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) Other Material Support- Launcher and Handling Equipment																																						
1.3) Launch Tube Closures																																						
Prior Years Deliveries: 37																																						
	3	2015	NAVY	18	18	0																											0					
1.4) Ballast Production																																						
	4	2017	NAVY	15	15	0																											0					
	4	2018	NAVY	25	0	25	-	-	-	-	-	2	2	2	2	2	2	3	3	3	2	2											0					
12) SSI Increment 4																																						
12.9) Fire Control SSI Increment 4 SPALT Kit Production																																						
Prior Years Deliveries: 16																																						
	5	2014	NAVY	4	4	0																											0					
	5	2015	NAVY	1	1	0																											0					
13) SSI Increment 8																																						
13.6) Navigation SSI Increment 8 Production Gyroscope ⁽⁷⁾																																						
	6	2017	NAVY	9	2	7	1	1	1	1	1	1																					0					
	6	2018	NAVY	24	0	24	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2								0				
	6	2019	NAVY	31	0	31		A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	23							
	6	2020	NAVY	67	0	67																		A	-	-	-	-	-	-	-	-	-	-	-	-	-	67
13.9) Navigation SSI Increment 8 Production INS ⁽⁹⁾																																						
	7	2019	NAVY	2	0	2		A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1								0						
15) SSI Increment 11																																						
15.5) Launcher SSI Increment 11 Firing Units/Launch Safing Units																																						
	8	2013	NAVY	2	2	0																											0					
	8	2014	NAVY	1	1	0																											0					
	8	2015	NAVY	9	9	0																											0					
	8	2017	NAVY	2	0	2	-	-	-	-	-	-	-	-	-	1	1											0										
	8	2019	NAVY	2	0	2						A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2							
	8	2020	NAVY	2	0	2																		A	-	-	-	-	-	-	-	-	-	-	-	-	2	
16) SSI Increment 13																																						
16.5) Navigation SSI Increment 13 SPALT Kit Pre-Production																																						
	9	2018	NAVY	6	2	4	1	1	1	1																							0					
16.8) Fire Control SSI Increment 13 Electronics Refresh SPALT Kits																																						
	10	2019	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 / 04 / 4							P-1 Line Item Number / Title: 5358 / Strategic Missile Systems Equip																	Aggregated Items: Strategic Missile Systems Equip									
Items (Units in Each)							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			
	10	2020	NAVY	6	0	6														A -	-	-	-	-	-	-	-	-	-	-	-	-	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 / 04 / 4												P-1 Line Item Number / Title: 5358 / Strategic Missile Systems Equip												Aggregated Items: Strategic Missile Systems Equip							
Items (Units in Each)							Fiscal Year 2021												Fiscal Year 2022												B A L A N C E
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	Calendar Year 2021												Calendar Year 2022												
							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) Other Material Support- Launcher and Handling Equipment																															
1.3) Launch Tube Closures																															
Prior Years Deliveries: 37																															
	3	2015	NAVY	18	18	0																		0							
1.4) Ballast Production																															
	4	2017	NAVY	15	15	0																		0							
	4	2018	NAVY	25	25	0																		0							
12) SSI Increment 4																															
12.9) Fire Control SSI Increment 4 SPALT Kit Production																															
Prior Years Deliveries: 16																															
	5	2014	NAVY	4	4	0																		0							
	5	2015	NAVY	1	1	0																		0							
13) SSI Increment 8																															
13.6) Navigation SSI Increment 8 Production Gyroscope ⁽⁷⁾																															
	6	2017	NAVY	9	9	0																		0							
	6	2018	NAVY	24	24	0																		0							
	6	2019	NAVY	31	8	23	2	3	3	3	3	3	3																0		
	6	2020	NAVY	67	0	67	-	-	-	-	-	-	-	-	5	5	5	5	5	5	6	6	6	6	6	6	6	6	0		
13.9) Navigation SSI Increment 8 Production INS ⁽⁹⁾																															
	7	2019	NAVY	2	2	0																		0							
15) SSI Increment 11																															
15.5) Launcher SSI Increment 11 Firing Units/Launch Safing Units																															
	8	2013	NAVY	2	2	0																		0							
	8	2014	NAVY	1	1	0																		0							
	8	2015	NAVY	9	9	0																		0							
	8	2017	NAVY	2	2	0																		0							
	8	2019	NAVY	2	0	2	-	-	-	-	-	-	-	-	-	-	-	-	1	1									0		
	8	2020	NAVY	2	0	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	0		
16) SSI Increment 13																															
16.5) Navigation SSI Increment 13 SPALT Kit Pre-Production																															
	9	2018	NAVY	6	6	0																		0							
16.8) Fire Control SSI Increment 13 Electronics Refresh SPALT Kits																															
	10	2019	NAVY	6	6	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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Exhibit P-21, Production Schedule: PB 2020 Navy																			Date: March 2019														
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 4							P-1 Line Item Number / Title: 5358 / Strategic Missile Systems Equip													Aggregated Items: Strategic Missile Systems Equip													
Items (Units in Each)							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			
	10	2020	NAVY	6	0	6	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 / 04 / 4				P-1 Line Item Number / Title: 5358 / Strategic Missile Systems Equip					Aggregated Items: Strategic Missile Systems 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	NORTHROP GRUMMAN (Launch Tube Closures) - Sunnyvale, CA	17	24	36	0	2	24	26	0	2	24	26
2	Lockheed Martin - Sunnyvale, CA	15	20	25	0	6	0	6	0	6	0	6
3	General Dynamics (SSI Increment #4 MOD 6 Refresh SPALT Kit Production) - Pittsfield, MA	1	12	24	0	2	24	26	0	2	24	26
4	Lockheed Martin (SSI Increment #8 Gyroscope) - Mitchfield, NY	10	72	96	0	0	15	15	0	0	15	15
5	Lockheed Martin (SSI Increment #8 EDM Inertial Navigation System (INS)) - Mitchfield,NY	6	12	16	0	0	13	13	0	0	13	13
6	NORTHROP GRUMMAN (LIS Firing Units (FUs)/ Launch Safing Units (LSUs) - Sunnyvale, CA	2	4	15	0	0	12	12	0	0	9	9
7	Lockheed Martin (SSI Increment #13 SPALT) - Mitchfield, NY	3	5	7	0	0	7	7	0	0	7	7
8	General Dynamics (SSI Increment #13 FC Electronic Refresh SPALT Kits) - Pittsfield, MA	2	5	15	0	0	12	12	0	0	12	12

"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 04: Ordnance Support Equipment / BSA 5: ASW Support Equipment							P-1 Line Item Number / Title: 5420 / SSN Combat Control Systems					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: 0604562N				
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>)	734.819	146.972	125.903	148.547	0.000	148.547	176.115	164.701	163.637	159.567	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	734.819	146.972	125.903	148.547	0.000	148.547	176.115	164.701	163.637	159.567	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	734.819	146.972	125.903	148.547	0.000	148.547	176.115	164.701	163.637	159.567	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>)	-	9.244	1.792	3.885	-	3.885	3.000	3.000	4.000	2.067	Continuing	Continuing
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

VB011 - COMBAT SYSTEMS TECHNOLOGY REFRESH / LEGACY INTEGRATION
 Procures tactical control hardware upgrades to SSN688, SSN688I, SSBN, SSN 21, and SSGN Class submarines for legacy combat control systems and obsolete legacy launcher systems. These updates provide accelerated delivery of tactical capability to the Fleet and bridge the gap between legacy combat control systems and AN/BYG-1. Procures Engineering Changes (EC) and Ordnance Alterations (ORDALT) to correct fleet reported problems with legacy Combat Control System software and hardware. Procures Weapons Launch System, Multi-tube Weapon System (MTWS) and provides support for fleet introduction of the Common Weapon Launcher (CWL) transition and integration into the TI/APB process. Provides system engineering in support of Tactical Local Area Network (TacLAN); Information Assurance (IA); Onboard Team Trainer (OBTT); and Command, Control, Computer and Intelligence Maintenance Tool (C3IMT). Provides funding for integration of Harpoon BLK 1C into Payload Control System.

VB034 - SUBMARINE COMBAT CONTROL SYSTEM MODERNIZATION PROGRAM
 This cost code procures hardware and software upgrades for the AN/BYG-1 system for installation on all submarine platforms. The AN/BYG-1 is the combat control system common across all submarine platforms which incorporates tactical control, weapon control and Tactical Local Area Network (TacLAN) functions into a single procurement program. AN/BYG-1 allows the submarine Navy to rapidly update the ship safety tactical picture, integrates the common tactical picture into the battlegroup, improves torpedo interfaces and provides tactical TOMAHAWK capability. AN/BYG-1 systems will be continuously updated with hardware enhancements to address Commercial Off The Shelf (COTS) obsolescence and capability improvements as defined by the Advanced Processor Build (APB) process. These updates are referred to as Tech Insertion (TI) kits and are differentiated by year of development (i.e. T110, T112, etc). The TI upgrades provide the baseline for all future AN/BYG-1 procurements. In addition, this budget also provides tech insertion "kits" to update existing AN/BYG-1 platforms. The AN/BYG-1 nomenclature was adopted in FY05 and out to incorporate the addition of VIRGINIA Class Combat Control System to a common acquisition and development strategy. This allows for AN/BYG-1 to be the common combat control system nomenclature across all submarine platforms. Funds are for the installation of Combat Control System equipment included in the Fleet Modernization Program.

VB800 - ELECTRONIC CHARTING DISPLAY INFORMATION SYSTEM
 The Submarine Electronic Charting Display Information System - Navy (ECDIS-N) is installed on all U.S. Navy submarine platforms. PEO SUB Submarine Combat and Weapons Control Program Office has program acquisition, contractual, financial, engineering and logistical responsibilities for submarine ECDIS-N systems. This includes conducting submarine Voyage Management System (VMS) VMS 9.3, VMS 9.4, VMS 9.5 and the future Navy-ECDIS integration, testing, ECDIS-N certification, and fielding responsibilities in support of all baselines.

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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 04: Ordnance Support Equipment / BSA 5: ASW Support Equipment		P-1 Line Item Number / Title: 5420 / SSN Combat Control Systems
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0604562N
Line Item MDAP/MAIS Code: N/A VB995 PRODUCTION ENGINEERING AND INITIAL TRAINING - This cost code procures production and logistics support, assistance for asset management, cost analyses, preparation of contract specifications, monitoring of contract deliverables, contractor cost, schedule and performance monitoring, Integrated Logistics Support (ILS) planning and Government Furnished Information (GFI) coordination. This cost code also provides initial training curriculum development, training management materials, exercise control group development, and pilot services to the Fleet. VB997 - SSGN SUSTAINING SUPPORT The SSP funding provides for the procurement, installation and sustainment of equipment required for the life-cycle operational support of SSGN Attack Weapons Systems (AWS) for the four OHIO-class SSGNs. OPN sustaining support funding provides for SSGN AWS logistics acquisition support and for Attack Weapon Control System (AWCS) alterations that provide technical refresh updates to the AWCS and to two shore-based trainers located at Kings Bay, GA and Bangor, WA. The AWCS alterations will provide technical refresh upgrades to include the Tactical TOMAHAWK Weapon Control Systems (TTWCS) 5.4.0.2 and TOMAHAWK Command and Control System (TC2S 5.0.1) software necessary to ensure the long-term safety, reliability and maintainability of the Attack Weapons Control System. TTWCS 5.4.0.2 and TC2S 5.0.1 software are required for the SSGN Strike Operations to continue the Fleet's mission. TTWCS 5.6 is required to maintain compatibility with modernized TOMAHAWK missiles. The modernized TOMAHAWK supports emerging missions for which the SSGN is the prime platform for deployment. VB700 - PAYLOAD PROCUREMENT Procurement of payloads to include Unmanned Aerial System(UAS) vehicles for integration, verification, and validation.		

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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 04: Ordnance Support Equipment / BSA 5: ASW Support Equipment			P-1 Line Item Number / Title: 5420 / SSN Combat Control Systems		
ID Code (A=Service Ready, B=Not Service Ready): A		Program Elements for Code B Items: N/A		Other Related Program Elements: 0604562N	
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 Combat Control Systems	P-5a			- / 319.550	- / 39.460	- / 43.536	- / 68.155	- / -	- / 68.155
P-3a	1 / VB034 SSBN MODERNIZATION WITH AN/BYG-1 (UPGRADE)				- / 33.945	- / 32.631	- / 28.839	- / 27.112	- / 0.000	- / 27.112
P-3a	2 / VB034 SSBN MODERNIZATION TECH INSERTION (SSBN CLASS)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	3 / VB034 TECHNOLOGY INSERTION (TI00/TI02 BASELINE) SSN774 CLASS (UPGRADE)				- / 69.898	- / 1.799	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	4 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSGN CLASS (UPGRADE)				- / 22.053	- / 0.000	- / 6.356	- / 11.186	- / 0.000	- / 11.186
P-3a	5 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN21 CLASS (UPGRADE)				- / 23.698	- / 7.565	- / 4.513	- / 0.000	- / 0.000	- / 0.000
P-3a	6 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN688 CLASS (UPGRADE)				- / 206.070	- / 18.853	- / 37.160	- / 34.637	- / 0.000	- / 34.637
P-3a	7 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS (UPGRADE)				- / 59.605	- / 46.664	- / 5.499	- / 7.457	- / 0.000	- / 7.457
P-3a	8 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS W/CWL (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-40	Total Gross/Weapon System Cost				- / 734.819	- / 146.972	- / 125.903	- / 148.547	- / 0.000	- / 148.547

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 Combat Control Systems	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / VB034 SSBN MODERNIZATION WITH AN/BYG-1 (UPGRADE)				- / 25.413	- / 7.080	- / 0.000	- / 0.000	- / 0.000	- / 155.020
P-3a	2 / VB034 SSBN MODERNIZATION TECH INSERTION (SSBN CLASS)				- / 0.000	- / 13.491	- / 23.740	- / 17.197	- / 5.191	- / 59.619
P-3a	3 / VB034 TECHNOLOGY INSERTION (TI00/TI02 BASELINE) SSN774 CLASS (UPGRADE)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 71.697
P-3a	4 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSGN CLASS (UPGRADE)				- / 4.796	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 44.391
P-3a	5 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN21 CLASS (UPGRADE)				- / 0.000	- / 3.392	- / 8.345	- / 8.511	- / 5.082	- / 61.106
P-3a	6 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN688 CLASS (UPGRADE)				- / 15.562	- / 16.989	- / 50.848	- / 40.098	- / 6.738	- / 426.955
P-3a	7 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS (UPGRADE)				- / 17.119	- / 27.164	- / 5.952	- / 40.357	- / 13.987	- / 223.804
P-3a	8 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS W/CWL (TBD)				- / 69.617	- / 41.946	- / 6.214	- / 36.940	Continuing	Continuing
P-40	Total Gross/Weapon System Cost				- / 176.115	- / 164.701	- / 163.637	- / 159.567	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.

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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 04: Ordnance Support Equipment / BSA 5: ASW Support Equipment		P-1 Line Item Number / Title: 5420 / SSN Combat Control Systems
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0604562N
Line Item MDAP/MAIS Code: N/A		
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.		
Justification: The FY20 funding request increases to reflect an increase in Weapons Launch System technical insertion efforts. FY20 procures three SSBNs, two SSGNs, five 688s and one VA Class submarine kits. FY20 procures SSN/SSBN/SSGN shipsets as part of the Submarine Warfare Federated Tactical System (SWFTS) initiative and will install shipsets procured in FY19. FY20 is the third year of procurements for Unmanned Aerial System Blackwing (BW) units. We will continue to procure tactical control hardware upgrades to SSN/SSBN/SSGN Class submarines for legacy combat control systems, Engineering Changes (EC) and Ordnance Alterations (ORDALT) to correct fleet reported problems with legacy Combat Control System software and hardware. Also will procure Weapons Launch System and Multi-tube Weapon System (MTWS). FY20 efforts support Submarine Launched Harpoon initiatives. (SSP) FY20 effort supports the TTWCS 5.6 update required to maintain compatibility with modernized TOMAHAWK missiles. The TTWCS updates are critical to the ability to fire Tomahawk missiles from the SSGNs. Funding is also for the Attack Weapon System Interface Simulator (AWIS) with connectivity which is used in the trainer and development labs to provide necessary inputs and feedback for the AWS. This will also allow the trainer to act as a Fleet Readiness Unit during fleet exercises.		

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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 / 04 / 5							P-1 Line Item Number / Title: 5420 / SSN Combat Control Systems								Aggregated Items Title: SSN Combat Control 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 (\$)	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) VB011: COMBAT SYSTEM TECH REFRESH/LEGACY INTEGRATION																				
1.1) VB011: ECP/AUXILLARY EQUIPMENT / LEGACY INTEGRATION	A		-	-	7.745	-	-	2.159	-	-	2.164	-	-	2.206	-	-	-	-	-	2.206
1.2) VB011: WEAPON LAUNCH SYSTEMS TECH INSERTION ⁽¹⁾	A		-	-	39.421	-	-	10.292	-	-	14.435	-	-	33.910	-	-	-	-	-	33.910
1.3) VB011: TACLAN/IA	A		-	-	136.245	-	-	12.735	-	-	12.977	-	-	13.238	-	-	-	-	-	13.238
Subtotal: 1) VB011: COMBAT SYSTEM TECH REFRESH/LEGACY INTEGRATION			-	-	183.411	-	-	25.186	-	-	29.576	-	-	49.354	-	-	-	-	-	49.354
2) VB800: ELECTRONIC CHARTING DISPLAY INFORMATION SYSTEM																				
2.1) VB800: ELECTRONIC CHARTING DISPLAY INFORMATION SYSTEM	A		-	-	6.148	-	-	3.269	-	-	3.334	-	-	3.400	-	-	-	-	-	3.400
Subtotal: 2) VB800: ELECTRONIC CHARTING DISPLAY INFORMATION SYSTEM			-	-	6.148	-	-	3.269	-	-	3.334	-	-	3.400	-	-	-	-	-	3.400
3) VB995: PRODUCTION ENGINEERING AND INITIAL TRAINING																				
3.1) VB995: PRODUCTION ENGINEERING AND INITIAL TRAINING	A		-	-	61.943	-	-	1.720	-	-	1.753	-	-	1.788	-	-	-	-	-	1.788
Subtotal: 3) VB995: PRODUCTION ENGINEERING AND INITIAL TRAINING			-	-	61.943	-	-	1.720	-	-	1.753	-	-	1.788	-	-	-	-	-	1.788
4) VB997: SSGN SUSTAINING SUPPORT																				
4.1) VB997: SSGN SUSTAINING SUPPORT ⁽²⁾	A		-	-	68.048	-	-	8.411	-	-	6.199	-	-	10.885	-	-	-	-	-	10.885
Subtotal: 4) VB997: SSGN SUSTAINING SUPPORT			-	-	68.048	-	-	8.411	-	-	6.199	-	-	10.885	-	-	-	-	-	10.885
5) VB700: PAYLOAD PROCUREMENT																				
5.1) VB700: PAYLOAD PROCUREMENT ^{(3)(†)}	A		-	-	-	874,000.00	1	0.874	891,480.00	3	2.674	909,309.60	3	2.728	-	-	-	909,309.60	3	2.728
Subtotal: 5) VB700: PAYLOAD PROCUREMENT			-	-	0.000	-	-	0.874	-	-	2.674	-	-	2.728	-	-	-	-	-	2.728
Total			-	-	319.550	-	-	39.460	-	-	43.536	-	-	68.155	-	-	-	-	-	68.155
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-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5	P-1 Line Item Number / Title: 5420 / SSN Combat Control Systems	Aggregated Items Title: SSN Combat Control Systems

(†) indicates the presence of a P-5a

Footnotes:

⁽¹⁾ 1.2) This funding includes the sustainment of the Common Weapon Launcher (CWL) for Block III and obsolescence management for Weapon Launcher Console Integrated Enclosure (WLCIE) on Virginia Blocks I and II across the FYDP. Funding increase in FY20 is due to ship alterations (all classes) in support of MK48 ADCAP torpedo APB-5+ and APB-6, increase in cybersecurity/safe roles and responsibilities (ship control controlled interface, Strike related issues, posture transition, Cybersecurity/Cybersafe review and implementation for TI-14, TI-16, TI-18), integration of Harpoon BLK 1C into the Payload Control System, increase in systems engineering effort for additional open baselines for all variants and submarine classes, Multi-Tube Weapon Simulator (MTWS) upgrades for Harpoon and MK48 ADCAP torpedo APB-5+ and APB-6 shipboard training, sustainment of the Common Weapon Launcher (CWL) for VA Class Block III, and obsolescence management of the Weapon Launcher Console Integrated Enclosure (WLCIE) on Virginia Blocks I and II. Funding Increase also supports WLCIE component replacements for components at End of Life. Additional funding for Submarine Launched Harpoon efforts was transferred from PMA 201 TO NAVSEA.

⁽²⁾ (SSP) The modernized TOMAHAWK supports emerging missions for which the SSGN is the prime platform for deployment. The TTWCS updates are critical to the ability to fire Tomahawk missiles from the SSGNs. The increase in funding from FY19 to FY20 is attributable to the TTWCS 5.6 update which is required to maintain compatibility with modernized TOMAHAWK missiles. The TTWCS updates are critical to the ability to fire Tomahawk missiles from the SSGNs. Funding also supports the Attack Weapon System Interface Simulator (AWIS) with connectivity which is used in the trainer and development labs to provide necessary inputs and feedback for the AWS. This will also allow the trainer to act as a Fleet Readiness Unit during fleet exercises.

⁽³⁾ 5.1) Beginning in FY18 shipset procurements and associated integration, verification, and validation efforts. Each shipset consists of 12 Unmanned Aerial Vehicles (UAVs) and associated shipboard components.

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5			P-1 Line Item Number / Title: 5420 / SSN Combat Control Systems						Aggregated Items: SSN Combat Control Systems			
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
5) VB700: PAYLOAD PROCUREMENT												
5.1) VB700: PAYLOAD PROCUREMENT ⁽³⁾		2018	NUWC Newport / Newport, RI	WR	** NO PCO **	Nov 2017	May 2018	1	874,000.00	N	Oct 2017	
5.1) VB700: PAYLOAD PROCUREMENT ⁽³⁾		2019	NUWC Newport / Newport, RI	WR	** NO PCO **	Nov 2018	May 2019	3	891,480.00	N	Oct 2018	
5.1) VB700: PAYLOAD PROCUREMENT ⁽³⁾		2020	NUWC Newport / Newport, RI	C / TBD	** NO PCO **	Nov 2019	May 2020	3	909,309.60	N	Oct 2019	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5					P-1 Line Item Number / Title: 5420 / SSN Combat Control Systems					Modification Number / Title: 1 / VB034 SSBN MODERNIZATION WITH AN/BYG-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>)	33.945	32.631	28.839	27.112	0.000	27.112	25.413	7.080	0.000	0.000	0.000	155.020
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	33.945	32.631	28.839	27.112	0.000	27.112	25.413	7.080	0.000	0.000	0.000	155.020
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	33.945	32.631	28.839	27.112	0.000	27.112	25.413	7.080	0.000	0.000	0.000	155.020
<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: SSBN 726 Class Submarines will be modernized from the CCS MK2 BLOCK 1C system to the TI/APB model. [EQUIPMENT] Funding is provided for the procurement and installation of SSBN AN/BYG-1 legacy modernization shipsets.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5				P-1 Line Item Number / Title: 5420 / SSN Combat Control Systems						Modification Number / Title: 1 / VB034 SSBN MODERNIZATION WITH AN/BYG-1			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: SSBN CLASS				Modification Type: UPGRADE				Related RDT&E PEs: 0604562N					
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: VB034 SSBN MODERNIZATION WITH AN/BYG-1													
B Kits													
Recurring													
1.1.1) EQUIPMENT - NonOrganic	5 / 21.095	3 / 12.990	2 / 8.825	3 / 13.502	- / -	3 / 13.502	1 / 4.590	- / -	- / -	- / -	- / -	14 / 61.002	
<i>Subtotal: Recurring</i>	- / 21.095	- / 12.990	- / 8.825	- / 13.502	- / -	- / 13.502	- / 4.590	- / -	- / -	- / -	- / 0.000	- / 61.002	
<i>Subtotal: VB034 SSBN MODERNIZATION WITH AN/ BYG-1</i>	5 / 21.095	3 / 12.990	2 / 8.825	3 / 13.502	- / -	3 / 13.502	1 / 4.590	- / -	- / -	- / -	- / -	14 / 61.002	
<i>Subtotal: Procurement, All Modification Items</i>	- / 21.095	- / 12.990	- / 8.825	- / 13.502	- / -	- / 13.502	- / 4.590	- / -	- / -	- / -	- / 0.000	- / 61.002	
Installation													
Modification Item 1 of 1: VB034 SSBN MODERNIZATION WITH AN/BYG-1	- / 12.850	- / 19.641	- / 20.014	- / 13.610	- / 0.000	- / 13.610	- / 20.823	- / 7.080	- / 0.000	- / 0.000	- / 0.000	- / 94.018	
<i>Subtotal: Installation</i>	- / 12.850	- / 19.641	- / 20.014	- / 13.610	- / -	- / 13.610	- / 20.823	- / 7.080	- / -	- / -	- / 0.000	- / 94.018	
Total													
Total Cost (Procurement + Support + Installation)	33.945	32.631	28.839	27.112	0.000	27.112	25.413	7.080	0.000	0.000	0.000	155.020	

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Exhibit P-3a, Individual Modification: PB 2020 Navy											Date: March 2019																				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5						P-1 Line Item Number / Title: 5420 / SSN Combat Control Systems						Modification Number / Title: 1 / VB034 SSBN MODERNIZATION WITH AN/BYG-1																			
ID Code (A=Service Ready, B=Not Service Ready) :											MDAP/MAIS Code:																				
Modification Item 1 of 1: VB034 SSBN MODERNIZATION WITH AN/BYG-1																															
Manufacturer Information																															
Manufacturer Name: Various												Manufacturer Location: Various																			
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																							
Delivery Dates		Mar 2019		Mar 2020		Mar 2021		Mar 2022																							
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 / 12.850	3 / 19.641	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	5 / 32.491																		
FY 2018		- / -	- / -	3 / 20.014	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 20.014																		
FY 2019		- / -	- / -	- / -	2 / 13.610	0 / 0.000	2 / 13.610	- / -	- / -	- / -	- / -	0 / 0.000	2 / 13.610																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	3 / 20.823	- / -	- / -	- / -	0 / 0.000	3 / 20.823																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 7.080	- / -	- / -	0 / 0.000	1 / 7.080																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2024		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		2 / 12.850	3 / 19.641	3 / 20.014	2 / 13.610	0 / 0.000	2 / 13.610	3 / 20.823	1 / 7.080	- / -	- / -	0 / 0.000	14 / 94.018																		
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	-	-	1	1	-	-	1	2	-	-	-	1	-	-	-	-	-	-	-	-	-	-	14
Out	2	-	-	1	2	-	-	1	2	-	-	1	1	-	-	1	2	-	-	-	1	-	-	-	-	-	-	-	-	-	14

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Exhibit P-3a, Individual Modification: PB 2020 Navy						Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5				P-1 Line Item Number / Title: 5420 / SSN Combat Control Systems				Modification Number / Title: 2 / VB034 SSBN MODERNIZATION TECH INSERTION			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:					
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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	13.491	23.740	17.197	5.191	59.619
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	13.491	23.740	17.197	5.191	59.619
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	13.491	23.740	17.197	5.191	59.619
(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:

This program will provide submarine combat control systems with COTS-based upgrades to combat control and tactical control hardware and software. Milestone Decision Authority (MDA) Production Reviews are held on an annual basis.

[EQUIPMENT] Funding is provided for the procurement and installation of SSBN AN/BYG-1 tech insertion shipsets.

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Exhibit P-3a, Individual Modification: PB 2020 Navy									Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5				P-1 Line Item Number / Title: 5420 / SSN Combat Control Systems					Modification Number / Title: 2 / VB034 SSBN MODERNIZATION TECH INSERTION				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: SSBN CLASS				Modification Type: SSBN CLASS				Related RDT&E PEs: 0604562N					
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: VB034 SSBN MODERNIZATION TECH INSERTION													
B Kits													
Recurring													
1.1.1) EQUIPMENT - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 13.491	4 / 13.761	2 / 7.018	- / -	10 / 34.270	
<i>Subtotal: Recurring</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / 13.491	- / 13.761	- / 7.018	- / 0.000	- / 34.270	
<i>Subtotal: VB034 SSBN MODERNIZATION TECH INSERTION</i>	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 13.491	4 / 13.761	2 / 7.018	- / -	10 / 34.270	
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / 13.491	- / 13.761	- / 7.018	- / 0.000	- / 34.270	
Installation													
Modification Item 1 of 1: VB034 SSBN MODERNIZATION TECH INSERTION	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 9.979	- / 10.179	- / 5.191	- / 25.349	
<i>Subtotal: Installation</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 9.979	- / 10.179	- / 5.191	- / 25.349	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	13.491	23.740	17.197	5.191	59.619	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5										P-1 Line Item Number / Title: 5420 / SSN Combat Control Systems										Modification Number / Title: 2 / VB034 SSBN MODERNIZATION TECH INSERTION											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: VB034 SSBN MODERNIZATION TECH INSERTION																															
Manufacturer Information																															
Manufacturer Name: VARIOUS															Manufacturer Location: Various																
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 2022				Mar 2023				Mar 2024					
Delivery Dates																		Mar 2023				Mar 2024				Mar 2025					
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		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2018		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2019		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2020		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2021		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2022		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		4 / 9.979		- / -		0 / 0.000		4 / 9.979								
FY 2023		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		4 / 10.179		0 / 0.000		4 / 10.179								
FY 2024		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		2 / 5.191		2 / 5.191								
To Complete		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
Total		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		4 / 9.979		4 / 10.179		2 / 5.191		10 / 25.349								
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	10
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	-	-	2	2	2	10

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5				P-1 Line Item Number / Title: 5420 / SSN Combat Control Systems						Modification Number / Title: 3 / VB034 TECHNOLOGY INSERTION (TI00/TI02 BASELINE) SSN774 CLASS		
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>	69.898	1.799	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	71.697
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	69.898	1.799	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	71.697
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	69.898	1.799	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	71.697
<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 program will provide upgrades for submarine combat systems with upgraded combat control and tactical control hardware and software. This program funds the procurement and installation of the first Virginia Class upgrade and, beginning in FY10, installation of the second and third upgrade kits as well as procurement and installation of all subsequent Virginia Class AN/BYG-1 upgrade kits. Milestone Decision Authority (MDA) Production Reviews are being held on an annual basis.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5				P-1 Line Item Number / Title: 5420 / SSN Combat Control Systems						Modification Number / Title: 3 / VB034 TECHNOLOGY INSERTION (TI00/TI02 BASELINE) SSN774 CLASS			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: TECHNOLOGY INSERTION (TI00/TI02 BASELINE) SSN774 CLASS				Modification Type: UPGRADE				Related RDT&E PEs: 0604562N					
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: VB034 TECHNOLOGY INSERTION (TI00/TI02 BASELINE) SSN774 CLASS													
B Kits													
Recurring													
1.1.1) EQUIPMENT - NonOrganic	10 / 54.983	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 54.983	
Subtotal: Recurring	- / 54.983	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 54.983	
Subtotal: VB034 TECHNOLOGY INSERTION (TI00/ TI02 BASELINE) SSN774 CLASS	10 / 54.983	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 54.983	
Subtotal: Procurement, All Modification Items	- / 54.983	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 54.983	
Installation													
Modification Item 1 of 1: VB034 TECHNOLOGY INSERTION (TI00/TI02 BASELINE) SSN774 CLASS	- / 14.915	- / 1.799	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 16.714	
Subtotal: Installation	- / 14.915	- / 1.799	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 16.714	
Total													
Total Cost (Procurement + Support + Installation)	69.898	1.799	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	71.697	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5										P-1 Line Item Number / Title: 5420 / SSN Combat Control Systems										Modification Number / Title: 3 / VB034 TECHNOLOGY INSERTION (TI00/TI02 BASELINE) SSN774 CLASS											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: VB034 TECHNOLOGY INSERTION (TI00/TI02 BASELINE) SSN774 CLASS																															
Manufacturer Information																															
Manufacturer Name: Various															Manufacturer Location: Various																
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																															
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 (<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		9 / 14.915		1 / 1.799		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		10 / 16.714					
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
Total		9 / 14.915		1 / 1.799		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		10 / 16.714					
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	9	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10
Out	9	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5	P-1 Line Item Number / Title: 5420 / SSN Combat Control Systems	Modification Number / Title: 4 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSGN CLASS

ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
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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>	22.053	0.000	6.356	11.186	0.000	11.186	4.796	0.000	0.000	0.000	0.000	44.391
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	22.053	0.000	6.356	11.186	0.000	11.186	4.796	0.000	0.000	0.000	0.000	44.391
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	22.053	0.000	6.356	11.186	0.000	11.186	4.796	0.000	0.000	0.000	0.000	44.391

(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:

This program will provide submarine combat control systems with COTS-based upgrades to combat control and tactical control hardware and software. Milestone Decision Authority (MDA) Production Reviews are held on an annual basis.

[EQUIPMENT] Funding is provided for the procurement and installation of SSGN AN/BYG-1 tech insertion shipsets.

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5					P-1 Line Item Number / Title: 5420 / SSN Combat Control Systems					Modification Number / Title: 4 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSGN CLASS			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: UPGRADES FROM TI04 AND OUT BASELINE SSGN CLASS				Modification Type: UPGRADE				Related RDT&E PEs: 0604562N					
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> VB034 UPGRADES FROM TI04 AND OUT BASELINE SSGN CLASS													
B Kits													
Recurring													
1.1.1) EQUIPMENT - NonOrganic	4 / 10.912	- / -	2 / 6.356	2 / 6.484	- / -	2 / 6.484	- / -	- / -	- / -	- / -	- / -	8 / 23.752	
<i>Subtotal: Recurring</i>	- / 10.912	- / -	- / 6.356	- / 6.484	- / -	- / 6.484	- / -	- / -	- / -	- / -	- / 0.000	- / 23.752	
<i>Subtotal: VB034 UPGRADES FROM TI04 AND OUT BASELINE SSGN CLASS</i>	4 / 10.912	- / -	2 / 6.356	2 / 6.484	- / -	2 / 6.484	- / -	- / -	- / -	- / -	- / -	8 / 23.752	
<i>Subtotal: Procurement, All Modification Items</i>	- / 10.912	- / -	- / 6.356	- / 6.484	- / -	- / 6.484	- / -	- / -	- / -	- / -	- / 0.000	- / 23.752	
Installation													
<i>Modification Item 1 of 1:</i> VB034 UPGRADES FROM TI04 AND OUT BASELINE SSGN CLASS	- / 11.141	- / 0.000	- / 0.000	- / 4.702	- / 0.000	- / 4.702	- / 4.796	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 20.639	
<i>Subtotal: Installation</i>	- / 11.141	- / -	- / -	- / 4.702	- / -	- / 4.702	- / 4.796	- / -	- / -	- / -	- / 0.000	- / 20.639	
Total													
Total Cost (Procurement + Support + Installation)	22.053	0.000	6.356	11.186	0.000	11.186	4.796	0.000	0.000	0.000	0.000	44.391	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5										P-1 Line Item Number / Title: 5420 / SSN Combat Control Systems										Modification Number / Title: 4 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSGN CLASS											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: VB034 UPGRADES FROM TI04 AND OUT BASELINE SSGN CLASS																															
Manufacturer Information																															
Manufacturer Name: Various															Manufacturer Location: Various																
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 2019				Mar 2020																					
Delivery Dates						Mar 2020				Mar 2021																					
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		4 / 11.141		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		4 / 11.141					
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2019		- / -		- / -		- / -		2 / 4.702		0 / 0.000		2 / 4.702		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 4.702					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		2 / 4.796		- / -		- / -		- / -		- / -		0 / 0.000		2 / 4.796					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
Total		4 / 11.141		- / -		- / -		2 / 4.702		0 / 0.000		2 / 4.702		2 / 4.796		- / -		- / -		- / -		- / -		0 / 0.000		8 / 20.639					
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	1	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
Out	4	-	-	-	-	-	-	-	-	-	-	1	1	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	8

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Navy						Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5				P-1 Line Item Number / Title: 5420 / SSN Combat Control Systems				Modification Number / Title: 5 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN21 CLASS			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:					
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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>)	23.698	7.565	4.513	0.000	0.000	0.000	0.000	3.392	8.345	8.511	5.082	61.106
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	23.698	7.565	4.513	0.000	0.000	0.000	0.000	3.392	8.345	8.511	5.082	61.106
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	23.698	7.565	4.513	0.000	0.000	0.000	0.000	3.392	8.345	8.511	5.082	61.106
(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:

This program will provide submarine combat control systems with COTS-based upgrades to combat control and tactical control hardware and software. Milestone Decision Authority (MDA) Production Reviews are held on an annual basis.

[EQUIPMENT] Funding is provided for the procurement and installation of SEAWOLF AN/BYG-1 tech insertion shipsets.

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Exhibit P-3a, Individual Modification: PB 2020 Navy									Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5				P-1 Line Item Number / Title: 5420 / SSN Combat Control Systems					Modification Number / Title: 5 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN21 CLASS				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: UPGRADES FROM TI04 AND OUT BASELINE SSN21 CLASS				Modification Type: UPGRADE				Related RDT&E PEs: 0604562N					
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> VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN21 CLASS													
B Kits													
Recurring													
1.1.1) EQUIPMENT - NonOrganic	5 / 13.407	1 / 3.137	- / -	- / -	- / -	- / -	- / -	1 / 3.392	1 / 3.460	1 / 3.529	- / -	9 / 26.925	
<i>Subtotal: Recurring</i>	- / 13.407	- / 3.137	- / -	- / -	- / -	- / -	- / -	- / 3.392	- / 3.460	- / 3.529	- / 0.000	- / 26.925	
<i>Subtotal: VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN21 CLASS</i>	5 / 13.407	1 / 3.137	- / -	- / -	- / -	- / -	- / -	1 / 3.392	1 / 3.460	1 / 3.529	- / -	9 / 26.925	
<i>Subtotal: Procurement, All Modification Items</i>	- / 13.407	- / 3.137	- / -	- / -	- / -	- / -	- / -	- / 3.392	- / 3.460	- / 3.529	- / 0.000	- / 26.925	
Installation													
<i>Modification Item 1 of 1:</i> VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN21 CLASS	- / 10.291	- / 4.428	- / 4.513	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 4.885	- / 4.982	- / 5.082	- / 34.181	
<i>Subtotal: Installation</i>	- / 10.291	- / 4.428	- / 4.513	- / -	- / -	- / -	- / -	- / -	- / 4.885	- / 4.982	- / 5.082	- / 34.181	
Total													
Total Cost (Procurement + Support + Installation)	23.698	7.565	4.513	0.000	0.000	0.000	0.000	3.392	8.345	8.511	5.082	61.106	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5										P-1 Line Item Number / Title: 5420 / SSN Combat Control Systems										Modification Number / Title: 5 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN21 CLASS											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN21 CLASS																															
Manufacturer Information																															
Manufacturer Name: Various															Manufacturer Location: Various																
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 2022				Mar 2023				Mar 2024									
Delivery Dates		Mar 2019												Mar 2023				Mar 2024				Mar 2025									
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		4 / 10.291		1 / 4.428		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		5 / 14.719					
FY 2018		- / -		- / -		1 / 4.513		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		1 / 4.513					
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 4.885		- / -		0 / 0.000		1 / 4.885							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 4.982		0 / 0.000		1 / 4.982					
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 5.082		1 / 5.082					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
Total		4 / 10.291		1 / 4.428		1 / 4.513		- / -		- / -		- / -		- / -		- / -		1 / 4.885		1 / 4.982		1 / 5.082		9 / 34.181							
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	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	1	9
Out	4	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	1	9

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Exhibit P-3a, Individual Modification: PB 2020 Navy						Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5				P-1 Line Item Number / Title: 5420 / SSN Combat Control Systems				Modification Number / Title: 6 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN688 CLASS			

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)	206.070	18.853	37.160	34.637	0.000	34.637	15.562	16.989	50.848	40.098	6.738	426.955
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	206.070	18.853	37.160	34.637	0.000	34.637	15.562	16.989	50.848	40.098	6.738	426.955
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	206.070	18.853	37.160	34.637	0.000	34.637	15.562	16.989	50.848	40.098	6.738	426.955
(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:

This program will provide submarine combat control systems with COTS-based upgrades to combat control and tactical control hardware and software. Milestone Decision Authority (MDA) Production Reviews are held on an annual basis.

[EQUIPMENT] Funding is provided for the procurement and installation of SSN 688 tech insertion AN/BYG-1 shipsets.

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5				P-1 Line Item Number / Title: 5420 / SSN Combat Control Systems						Modification Number / Title: 6 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN688 CLASS			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: UPGRADES FROM TI04 AND OUT BASELINE SSN688 CLASS				Modification Type: UPGRADE				Related RDT&E PEs: 0604562N					
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: VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN688 CLASS													
B Kits													
Recurring													
1.1.1) EQUIPMENT - NonOrganic	37 / 103.056	6 / 18.853	6 / 19.211	5 / 16.329	- / -	5 / 16.329	- / -	5 / 16.989	10 / 34.658	2 / 7.070	- / -	71 / 216.166	
Subtotal: Recurring	- / 103.056	- / 18.853	- / 19.211	- / 16.329	- / -	- / 16.329	- / -	- / 16.989	- / 34.658	- / 7.070	- / 0.000	- / 216.166	
Subtotal: VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN688 CLASS	37 / 103.056	6 / 18.853	6 / 19.211	5 / 16.329	- / -	5 / 16.329	- / -	5 / 16.989	10 / 34.658	2 / 7.070	- / -	71 / 216.166	
Subtotal: Procurement, All Modification Items	- / 103.056	- / 18.853	- / 19.211	- / 16.329	- / -	- / 16.329	- / -	- / 16.989	- / 34.658	- / 7.070	- / 0.000	- / 216.166	
Installation													
Modification Item 1 of 1: VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN688 CLASS	- / 103.014	- / 0.000	- / 17.949	- / 18.308	- / 0.000	- / 18.308	- / 15.562	- / 0.000	- / 16.190	- / 33.028	- / 6.738	- / 210.789	
Subtotal: Installation	- / 103.014	- / -	- / 17.949	- / 18.308	- / -	- / 18.308	- / 15.562	- / -	- / 16.190	- / 33.028	- / 6.738	- / 210.789	
Total													
Total Cost (Procurement + Support + Installation)	206.070	18.853	37.160	34.637	0.000	34.637	15.562	16.989	50.848	40.098	6.738	426.955	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5					P-1 Line Item Number / Title: 5420 / SSN Combat Control Systems										Modification Number / Title: 6 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN688 CLASS																
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:																					
Modification Item 1 of 1: VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN688 CLASS																															
Manufacturer Information																															
Manufacturer Name: Various										Manufacturer Location: Various																					
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 2022	Mar 2023	Mar 2024																								
Delivery Dates	Mar 2019	Mar 2020	Mar 2021		Mar 2023	Mar 2024	Mar 2025																								
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	37 / 103.014	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	37 / 103.014																			
FY 2018	- / -	- / -	6 / 17.949	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	6 / 17.949																			
FY 2019	- / -	- / -	- / -	6 / 18.308	0 / 0.000	6 / 18.308	- / -	- / -	- / -	- / -	0 / 0.000	6 / 18.308																			
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	5 / 15.562	- / -	- / -	- / -	0 / 0.000	5 / 15.562																			
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 16.190	- / -	0 / 0.000	5 / 16.190																			
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 33.028	0 / 0.000	10 / 33.028																			
FY 2024	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 6.738	2 / 6.738																			
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
Total	37 / 103.014	- / -	6 / 17.949	6 / 18.308	0 / 0.000	6 / 18.308	5 / 15.562	- / -	5 / 16.190	10 / 33.028	2 / 6.738	71 / 210.789																			
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	37	-	-	-	-	-	3	3	-	-	3	3	-	-	3	2	-	-	-	-	-	-	3	2	-	-	5	5	-	2	71
Out	37	-	-	-	-	-	-	3	3	-	-	3	3	-	-	3	2	-	-	-	-	-	-	3	2	-	-	5	5	2	71

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5					P-1 Line Item Number / Title: 5420 / SSN Combat Control Systems					Modification Number / Title: 7 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS		
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>)	59.605	46.664	5.499	7.457	0.000	7.457	17.119	27.164	5.952	40.357	13.987	223.804
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	59.605	46.664	5.499	7.457	0.000	7.457	17.119	27.164	5.952	40.357	13.987	223.804
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	59.605	46.664	5.499	7.457	0.000	7.457	17.119	27.164	5.952	40.357	13.987	223.804
<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 program will provide submarine combat control systems with COTS-based upgrades to combat control and tactical control hardware and software. Milestone Decision Authority (MDA) Production Reviews are held on an annual basis. [EQUIPMENT] Funding is provided for the procurement and installation of VA Class AN/BYG-1 tech insertion shipsets.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5				P-1 Line Item Number / Title: 5420 / SSN Combat Control Systems						Modification Number / Title: 7 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS				Modification Type: UPGRADE				Related RDT&E PEs: 0604562N					
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> VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS													
B Kits													
Recurring													
1.1.1) EQUIPMENT - NonOrganic ⁽⁴⁾	8 / 56.075	5 / 35.871	- / -	1 / 7.457	- / -	1 / 7.457	2 / 15.212	3 / 23.274	- / -	5 / 40.357	- / -	24 / 178.246	
<i>Subtotal: Recurring</i>	- / 56.075	- / 35.871	- / -	- / 7.457	- / -	- / 7.457	- / 15.212	- / 23.274	- / -	- / 40.357	- / 0.000	- / 178.246	
<i>Subtotal: VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS</i>	8 / 56.075	5 / 35.871	- / -	1 / 7.457	- / -	1 / 7.457	2 / 15.212	3 / 23.274	- / -	5 / 40.357	- / -	24 / 178.246	
<i>Subtotal: Procurement, All Modification Items</i>	- / 56.075	- / 35.871	- / -	- / 7.457	- / -	- / 7.457	- / 15.212	- / 23.274	- / -	- / 40.357	- / 0.000	- / 178.246	
Installation													
<i>Modification Item 1 of 1:</i> VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS	- / 3.530	- / 10.793	- / 5.499	- / 0.000	- / 0.000	- / 0.000	- / 1.907	- / 3.890	- / 5.952	- / 0.000	- / 13.987	- / 45.558	
<i>Subtotal: Installation</i>	- / 3.530	- / 10.793	- / 5.499	- / -	- / -	- / -	- / 1.907	- / 3.890	- / 5.952	- / -	- / 13.987	- / 45.558	
Total													
Total Cost (Procurement + Support + Installation)	59.605	46.664	5.499	7.457	0.000	7.457	17.119	27.164	5.952	40.357	13.987	223.804	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5										P-1 Line Item Number / Title: 5420 / SSN Combat Control Systems										Modification Number / Title: 7 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS																															
Manufacturer Information																															
Manufacturer Name: Various															Manufacturer Location: Various																
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 2020				Mar 2021				Mar 2022								Mar 2024					
Delivery Dates		Mar 2019								Mar 2021				Mar 2022				Mar 2023								Mar 2025					
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 / 3.530		6 / 10.793		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		8 / 14.323					
FY 2018		- / -		- / -		3 / 5.499		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		2 / 3.666		5 / 9.165					
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		1 / 1.907		- / -		- / -		- / -		- / -		0 / 0.000		1 / 1.907					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		2 / 3.890		- / -		- / -		- / -		0 / 0.000		2 / 3.890					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		3 / 5.952		- / -		- / -		0 / 0.000		3 / 5.952					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		5 / 10.321		5 / 10.321					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
Total		2 / 3.530		6 / 10.793		3 / 5.499		- / -		- / -		- / -		1 / 1.907		2 / 3.890		3 / 5.952		- / -		- / -		7 / 13.987		24 / 45.558					
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	3	-	-	2	1	-	-	-	-	-	-	1	-	-	-	1	1	-	-	2	1	-	-	-	-	-	7	24
Out	2	-	-	3	3	-	-	2	1	-	-	-	-	-	-	1	-	-	-	1	1	-	-	2	1	-	-	-	-	7	24
Footnotes: ⁽⁴⁾ The two additional Virginia Class (VA) SWFTS shipsets procured in FY18 by congressional direction, will be installed in FY19 with funds obtained via below threshold reprogramming.																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy						Date: March 2019					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5				P-1 Line Item Number / Title: 5420 / SSN Combat Control Systems				Modification Number / Title: 8 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS W/ CWL			

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	0.000	0.000	0.000	69.617	41.946	6.214	36.940	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	0.000	0.000	0.000	0.000	0.000	0.000	69.617	41.946	6.214	36.940	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	0.000	0.000	0.000	0.000	0.000	0.000	69.617	41.946	6.214	36.940	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:

This program will provide submarine combat control systems with COTS-based upgrades to combat control and tactical control hardware and software and Common Weapon Launcher (CWL). Milestone Decision Authority (MDA) Production Reviews are held on an annual basis.

[EQUIPMENT] Funding is provided for the procurement and installation of VA Class Common Weapons Launcher AN/BYG-1 tech insertion shipsets.

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5				P-1 Line Item Number / Title: 5420 / SSN Combat Control Systems						Modification Number / Title: 8 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS W/ CWL			
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: VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS W/CWL</i>													
B Kits													
Recurring													
1.1.1) EQUIPMENT - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	6 / 69.617	2 / 23.670	- / -	3 / 36.940	Continuing	Continuing	
<i>Subtotal: Recurring</i>	<i>- / 0.000</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 69.617</i>	<i>- / 23.670</i>	<i>- / -</i>	<i>- / 36.940</i>	<i>Continuing</i>	<i>Continuing</i>	
<i>Subtotal: VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS W/CWL</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>6 / 69.617</i>	<i>2 / 23.670</i>	<i>- / -</i>	<i>3 / 36.940</i>	<i>Continuing</i>	<i>Continuing</i>	
<i>Subtotal: Procurement, All Modification Items</i>	<i>- / 0.000</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 69.617</i>	<i>- / 23.670</i>	<i>- / -</i>	<i>- / 36.940</i>	<i>Continuing</i>	<i>Continuing</i>	
Installation													
<i>Modification Item 1 of 1: VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS W/CWL</i>	<i>- / 0.000</i>	<i>- / 0.000</i>	<i>- / 0.000</i>	<i>- / 0.000</i>	<i>- / 0.000</i>	<i>- / 0.000</i>	<i>- / 0.000</i>	<i>- / 18.276</i>	<i>- / 6.214</i>	<i>- / 0.000</i>	<i>- / 9.697</i>	<i>- / 34.187</i>	
<i>Subtotal: Installation</i>	<i>- / 0.000</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 18.276</i>	<i>- / 6.214</i>	<i>- / -</i>	<i>- / 9.697</i>	<i>- / 34.187</i>	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	0.000	0.000	0.000	0.000	69.617	41.946	6.214	36.940	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5										P-1 Line Item Number / Title: 5420 / SSN Combat Control Systems										Modification Number / Title: 8 / VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS W/ CWL											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: VB034 UPGRADES FROM TI04 AND OUT BASELINE SSN774 CLASS W/CWL																															
Manufacturer Information																															
Manufacturer Name: Various															Manufacturer Location: Various																
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 2021				Mar 2022								Mar 2024					
Delivery Dates														Mar 2022				Mar 2023								Mar 2025					
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		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		6 / 18.276		- / -		- / -		0 / 0.000		6 / 18.276					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		2 / 6.214		- / -		0 / 0.000		2 / 6.214					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		3 / 9.697		3 / 9.697					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		- / -					
Total		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		6 / 18.276		2 / 6.214		- / -		3 / 9.697		11 / 34.187					
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	-	-	1	1	-	-	-	-	-	3	11
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	-	-	1	1	-	-	-	-	3	11

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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 04: Ordnance Support Equipment / BSA 5: ASW Support Equipment							P-1 Line Item Number / Title: 5429 / ASW Support 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>)	74.179	23.209	19.436	21.130	0.000	21.130	25.691	24.414	23.751	24.225	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	74.179	23.209	19.436	21.130	0.000	21.130	25.691	24.414	23.751	24.225	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	74.179	23.209	19.436	21.130	0.000	21.130	25.691	24.414	23.751	24.225	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 \$2.944 million to account for the availability of prior year execution balances. This Budget Line Item (BLI) consists of three separate and distinct programs, the Submarine Weapons Launching and Handling Support Equipment program, the Surface ASW Support Equipment program, and the ASW Range Support Equipment program. SUB WEAPONS LAUNCHING / HANDLING SUPPORT EQUIPMENT (Cost Codes VC000/VC830/VC5IN): Funding for modifications and improvements to SSN 688, SSBN 726 and SSN 21 classes Attack and Ballistic Missile Submarine weapons launching, stowage and shipping systems, torpedo tube system components and torpedo tube test equipment. These requirements arise as a result of the introduction of new or modified weapons, devices, and sensors and their subsequent evaluation test and operational use. Also procured are reliability, maintainability, functional and safety modifications and tactical improvements resulting from operational use experience. This funding also provides management services required for installations. SURFACE ASW SUPPORT EQUIPMENT (Cost Codes VC008/VC009/VC900/VC6IN): Funding to procure Reliability, Maintainability and Availability (RM&A) and safety modifications through the Ordnance Alteration (ORDALT) process to Anti-Submarine Warfare (ASW) Fire Control, Surface Vessel Torpedo Tubes (SVTT), and related ASW Fire Control/SVTT support and test equipment to maintain the current performance envelope. Modification requirements arise as a result of evaluation, testing, and Fleet use of existing, new, or modified ASW weapons and/or related systems and subsystems. Included in this line item are all related procurements for training and simulation equipment required for the continued operation of this equipment. ORDALT procurements are highly variable and dependent on shipboard configurations and equipment age. SURFACE ASW SUPPORT EQUIPMENT (Cost Codes VC008/VC009/VC900/VC6IN) FY 2019 TO FY 2020 INCREASE STATEMENT: - FY 2019 (\$3.718M) to FY 2020 (\$3.808M) increase (+\$0.090M) is in line with inflation associated with the OPN appropriation. ASW RANGE SUPPORT EQUIPMENT (Cost Codes VC001/VC002/VC007/VC831/VC832/VC851/VC970): ASW range support equipment includes self-propelled surface targets, towed surface targets, and associated target augmentation to mimic threats and/or provide feedback. Self-propelled surface targets include the High Speed Maneuverable Surface Target (HSMST), Fast Attack Craft Target (FACT), and Ship Deployable Surface Target (SDST). Towed surface targets include the Low Cost Modular Target (LCMT) and Polyethylene Tow Target (PETT). Funding is also for the procurement of underwater tracking and shore equipment, Test and Evaluation (T&E), acoustic trial range equipment, and weapon system and test equipment. Equipment procured includes instrumentation for US Fleet Operational Readiness Accuracy Check Sites (FORACS) Program, equipment required to conduct fleet exercises at fixed and portable ranges for the Underwater Tracking Range Equipment (UTRE)/Pinger Program, and equipment 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 04: Ordnance Support Equipment / BSA 5: ASW Support Equipment		P-1 Line Item Number / Title: 5429 / ASW Support 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		
the Surface Ship Radiated Noise Measurement (SSRNM) Program. Training and T&E ranges include; Southern California Offshore Range (SCORE), Barking Sands Tactical Underwater Range/Barking Sands Underwater Range Extension (BARSTUR/BSURE), Atlantic Underwater Test and Evaluation Center (AUTEC), Pacific Northwest Range Complex (Dabob/Nanoose ranges operated by Naval Undersea Warfare Center Division Keyport, Washington). UTRE ranges include Portable Offshore Training Range (POTR) and Portable Undersea Training Range (PUTR). FORACS ranges include; Andros Island and Southern California.		
ASW RANGE SUPPORT EQUIPMENT (Cost Codes VC001/VC002/VC007/VC831/VC832/VC851/VC970) FY 2019 TO FY 2020 INCREASE STATEMENT: - FY 2019 (\$12.856M) to FY 2020 (\$14.927M) increase (+\$2.071M) is mainly due to HSMST (VC005) increased quantity from 30 to 38 from FY 2019 to FY 2020 (+\$1.765M). Change in unit cost increased at rate of inflation.		
[P40A / VC000 - SUB WEAPONS LAUNCH/HANDLING SUPPORT]: VC000 - SUB WEAPONS LAUNCH/HANDLING SUPPORT The Submarine Torpedo Tube Support category funds in-service support and alteration procurements for all submarine Torpedo Tubes (TT), Torpedo Ejection Pumps (TEP), Internal Countermeasure Launchers (ICL), and Weapons Stowage and Handling Systems (WSHS). Development efforts under this item number include Engineering Change Proposals (ECP), ORDALTs, Type Zero (TZ) kits and Test Equipment and alteration material procurement to correct significant deficiencies in equipment affecting personnel safety, ship safety and system performance.		
[P40A / VC830 - PRODUCTION ENGINEERING]: VC830 - PRODUCTION ENGINEERING Production engineering includes resolving Liaison Action Requests (LARs) configure/test assembly in lab prior to ship installation and in-shop engineering support of vendor testing.		
[P40A / VC5IN O/A INSTALLATION]: VC5IN O/A 18000 INSTALL Installing agents will be various Naval Shipyards and contractors. Contracted installations require funding for management of installations during the availabilities. All installations will be on SSBN and SSN688/21 Class Submarines.		
[P40A - 2 / VC008 - ASWCS FIRE CONTROL ORDALTs]: SURFACE ASW SUPPORT EQUIPMENT VC008 Cost Elements/Descriptions as follows: ASWCS - UCFS/FIRE CONTROL ORDALTs: Provides funding for ORDALT kits for the ASW Underwater Control Functional Segment (UCFS), ASW Control System (ASWCS) MK116 Mod 7, Torpedo Setting Panel (MK331), and the Torpedo Pre-Setter Test Set (MK432). ORDALT procurements include a MK432 Mod 6 test set which provides for the addition of wide angle display, cable terminations and tech refresh of obsolete motherboard parts. Also provides material support at multiple land-based laboratories as well as material support for upgrades and calibrations. Procurements will ensure laboratories are at Fleet baseline configurations. ASWCS - PRODUCTION ENGINEERING SUPPORT: Provides the necessary production engineering support funds to cover the associated Integrated Logistics Support (ILS) elements, Engineering Change Proposal (ECP) reviews, Engineering Changes (EC), Ship Change Documents (SCDs), and engineering audits for ASW Fire Control. Reviews and approves internal and external system interfaces (hardware and integration related) and identify interface issues. ASWCS - ACCEPTANCE TEST & EVALUATION: Provides the in-house acceptance test and evaluation funding associated with the safety and quality assurance testing of all ASW Fire Control, Alteration Equivalent to Repairs (AERs), ECPs, ECs, and SCDs.		
[P40A - 2 / VC009 - TORPEDO TUBE ORDALTs]: SURFACE ASW SUPPORT EQUIPMENT VC009 Cost Elements/Descriptions as follows: SVTT - MK32 ORDALTs: The SVTT MK32 is an over-the-side torpedo defense surface ship launched system that conducts close-in ASW operations. This line provides funding for SVTT MK32 launchers, Torpedo Loading Trays (TLTs), and ancillary equipment for testing, training, and maintainability on select surface ship combatants. ORDALT procurements include: Emergency Fire Circuit and Mount to Magazine Door Interoperability Circuit Improvements (SVTT MK32 Mod 19 only - ORDALT 76463); Overheat Sensor Test Set (SVTT MK32 Mod 15 Only - ORDALT 412-01-019); Torpedo MK54 SVTT Upgrades (SVTT MK32 Mods 14 Only - ORDALT 76008); Breech Mechanism Control Valve Redesign (SVTT MK32 All Mods - ORDALT TBD); Over-Heat Sensor Assembly Modification (SVTT MK32 Mod 15 Only - ORDALT 412-05-015); Training Gear Handcrank Support Improvements (SVTT MK32 Mods 15 Only - ORDALT TBD) and Air Charging Panel Regulator Improvements (SVTT MK32 MOD 15 Only - ORDALT		

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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 04: Ordnance Support Equipment / BSA 5: ASW Support Equipment		P-1 Line Item Number / Title: 5429 / ASW Support 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		
TBD). Procure SVTT shoresite laboratory equipment for Launcher System Facilities (LSF). LSFs are used to simulate shipboard conditions for over-the-side torpedo launchers, as well as for the creation of the required ORDALTs.		
SVTT - PRODUCTION ENGINEERING: Provides the necessary production engineering support funds to cover the associated Integrated Logistics Support (ILS) elements, Engineering Change Proposal (ECP) reviews, Engineering Changes (EC), SCDs, and engineering audits for SVTT ORDALTs.		
SVTT - ACCEPTANCE TEST & EVALUATION: Provides the in-house acceptance test and evaluation funding required for the safety and quality assurance testing of all SVTT ORDALTs, Alteration Equivalent to Repairs (AERs), ECPs, ECs, and SCDs.		
[P40A - 2 / VC900 - CONSULTING SERVICES]: SURFACE ASW SUPPORT EQUIPMENT VC900 Cost Element/Description as Follows:		
Provides the necessary funding for consulting services required to support scheduling of ASW Fire Control and SVTT ORDALT production, test, and installation efforts in conjunction with operation, safety, and environmental requirements.		
[P40A - 2 / VC6IN - INSTALLATION OF EQUIPMENT - N96]: SURFACE ASW SUPPORT EQUIPMENT VC6IN Cost Element/Description as follows:		
Funds the installation of all ASW Fire Control (under Cost Code VC008) and SVTT (under Cost Code VC009) ORDALTs/SCDs. ORDALT/SCD Alteration Installation Team (AIT) pier-side installations are variable and contingent on Type Commander (TYCOM), Ships' Scheduling Conference (SSC), and ships' availability.		
[P40A - 3 / ASW Range Support Equipment (3)]: ANTI-SUBMARINE WARFARE (ASW) RANGE EQUIPMENT:		
Funding for self-propelled surface targets, towed surface targets, and associated target augmentation to mimic threats and/or provide feedback. Self-propelled surface targets include the High Speed Maneuverable Surface Target (HSMST), Fast Attack Craft Target (FACT), and Ship Deployable Surface Target (SDST). Towed surface targets include the Low Cost Modular Target (LCMT) and Polyethylene Tow Target (PETT). (Targets)		
Funding also provides Surface Ship Radiated Noise Measurement (SSRNM) & US Fleet Operational Readiness Accuracy Check Sites (FORACS) test and evaluation capability for surface ships and submarines; Underwater Tracking Range Equipment (UTRE)/Pinger Program provides tracking equipment for systems, platforms, torpedoes and targets on all Navy Underwater Tracking Ranges, including portable tracking systems supporting test and training events. (S05)		
[P40A - 3 / VC001 - Surface Ship Radiated Noise Measurement (SSRNM)/US Fleet Operational Readiness Accuracy Check Sites (FORACS) - N96]: Funding provides for the procurement of range communication systems, ship auto-tracking system, Surface Ship Acoustic Range Equipment, and upgraded ship position tracking system for the Surface Ship Radiated Noise Measurement (SSRNM) and US Fleet Operational Readiness Accuracy Check Sites (FORACS) programs. Funding also provides for improvements, modernizations, and upgrades to systems and equipment. (S05)		
[P40A - 3 / VC002 - UNDERWATER TRACKING RANGE EQUIPMENT (UTRE)/Pinger - N94]: Funding provides for the Underwater Tracking Range Equipment (UTRE)/Pinger program for the procurement of underwater tracking equipment for fixed and portable tracking systems, both CONUS and OCONUS, shop special Pinger purpose test equipment, and the associated ancillary hardware required to track ships and submarines during Fleet training exercises. Funding provides tracking equipment for systems, platforms, torpedoes and targets on all Navy Underwater Tracking Ranges, including portable tracking systems supporting test and training events for Forward Deployed Naval Forces (FDNF). Funding also provides for improvements, modernizations, and upgrades to systems and equipment. Funding plus-up starting in FY14 is for an obsolescence driven upgrade to the submarine Underwater Tracking System (UTS). Funding will provide for procurement of underwater tracking equipment for submarines including 65 UTS shipboard units, TEMPALT modifications and training. (S05) Funding transferred from N98 to N94 FY19 and out.		
[P40A - 3 / VC003 - TOWED TARGETS]: The Fleet requires low cost expendable towed targets for weapon system T&E and Fleet training. The Low Cost Modular Target (LCMT) and the Polyethylene Tow Target (PETT) are the primary towed targets used to meet these 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 04: Ordnance Support Equipment / BSA 5: ASW Support Equipment		P-1 Line Item Number / Title: 5429 / ASW Support 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 - 3 / VC004 - INSTRUMENTATION]: Seaborne target augmentation systems include transponders (i.e. transmitters/receivers), radar reflectors, Radio Frequency (RF) emitters and Ground Support Equipment (GSE). Various electronic components provide the interface for the target control systems with the control stations/facilities for drone operations. RF emitters and radar reflectors enhance target threat replication and provide the required stimulus for anti-surface/radar weapons systems. [P40A - 3 / VC005 - HSMST (HIGH SPEED MANEUVERABLE SURFACE TARGET)]: Provides the user with a medium to high speed remote controlled surface target with a high degree of maneuverability. It has a form fitted collar surrounding the deck area of the aluminum hull. This target can exceed 45 knots in a calm sea and approaches 40 knots in a sea state 3. [P40A - 3 / VC006 - SDST (Ship Deployable Surface Target)]: SDST (Ship Deployable Surface Target) is used to support Fleet training and T&E exercises. This target supports training requirements of deploying ships and aircraft and surface gunnery requirements. [P40A - 3 / VC007 - FACT (Fast Attack Craft Target)]: FACT (Fast Attack Craft Target) is required to meet T&E requirements for weapon systems tests and Fleet training. The exercises require a target to represent missile capable patrol craft operating at speeds of 50 knots in sea state 2 conditions. [P40A - 3 / VC831/2 - PRODUCTION ENGINEERING]: Funding provides for Production Engineering performed by a field activity or contractor during the production phase of these projects. (S05) & (Ships) Funding transferred from N98 to N94 FY19 and out. [P40A - 3 / VC851 - PRODUCT IMPROVEMENT]: Funding provides for Product Improvement performed by a field activity or contractor during the production phase of these projects. (S05) Funding transferred from N98 to N94 FY19 and out. [P40A - 3 / VC970 - INTEGRATED LOGISTICS SUPPORT]: Funding provides for logistics spares and repair parts.		

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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 04: Ordnance Support Equipment / BSA 5: ASW Support Equipment						P-1 Line Item Number / Title: 5429 / ASW Support 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	SUB WEAPONS LAUNCHING/HANDLING SUPPORT EQUIPMENT				- / 11.116	- / 3.930	- / 2.862	- / 2.395	- / -	- / 2.395
P-40a	SURFACE ASW SUPPORT EQUIPMENT				- / 10.900	- / 3.680	- / 3.718	- / 3.808	- / -	- / 3.808
P-40a	ASW Range Support Equipment (3)	P-5a			- / 52.163	- / 15.599	- / 12.856	- / 14.927	- / -	- / 14.927
P-40	Total Gross/Weapon System Cost				- / 74.179	- / 23.209	- / 19.436	- / 21.130	- / 0.000	- / 21.130
*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: SURFACE ASW SUPPORT EQUIPMENT (Cost Codes VC008/VC009/VC900/VC6IN): Funding to procure Reliability, Maintainability and Availability (RM&A) and safety modifications through the Ordnance Alteration (ORDALT) process to Anti-Submarine Warfare (ASW) Fire Control, Surface Vessel Torpedo Tubes (SVTT), and related ASW Fire Control/SVTT support and test equipment to maintain the current performance envelope. Modification requirements arise as a result of evaluation, testing, and Fleet use of existing, new, or modified ASW weapons and/or related systems and subsystems. Included in this line item are all related procurements for training and simulation equipment required for the continued operation of this equipment. ORDALT procurements are highly variable and dependent on shipboard configurations and equipment age. SURFACE ASW SUPPORT EQUIPMENT (Cost Codes VC008/VC009/VC900/VC6IN) FY 2019 TO FY 2020 INCREASE STATEMENT: - FY 2019 (\$3.718M) to FY 2020 (\$3.808M) increase (\$+0.090M) is in line with inflation associated with the OPN appropriation. ASW RANGE SUPPORT EQUIPMENT (Cost Codes VC001/VC002/VC007/VC831/VC832/VC851/VC970) FY 2019 TO FY 2020 INCREASE STATEMENT: - FY 2019 (\$12.856M) to FY 2020 (\$14.927M) increase (+\$2.071M) is mainly due to HSMST (VC005) increased quantity from 30 to 38 from FY 2019 to FY 2020 (+\$1.765M). Change in unit cost increased at rate of inflation.										

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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 / 04 / 5							P-1 Line Item Number / Title: 5429 / ASW Support Equipment								Aggregated Items Title: SUB WEAPONS LAUNCHING/ HANDLING SUPPORT 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 (\$)	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) VC000 - SUB WEAPONS LAUNCH/HANDLING SUPPORT																				
1.1) 2J COG MATERIAL	A		-	-	0.414	-	-	0.081	-	-	0.101	-	-	0.082	-	-	-	-	-	0.082
1.2) TT/TEP/ICL/ WSHS	A		-	-	3.222	-	-	0.910	-	-	1.071	-	-	1.081	-	-	-	-	-	1.081
Subtotal: 1) VC000 - SUB WEAPONS LAUNCH/HANDLING SUPPORT			-	-	3.636	-	-	0.991	-	-	1.172	-	-	1.163	-	-	-	-	-	1.163
2) VC000 ORDALT PROCUREMENT																				
2.1) O/A MATERIAL	A		50,000.00	16	0.800	50,000.00	6	0.300	50,000.00	3	0.150	50,000.00	1	0.050	-	-	-	50,000.00	1	0.050
Subtotal: 2) VC000 ORDALT PROCUREMENT			-	-	0.800	-	-	0.300	-	-	0.150	-	-	0.050	-	-	-	-	-	0.050
3) VC000 - TEST EQUIPMENT																				
3.1) BORE GAGE	A		-	-	0.131	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3.2) MISC. TEST EQUIPMENT	A		-	-	0.225	-	-	0.090	-	-	0.132	-	-	0.126	-	-	-	-	-	0.126
3.3) TEST FACILITY EQUIPMENT	A		-	-	0.309	-	-	0.079	-	-	0.125	-	-	0.124	-	-	-	-	-	0.124
Subtotal: 3) VC000 - TEST EQUIPMENT			-	-	0.665	-	-	0.169	-	-	0.257	-	-	0.250	-	-	-	-	-	0.250
4) VC830 - PRODUCTION ENGINEERING																				
4.1) PRODUCTION ENGINEERING	A		-	-	0.610	-	-	0.250	-	-	0.150	-	-	0.190	-	-	-	-	-	0.190
Subtotal: 4) VC830 - PRODUCTION ENGINEERING			-	-	0.610	-	-	0.250	-	-	0.150	-	-	0.190	-	-	-	-	-	0.190
5) VC5IN - ORDALT INSTALLATION																				
5.1) VC5IN O/A INSTALLATION	A		-	-	5.405	-	-	2.220	-	-	1.133	-	-	0.742	-	-	-	-	-	0.742
Subtotal: 5) VC5IN - ORDALT INSTALLATION			-	-	5.405	-	-	2.220	-	-	1.133	-	-	0.742	-	-	-	-	-	0.742
Total			-	-	11.116	-	-	3.930	-	-	2.862	-	-	2.395	-	-	-	-	-	2.395
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
Footnotes:																				
⁽¹⁾ This line item procures modifications and improvements to Attack and Ballistic Missile Submarine fire control interface systems, torpedo tube system components and torpedo tube test equipment. These requirements arise as a result of the introduction of new or modified weapons and sensors and their subsequent evaluation test and operational use. Also procured are reliability, maintainability, functional and safety modifications and tactical improvements resulting from operational use experience.																				

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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 / 04 / 5									P-1 Line Item Number / Title: 5429 / ASW Support Equipment							Aggregated Items Title: SURFACE ASW 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) VC008 - ASWCS FIRE CONTROL ORDALTS																					
1.1) ASWCS - UCFS/ FIRE CONTROL ORDALTS ⁽²⁾				-	-	4.976	-	-	1.672	-	-	1.701	-	-	1.743	-	-	-	-	-	1.743
1.2) ASWCS - PRODUCTION ENGINEERING SUPPORT ⁽³⁾				-	-	0.259	-	-	0.091	-	-	0.093	-	-	0.095	-	-	-	-	-	0.095
1.3) ASWCS - ACCEPTANCE TEST & EVALUATION ⁽⁴⁾				-	-	0.150	-	-	0.051	-	-	0.052	-	-	0.053	-	-	-	-	-	0.053
Subtotal: 1) VC008 - ASWCS FIRE CONTROL ORDALTS				-	-	5.385	-	-	1.814	-	-	1.846	-	-	1.891	-	-	-	-	-	1.891
2) VC009 - TORPEDO TUBE ORDALTS																					
2.1) SVTT - MK32 ORDALTS ⁽⁵⁾				-	-	4.177	-	-	1.413	-	-	1.427	-	-	1.463	-	-	-	-	-	1.463
2.2) SVTT - PRODUCTION ENGINEERING SUPPORT ⁽⁶⁾				-	-	0.255	-	-	0.091	-	-	0.093	-	-	0.095	-	-	-	-	-	0.095
2.3) SVTT - ACCEPTANCE TEST & EVALUATION ⁽⁷⁾				-	-	0.150	-	-	0.051	-	-	0.052	-	-	0.053	-	-	-	-	-	0.053
Subtotal: 2) VC009 - TORPEDO TUBE ORDALTS				-	-	4.582	-	-	1.555	-	-	1.572	-	-	1.611	-	-	-	-	-	1.611
3) VC900 - CONSULTING SERVICES																					
3.1) CONSULTING SERVICES ⁽⁸⁾				-	-	0.296	-	-	0.103	-	-	0.090	-	-	0.092	-	-	-	-	-	0.092
Subtotal: 3) VC900 - CONSULTING SERVICES				-	-	0.296	-	-	0.103	-	-	0.090	-	-	0.092	-	-	-	-	-	0.092
4) VC6IN - INSTALLATION OF EQUIPMENT - N96																					
4.1) ASWCS - FIRE CONTROL ORDALTS ⁽⁹⁾				-	-	0.328	-	-	0.105	-	-	0.106	-	-	0.108	-	-	-	-	-	0.108
4.2) SVTT - TORPEDO TUBE ORDALTS ⁽¹⁰⁾				-	-	0.309	-	-	0.103	-	-	0.104	-	-	0.106	-	-	-	-	-	0.106
Subtotal: 4) VC6IN - INSTALLATION OF EQUIPMENT - N96				-	-	0.637	-	-	0.208	-	-	0.210	-	-	0.214	-	-	-	-	-	0.214
Total				-	-	10.900	-	-	3.680	-	-	3.718	-	-	3.808	-	-	-	-	-	3.808

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-40a, Budget Item Justification For Aggregated Items: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5	P-1 Line Item Number / Title: 5429 / ASW Support Equipment	Aggregated Items Title: SURFACE ASW SUPPORT EQUIPMENT

Footnotes:

- (2) SURFACE ASW SUPPORT EQUIPMENT - 1.1 ASWCS - UCFS/FIRE CONTROL ORDALTs: Provides funding for ORDALT kits for the ASW Underwater Control Functional Segment (UCFS), ASW Control System (ASWCS) MK116 Mod 7, Torpedo Setting Panel (MK331), and the Torpedo Pre-Setter Test Set (MK432). ORDALT procurements include a MK432 Mod 6 test set which provides for the addition of wide angle display, cable terminations and tech refresh of obsolete motherboard parts. Also provides material support at multiple land-based laboratories as well as material support for upgrades and calibrations. Procurements will ensure laboratories are at Fleet baseline configurations.
- (3) SURFACE ASW SUPPORT EQUIPMENT - 1.2 ASWCS - PRODUCTION ENGINEERING SUPPORT: Provides the necessary production engineering support funds to cover the associated Integrated Logistics Support (ILS) elements, Engineering Change Proposal (ECP) reviews, Engineering Changes (EC), Ship Change Documents (SCDs), and engineering audits for ASW Fire Control. Reviews and approves internal and external system interfaces (hardware and integration related) and identify interface issues.
- (4) SURFACE ASW SUPPORT EQUIPMENT - 1.3 ASWCS - ACCEPTANCE TEST & EVALUATION: Provides the in-house acceptance test and evaluation funding associated with the safety and quality assurance testing of all ASW Fire Control, Alteration Equivalent to Repairs (AERs), ECPs, ECs, and SCDs.
- (5) SURFACE ASW SUPPORT EQUIPMENT - 2.1 SVTT - MK32 ORDALTs: The SVTT MK32 is an over-the-side torpedo defense surface ship launched system that conducts close-in ASW operations. This line provides funding for SVTT MK32 launchers, Torpedo Loading Trays (TLTs), and ancillary equipment for testing, training, and maintainability on select surface ship combatants. ORDALT procurements include: Emergency Fire Circuit and Mount to Magazine Door Interoperability Circuit Improvements (SVTT MK32 Mod 19 only - ORDALT 76463); Overheat Sensor Test Set (SVTT MK32 Mod 15 Only - ORDALT 412-01-019); Torpedo MK54 SVTT Upgrades (SVTT MK32 Mods 14 Only - ORDALT 76008); Breech Mechanism Control Valve Redesign (SVTT MK32 All Mods - ORDALT TBD); Over-Heat Sensor Assembly Modification (SVTT MK32 Mod 15 Only - ORDALT 412-05-015); Training Gear Handcrank Support Improvements (SVTT MK32 Mods 15 Only - ORDALT TBD) and Air Charging Panel Regulator Improvements (SVTT MK32 MOD 15 Only - ORDALT TBD). Procure SVTT shore site laboratory equipment for Launcher System Facilities (LSF). LSFs are used to simulate shipboard conditions for over-the-side torpedo launchers, as well as for the creation of the required ORDALTs.
- (6) SURFACE ASW SUPPORT EQUIPMENT - 2.2 SVTT - PRODUCTION ENGINEERING: Provides the necessary production engineering support funds to cover the associated Integrated Logistics Support (ILS) elements, Engineering Change Proposal (ECP) reviews, Engineering Changes (EC), SCDs, and engineering audits for SVTT ORDALTs.
- (7) SURFACE ASW SUPPORT EQUIPMENT - 2.3 SVTT - ACCEPTANCE TEST & EVALUATION: Provides the in-house acceptance test and evaluation funding required for the safety and quality assurance testing of all SVTT ORDALTs, Alteration Equivalent to Repairs (AERs), ECPs, ECs, and SCDs.
- (8) SURFACE ASW SUPPORT EQUIPMENT - 3.1 CONSULTING SERVICES: Provides the necessary funding for consulting services required to support scheduling of ASW Fire Control and SVTT ORDALT production, test, and installation efforts in conjunction with operation, safety, and environmental requirements.
- (9) SURFACE ASW SUPPORT EQUIPMENT - 4.1 ASWCS - FIRE CONTROL ORDALTs: Funds the installation of all ASW Fire Control (under Cost Code VC008) and SVTT (under Cost Code VC009) ORDALTs/SCDs. ORDALT/SCD Alteration Installation Team (AIT) pier-side installations are variable and contingent on Type Commander (TYCOM), Ships' Scheduling Conference (SSC), and ships' availability.
- (10) SURFACE ASW SUPPORT EQUIPMENT - 4.2 SVTT - TORPEDO TUBE ORDALTs: Funds the installation of all ASW Fire Control (under Cost Code VC008) and SVTT (under Cost Code VC009) ORDALTs/SCDs. ORDALT/SCD Alteration Installation Team (AIT) pier-side installations are variable and contingent on Type Commander (TYCOM), Ships' Scheduling Conference (SSC), and ships' availability.

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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 / 04 / 5									P-1 Line Item Number / Title: 5429 / ASW Support Equipment							Aggregated Items Title: ASW Range Support Equipment (3)					
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) VC001 - Surface Ship Radiated Noise Measurement (SSRNM)/US Fleet Operational Readiness Acc																					
1.1) VC001 - SSRNM/US FORACS (S05)		A	-	-	7.384	-	-	2.534	-	-	2.548	-	-	2.524	-	-	-	-	-	2.524	
Subtotal: 1) VC001 - Surface Ship Radiated Noise Measurement (SSRNM)/US Fleet Operational Readiness Acc			-	-	7.384	-	-	2.534	-	-	2.548	-	-	2.524	-	-	-	-	-	2.524	
2) VC002 - UNDERWATER TRACKING RANGE EQUIPMENT (UTRE)/Pinger - N94																					
2.1) VC002 - UTRE (S05)		A	-	-	6.244	-	-	1.732	-	-	1.773	-	-	1.785	-	-	-	-	-	1.785	
Subtotal: 2) VC002 - UNDERWATER TRACKING RANGE EQUIPMENT (UTRE)/Pinger - N94			-	-	6.244	-	-	1.732	-	-	1.773	-	-	1.785	-	-	-	-	-	1.785	
3) VC003 - TOWED TARGETS																					
3.1) VC003 - TOWED TARGETS (SHIPS)		A	-	-	2.725	-	-	1.016	-	-	0.833	-	-	1.089	-	-	-	-	-	1.089	
Subtotal: 3) VC003 - TOWED TARGETS			-	-	2.725	-	-	1.016	-	-	0.833	-	-	1.089	-	-	-	-	-	1.089	
4) VC004 - INSTRUMENTATION																					
4.1) VC004 - INSTRUMENTATION (SHIPS)		A	-	-	0.443	-	-	0.176	-	-	0.170	-	-	0.170	-	-	-	-	-	0.170	
Subtotal: 4) VC004 - INSTRUMENTATION			-	-	0.443	-	-	0.176	-	-	0.170	-	-	0.170	-	-	-	-	-	0.170	
5) VC005 - HSMST (HIGH SPEED MANEUVERABLE SURFACE TARGET)																					
5.1) VC005 - HSMST (SHIPS) ^{(11)(f)}		A	187,128.83	163	30.502	197,576.00	40	7.903	201,528.00	30	6.046	205,558.00	38	7.811	-	-	-	205,558.00	38	7.811	
Subtotal: 5) VC005 - HSMST (HIGH SPEED MANEUVERABLE SURFACE TARGET)			-	-	30.502	-	-	7.903	-	-	6.046	-	-	7.811	-	-	-	-	-	7.811	
6) VC006 - SDST (Ship Deployable Surface Target)																					
6.1) VC006 - SDST (Ship Deployable Surface Target) (SHIPS)		A	-	-	0.283	-	-	0.124	-	-	0.126	-	-	0.128	-	-	-	-	-	0.128	
Subtotal: 6) VC006 - SDST (Ship Deployable Surface Target)			-	-	0.283	-	-	0.124	-	-	0.126	-	-	0.128	-	-	-	-	-	0.128	
7) VC007 - FACT (Fast Attack Craft Target)																					
7.1) VC007 - FACT (Fast Attack Craft Target) (SHIPS) ^(f)		A	663,500.00	2	1.327	683,437.00	1	0.683	-	-	-	-	-	-	-	-	-	-	-	-	
Subtotal: 7) VC007 - FACT (Fast Attack Craft Target)			-	-	1.327	-	-	0.683	-	-	-	-	-	-	-	-	-	-	-	-	
8) VC831/2 - 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 / 04 / 5						P-1 Line Item Number / Title: 5429 / ASW Support Equipment						Aggregated Items Title: ASW Range Support Equipment (3)								
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)
8.1) VC831 - PRODUCTION ENGINEERING UTRE - N94/US FORACS - N96 (S05)	A		-	-	0.811	-	-	0.381	-	-	0.391	-	-	0.400	-	-	-	-	-	0.400
8.2) VC832 - PRODUCTION ENGINEERING (Ships)	A		-	-	1.250	-	-	0.519	-	-	0.460	-	-	0.470	-	-	-	-	-	0.470
Subtotal: 8) VC831/2 - PRODUCTION ENGINEERING			-	-	2.061	-	-	0.900	-	-	0.851	-	-	0.870	-	-	-	-	-	0.870
9) VC851 - PRODUCT IMPROVEMENT																				
9.1) VC851 - PRODUCT IMPROVEMENT UTRE - N94/US FORACS-N96 (S05)	A		-	-	0.812	-	-	0.381	-	-	0.391	-	-	0.400	-	-	-	-	-	0.400
Subtotal: 9) VC851 - PRODUCT IMPROVEMENT			-	-	0.812	-	-	0.381	-	-	0.391	-	-	0.400	-	-	-	-	-	0.400
10) VC970 - INTEGRATED LOGISTICS SUPPORT																				
10.1) VC970 - INTEGRATED LOGISTICS SUPPORT (SHIPS)	A		-	-	0.382	-	-	0.150	-	-	0.118	-	-	0.150	-	-	-	-	-	0.150
Subtotal: 10) VC970 - INTEGRATED LOGISTICS SUPPORT			-	-	0.382	-	-	0.150	-	-	0.118	-	-	0.150	-	-	-	-	-	0.150
Total			-	-	52.163	-	-	15.599	-	-	12.856	-	-	14.927	-	-	-	-	-	14.927
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:																				
(11) HSMSTs must be procured annually to (1) replace targets destroyed during testing/exercises, (2) replace targets which are beyond their service life and (3) provide a sufficient inventory of targets at the operating activities (Target Ranges). The Navy conducts approximately 3,000 seaborne target exercises each year. 1,500 seaborne target operations each year involve the HSMST of which approximately 50 actually are destroyed. HSMSTs can be re-used if the target is not impacted or if the extent of the damage is minimal enough to allow the HSMST to be repaired.																				

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 5				P-1 Line Item Number / Title: 5429 / ASW Support Equipment					Aggregated Items: ASW Range Support Equipment (3)			
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
5) VC005 - HSMST (HIGH SPEED MANEUVERABLE SURFACE TARGET)												
5.1) VC005 - HSMST (SHIPS) ⁽¹¹⁾		2017 ⁽¹²⁾	Silverships / Theodore, AL	C / FFP	NAVSEA	Apr 2017	Aug 2017	104	185,558.00	Y		Nov 2016
5.1) VC005 - HSMST (SHIPS) ⁽¹¹⁾		2018	TBD / TBD	C / FFP	NAVSEA	Jan 2019	Jun 2019	40	197,576.00	Y		Nov 2018
5.1) VC005 - HSMST (SHIPS) ⁽¹¹⁾		2019	TBD / TBD	C / FFP	NAVSEA	Jan 2019	Dec 2019	30	201,528.00	N		Nov 2018
5.1) VC005 - HSMST (SHIPS) ⁽¹¹⁾		2020	TBD / TBD	C / FFP	NAVSEA	Jan 2020	Apr 2020	38	205,558.00	N		Nov 2018
7) VC007 - FACT (Fast Attack Craft Target)												
7.1) VC007 - FACT (Fast Attack Craft Target) (SHIPS)		2018	Gravois Aluminum Boats, LLC / Jeanerette, LA	C / FFP	NAVSEA	Nov 2017	Apr 2018	1	683,437.00	Y		Feb 2016

Footnotes:

⁽¹²⁾ Gravois Aluminum Boats, LLC, Jeanerette, LA, was also awarded an HSMST contract. Two HSMST contract awards for FY17.

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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 04: Ordnance Support Equipment / BSA 6: Other Ordnance Support Equipment							P-1 Line Item Number / Title: 5509 / Explosive Ordnance Disposal Equip					
ID Code (A=Service Ready, B=Not Service Ready): B				Program Elements for Code B Items: N/A				Other Related Program Elements: 0603654N, 0604654N, 0604653N				
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>)	716.888	63.766	41.838	15.244	15.307	30.551	26.920	13.566	15.539	15.781	-	924.849
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	716.888	63.766	41.838	15.244	15.307	30.551	26.920	13.566	15.539	15.781	-	924.849
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	716.888	63.766	41.838	15.244	15.307	30.551	26.920	13.566	15.539	15.781	-	924.849
<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>)	-	0.127	0.002	2.292	-	2.292	0.275	0.272	0.347	-	-	3.315
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Explosive Ordnance Disposal (EOD) Equipment procures Navy EOD required tools and equipment developed to support a lethal, agile, and resilient force and aligns with National Defense Strategy to modernize key capabilities. EOD Equipment supports both OCONUS and CONUS operations that allow the ability to detect, access, diagnose, render safe, exploit, and dispose of threats to National Security. Current missions now require increased standoff distances and remote means to perform operational tasks due to the increased lethality of munitions and Weapons of Mass Destruction. The Expeditionary Exploitation Unit (EXU-1) provides technical exploitation of IEDs and conventional ordnance to provide time sensitive, technical intelligence, tactical and operational information to EOD warfighters and National level intelligence activities. This program procures tools and equipment in support of their mission to collect, evaluate, analyze, and interpret foreign material acquisition and its relationship to the EOD community. Counter Radio-Controlled Improvised Explosive Device (IED) Electronic Warfare (CREW) systems that disrupt enemy command and control radio frequency (RF) communications associated with IEDs is procured by this program. Additionally, in support of JUONS CC-0558 Counter Unmanned Aerial System (C-UAS) Capabilities, this program also supports the Navy effort to field reconfigured CREW dismounted systems with an initial, quick response, man-portable C-UAS capability. The C-UAS capability has since been expanded to include all JCREW variants and includes upgrades to system hardware. The Navy is responsible for the management and execution of the Joint Service Explosive Ordnance Disposal (EOD) unified procurement system as assigned by DOD Directive 5160.62.												

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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 04: Ordnance Support Equipment / BSA 6: Other Ordnance Support Equipment					P-1 Line Item Number / Title: 5509 / Explosive Ordnance Disposal Equip					
ID Code (A=Service Ready, B=Not Service Ready): B			Program Elements for Code B Items: N/A			Other Related Program Elements: 0603654N, 0604654N, 0604653N				
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 / EOD - CREW Equipment	P-5a, P-21			- / 716.888	- / 63.766	- / 41.838	- / 15.244	- / 15.307	- / 30.551
P-40	Total Gross/Weapon System Cost				- / 716.888	- / 63.766	- / 41.838	- / 15.244	- / 15.307	- / 30.551
*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 baseline funding will procure Navy EOD Equipment, Decision Support System (DSS) upgrades to Joint Service EOD Common Controller Platform, and DSS Production Environments, EOD Outfitting equipment, Advanced EOD Robotics Production Engineering, Acceptance, Test & Evaluation, Product Improvement of the EOD equipment, EOD training and related support, and Technical Training material used for training at the Naval School Explosive Ordnance Disposal. FY 2020 procures 26 Advanced Explosive Ordnance Disposal Robotics System (AEODRS) Increment 1, Mobile In-Country Exploitation, EOD tools and equipment. Additionally, FY 2020 baseline funds will procure Combined Explosive Exploitation Cell Platoon Laboratory Table of Allowance equipment for intelligence missions to collect, evaluate, analyze, and interpret foreign material acquisition and its relationship to the EOD community (i.e. Advanced X-Ray; Weapons Assessment tools). OCO: FY 2020 Overseas Contingency Operations (OCO) funds support Expeditionary Exploitation Unit One (formerly TSD) combatant command requirements in Operation Freedom Sentinel Theater (OFS-T), Operation Inherent Resolve In County (OIR-IC), and Operation Inherent Resolve Theater (OIR-T). FY 2020 Overseas Contingency Operations (OCO) funds support Explosive Ordnance Disposal (EOD) teams, which require equipment to conduct diagnostics and render safe procedures for foreign conventional and unconventional threats, to include Improvised Explosive Devices. EOD Missions enable access and movement through hostile regions and contribute to Force Protection and Battlespace Awareness in combat areas of operation that supports combatant command requirements in Operation Freedom Sentinel Theater (OFS-T), Operational Freedom Sentinel Afghanistan (OFS-A), Operation Inherent Resolve In County (OIR-IC), and Operation Inherent Resolve Theater (OIR-T).										

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019							
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 6						P-1 Line Item Number / Title: 5509 / Explosive Ordnance Disposal Equip						Item Number / Title [DODIC]: 1 / EOD - CREW 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					
Procurement Quantity <i>(Units in Each)</i>				-		-		-		-		-		-					
Gross/Weapon System Cost <i>(\$ in Millions)</i>				716.888		63.766		41.838		15.244		15.307		30.551					
Less PY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-					
Net Procurement (P-1) <i>(\$ in Millions)</i>				716.888		63.766		41.838		15.244		15.307		30.551					
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-					
Total Obligation Authority <i>(\$ in Millions)</i>				716.888		63.766		41.838		15.244		15.307		30.551					
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																			
Initial Spares <i>(\$ in Millions)</i>				-		0.127		0.002		2.292		-		2.292					
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 - VN075 - EOD EQUIPMENT/SYSTEM Cost																			
Recurring Cost																			
1.1.1) ADVANCED EOD ROBOT ⁽¹⁾ (1)		225,108.70	46	10.355	-	-	-	625,000.00	4	2.500	355,269.23	26	9.237	-	-	-	355,269.23	26	9.237
Subtotal: Recurring Cost		-	-	10.355	-	-	-	-	-	2.500	-	-	9.237	-	-	-	-	-	9.237
Subtotal: Hardware - VN075 - EOD EQUIPMENT/ SYSTEM Cost		-	-	10.355	-	-	-	-	-	2.500	-	-	9.237	-	-	-	-	-	9.237
Hardware - VN077 - EOD OUTFITTING Cost																			
Recurring Cost																			
2.1.1) Expeditionary Exploitation Unit One (EXU-1) ⁽²⁾		-	-	15.321	-	-	8.170	-	-	3.462	-	-	0.843	-	-	2.707	-	-	3.550
2.1.2) MATERIAL FOR NAVSCOLEOD ⁽³⁾		-	-	3.493	-	-	0.350	-	-	0.305	-	-	0.325	-	-	-	-	-	0.325
2.1.3) EOD DECISION SUPPORT SYSTEM CONTINUOUS IMPROVEMENTS ⁽⁴⁾		-	-	11.185	-	-	1.233	-	-	1.268	-	-	1.060	-	-	-	-	-	1.060
2.1.4) NAVY EOD EQUIPMENT ⁽⁵⁾		-	-	38.888	-	-	1.718	-	-	6.035	-	-	0.192	-	-	12.600	-	-	12.792
2.1.5) JS EOD MOBILE ICE MODULES ⁽⁶⁾		-	-	2.227	-	-	0.200	-	-	0.100	-	-	0.100	-	-	-	-	-	0.100

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 6						P-1 Line Item Number / Title: 5509 / Explosive Ordnance Disposal Equip						Item Number / Title [DODIC]: 1 / EOD - CREW Equipment						
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)
Subtotal: Recurring Cost	-	-	71.114	-	-	11.671	-	-	11.170	-	-	2.520	-	-	15.307	-	-	17.827
Subtotal: Hardware - VN077 - EOD OUTFITTING Cost	-	-	71.114	-	-	11.671	-	-	11.170	-	-	2.520	-	-	15.307	-	-	17.827
Hardware - VN870 - JOINT CREW Cost																		
Non Recurring Cost																		
3.1.1) JOINT CREW ^(†) (7)	144,350.50	602	86.899	348,580.00	35	12.200	-	-	-	-	-	-	-	-	-	-	-	-
3.1.2) TECH INSERTION and REFRESH	-	-	0.775	-	-	0.812	-	-	0.836	-	-	0.868	-	-	-	-	-	0.868
3.1.3) JCREW COUNTER UNMANNED AERIAL SYSTEMS (CUAS) ^(†) (8)	-	-	-	488,666.67	75	36.650	498,000.00	50	24.900	-	-	-	-	-	-	-	-	-
3.1.4) NSW COUNTER UNMANNED AERIAL SYSTEM (CUAS) ⁽⁹⁾	-	-	-	-	-	1.600	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Non Recurring Cost	-	-	87.674	-	-	51.262	-	-	25.736	-	-	0.868	-	-	-	-	-	0.868
Subtotal: Hardware - VN870 - JOINT CREW Cost	-	-	87.674	-	-	51.262	-	-	25.736	-	-	0.868	-	-	-	-	-	0.868
Support - VN830 - PRODUCTION ENGINEERING Cost																		
4.1) PRODUCTION ENGINEERING ⁽¹⁰⁾	-	-	12.267	-	-	0.200	-	-	1.060	-	-	1.141	-	-	-	-	-	1.141
Subtotal: Support - VN830 - PRODUCTION ENGINEERING Cost	-	-	12.267	-	-	0.200	-	-	1.060	-	-	1.141	-	-	-	-	-	1.141
Support - VN850 - PRODUCT IMPROVEMENT Cost																		
5.1) PRODUCT IMPROVEMENT ⁽¹¹⁾	-	-	8.660	-	-	0.275	-	-	0.508	-	-	0.548	-	-	-	-	-	0.548
Subtotal: Support - VN850 - PRODUCT IMPROVEMENT Cost	-	-	8.660	-	-	0.275	-	-	0.508	-	-	0.548	-	-	-	-	-	0.548
Support - VN860 - ACCEPTANCE, TEST & EVALUATION Cost																		
6.1) JOINT EOD ACCEPTANCE, TEST & EVALUATION ⁽¹²⁾	-	-	8.129	-	-	0.070	-	-	0.599	-	-	0.640	-	-	-	-	-	0.640

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Exhibit P-5, Cost Analysis: PB 2020 Navy											Date: March 2019							
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 6						P-1 Line Item Number / Title: 5509 / Explosive Ordnance Disposal Equip						Item Number / Title [DODIC]: 1 / EOD - CREW Equipment						
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)
6.2) JOINT CREW ACCEPTANCE TEST & EVALUATION	-	-	3.104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - VN860 - ACCEPTANCE, TEST & EVALUATION Cost	-	-	11.233	-	-	0.070	-	-	0.599	-	-	0.640	-	-	-	-	-	0.640
Support - VNTNG - INITIAL TRAINING Cost																		
7.1) VNTNG - INITIAL TRAINING ⁽¹³⁾	-	-	3.253	-	-	0.288	-	-	0.265	-	-	0.290	-	-	-	-	-	0.290
Subtotal: Support - VNTNG - INITIAL TRAINING Cost	-	-	3.253	-	-	0.288	-	-	0.265	-	-	0.290	-	-	-	-	-	0.290
Support - PRIOR YEARS CUMULATIVE FUNDING Cost																		
8.1) PRIOR YEAR FUNDING	-	-	512.332	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support - PRIOR YEARS CUMULATIVE FUNDING Cost	-	-	512.332	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	716.888	-	-	63.766	-	-	41.838	-	-	15.244	-	-	15.307	-	-	30.551

(†) indicates the presence of a P-5a

Footnotes:

(1) Advanced EOD Robotics Family of System provides USN EOD outfitting dismounted operations systems for performing operations in remote locations or when Joint Service Explosive Ordnance Disposal (JSEOD) forces are directly supporting maneuver forces in the anticipation of an incident. Procurement of systems support modular open architecture approaches for reduction of equipment footprint. Qty 4 & Qty 26 represent Low Rate Initial Production (LRIP). Qty 4 enables manufacturing maturity for production as a result of production decision achieved December 2018.

(2) Expeditionary Exploitation Unit (EXU1): Provides for outfitting of EXU-1 Detachment approved Table of Allowance to address operational requirements for IED exploitation support of global tasking.

(3) MATERIAL FOR NAVSCOLEOD: Provides for inert ordnance material to Naval School Explosive Ordnance Disposal (NAVSCOLEOD) in support of Joint Service training.

(4) EOD DECISION SUPPORT SYSTEM (DSS) CIP: Procurement of Joint EOD Decision Support System continuous improvement for major modifications to include the Joint EOD Common Controller Platform and Joint EOD Portal for access to relevant and timely information to extend military capability.

(5) NAVY EOD EQUIPMENT: Procurement of Approved Equipment in support of EOD diagnostics and render safe tools.

(6) JS EOD MOBILE ICE MODULES: Provides self-contained, deployable MILVAN type container configured and outfitted to perform ordnance and IED exploitation.

(7) JOINT CREW Provides for the procurement, support, and other related costs of the Joint Counter Radio Controlled Improvised Explosive Device - Electronic Warfare (JCREW) program and related family of systems that provide countermeasures against the global Radio Controlled IED (RCIED) threat.

(8) JOINT CREW UNMANNED AERIAL SYSTEMS: Provides for the procurement and support of Joint CREW systems and tech insertion upgrades to systems to provide a Counter Unmanned Aerial System (CUAS) capability in support of Joint Urgent Operational Need (JUON) CC-0558.

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Exhibit P-5, Cost Analysis: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 6	P-1 Line Item Number / Title: 5509 / Explosive Ordnance Disposal Equip	Item Number / Title [DODIC]: 1 / EOD - CREW Equipment
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
⁽⁹⁾ NSW COUNTER UNMANNED AERIAL SYSTEM: Supports the procurement of Naval Surface Warfare to provide a Counter Unmanned Aerial System (C-UAS) capability in response to a Joint Urgent Operational Need (JUON)CC-0558. ⁽¹⁰⁾ PRODUCTION ENGINEERING Provides production engineering support for all EOD production contracts. Reviews all technical data packages prior to procurement and provide procurement instruction to the procuring activity in support of the EOD unified procurement system. ⁽¹¹⁾ PRODUCT IMPROVEMENT Engineering services to improve EOD Systems/Equipment in production to improve maintainability, utilize current technology and decrease cost. ⁽¹²⁾ ACCEPTANCE, TEST & EVALUATION Test, inspect, accept first articles and, on a 100% basis, the production quantity of EOD tools and equipment being procured. ⁽¹³⁾ INITIAL TRAINING Provides training on EOD systems and related 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 / 04 / 6			P-1 Line Item Number / Title: 5509 / Explosive Ordnance Disposal Equip						Item Number / Title [DODIC]: 1 / EOD - CREW Equipment			
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
1.1.1) ADVANCED EOD ROBOT ^(†)		2016	NORTHROP GRUMMAN / Herndon, VA	C / FFP	NSWCIHEOD	Mar 2016	Mar 2017	18	222,222.00	Y		Jun 2014
1.1.1) ADVANCED EOD ROBOT ^(†)		2017	NORTHROP GRUMMAN / Herndon, VA	C / FFP	NAVSEA	Sep 2017	Sep 2018	28	226,964.28	Y		Jun 2014
1.1.1) ADVANCED EOD ROBOT ^(†)		2019	NORTHROP GRUMMAN / Herndon, VA	C / TBD	NAVSEA	Jun 2019	Jun 2020	4	625,000.00	Y		Jun 2014
1.1.1) ADVANCED EOD ROBOT ^(†)		2020	NORTHROP GRUMMAN / Herndon, VA	C / TBD	** NO PCO **	Apr 2020	Apr 2020	26	355,269.23	N	Mar 2019	
3.1.1) JOINT CREW ^(†)		2016	NORTHROP GRUMMAN / San Diego, CA	C / FPIF	NAVSEA	Jul 2016	Mar 2017	25	117,160.00	Y		Oct 2014
3.1.1) JOINT CREW ^(†)	✓	2017	NORTHROP GRUMMAN / San Diego, CA	C / FFP	NAVSEA	Aug 2017	Dec 2018	577	139,400.00	Y		Aug 2016
3.1.1) JOINT CREW ^(†)	✓	2018	NORTHROP GRUMMAN / San Diego, CA	C / FFP	NAVSEA	Jun 2018	Dec 2019	35	348,580.00	Y		Aug 2016
3.1.3) JCREW COUNTER UNMANNED AERIAL SYSTEMS (CUAS) ^(†)	✓	2018	NORTHROP GRUMMAN / San Diego, CA	C / FFP	NAVSEA	Jun 2018	Dec 2019	75	378,666.00	Y		Aug 2016
3.1.3) JCREW COUNTER UNMANNED AERIAL SYSTEMS (CUAS) ^(†)	✓	2019	NORTHROP GRUMMAN / San Diego, CA	C / FFP	NAVSEA	Jan 2019	May 2020	50	498,000.00	Y		Aug 2016

^(†) 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 / 04 / 6										P-1 Line Item Number / Title: 5509 / Explosive Ordnance Disposal Equip										Item Number / Title [DODIC]: 1 / EOD - CREW Equipment												
Cost Elements <i>(Units in Each)</i>							Fiscal Year 2016										Fiscal Year 2017										B A L A N C E					
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2015	BAL DUE AS OF 1 OCT	Calendar Year 2016															Calendar Year 2017										
							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) ADVANCED EOD ROBOT ⁽¹⁾																																
	1	2016	NAVY	18	0	18							A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18				0
	1	2017	NAVY	28	0	28																								A -		28
	1	2019	NAVY	4	0	4																										4
	1	2020	NAVY	26	0	26																										26
3.1.1) JOINT CREW ⁽⁷⁾																																
	2	2016	NAVY	25	0	25									A -	-	-	-	-	-	-	-	-	-	-	-	25					0
✓	2	2017	NAVY	577	0	577																								A -	-	577
✓	2	2018	NAVY	35	0	35																										35
3.1.3) JCREW COUNTER UNMANNED AERIAL SYSTEMS (CUAS) ⁽⁸⁾																																
✓	3	2018	NAVY	75	0	75																										75
✓	3	2019	NAVY	50	0	50																										50
							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 / 04 / 6										P-1 Line Item Number / Title: 5509 / Explosive Ordnance Disposal Equip										Item Number / Title [DODIC]: 1 / EOD - CREW Equipment																					
Cost Elements (Units in Each)							Fiscal Year 2018										Fiscal Year 2019												BALANCE												
OCC#	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) ADVANCED EOD ROBOT ⁽¹⁾																																									
	1	2016	NAVY	18	18	0																											0								
	1	2017	NAVY	28	0	28	-	-	-	-	-	-	-	-	-	-	-	28															0								
	1	2019	NAVY	4	0	4																					A -	-	-	-		4									
	1	2020	NAVY	26	0	26																											26								
3.1.1) JOINT CREW ⁽⁷⁾																																									
	2	2016	NAVY	25	25	0																											0								
✓	2	2017	NAVY	577	0	577	-	-	-	-	-	-	-	-	-	-	-	-	72	73	72	72	72	72	72	72					0										
✓	2	2018	NAVY	35	0	35											A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35								
3.1.3) JCREW COUNTER UNMANNED AERIAL SYSTEMS (CUAS) ⁽⁸⁾																																									
✓	3	2018	NAVY	75	0	75											A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	75								
✓	3	2019	NAVY	50	0	50																							A -	-	-	-	-	-	-	-	-	-	-	-	50
							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 / 04 / 6										P-1 Line Item Number / Title: 5509 / Explosive Ordnance Disposal Equip										Item Number / Title [DODIC]: 1 / EOD - CREW Equipment													
Cost Elements <i>(Units in Each)</i>							Fiscal Year 2020										Fiscal Year 2021													BALANCE			
OCC#	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) ADVANCED EOD ROBOT ⁽¹⁾																																	
	1	2016	NAVY		18	18	0																								0		
	1	2017	NAVY		28	28	0																								0		
	1	2019	NAVY		4	0	4	-	-	-	-	-	-	-	-	4																0	
	1	2020	NAVY		26	0	26						A5	5	5	5	5	1											0				
3.1.1) JOINT CREW ⁽⁷⁾																																	
	2	2016	NAVY		25	25	0																								0		
✓	2	2017	NAVY		577	577	0																								0		
✓	2	2018	NAVY		35	0	35	-	-	10	10	10	5																		0		
3.1.3) JCREW COUNTER UNMANNED AERIAL SYSTEMS (CUAS) ⁽⁸⁾																																	
✓	3	2018	NAVY		75	0	75	-	-	8	8	8	8	8	8	8	7	7	5												0		
✓	3	2019	NAVY		50	0	50	-	-	-	-	-	-	-	6	6	6	6	6	6	7	7											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 / 04 / 6				P-1 Line Item Number / Title: 5509 / Explosive Ordnance Disposal Equip				Item Number / Title [DODIC]: 1 / EOD - CREW 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	NORTHROP GRUMMAN - Herndon, VA			TBD	0	0	0	0	0	0	0	0
2	NORTHROP GRUMMAN - San Diego, CA			TBD	0	0	0	0	0	0	0	0
3	NORTHROP GRUMMAN - San Diego, CA			TBD	0	0	0	0	0	0	0	0

"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 04: Ordnance Support Equipment / BSA 6: Other Ordnance Support Equipment							P-1 Line Item Number / Title: 5543 / Items Less Than \$5 Million					
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>	73.499	5.981	5.378	5.071	0.000	5.071	5.971	6.006	5.959	6.078	Continuing	Continuing
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	73.499	5.981	5.378	5.071	0.000	5.071	5.971	6.006	5.959	6.078	Continuing	Continuing
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	73.499	5.981	5.378	5.071	0.000	5.071	5.971	6.006	5.959	6.078	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:
 Items Less Than \$5 Million: The FY2020 funding request was reduced by \$.398 million to account for the availability of prior year execution balances.

RA004 - QUALITY EVAL TECH & EQUIPMENT (QETE): Provides funding to procure test systems and equipment in support of the Navy weapons systems and ordnance Quality Evaluation (QE) Program. The purpose of the Navy QE Program is to ensure that only safe, quality, reliable, and ready Navy and Marine Corps weapons systems and ordnance items are provided to the Fleet. The result of the QE stock surveillance testing is technical readiness data used to predict when items degrade to the point where they become unsafe to store or would fail to function (unreliable) when needed and should be removed from service.

RA005 - FLEET MINE SUPPORT EQUIPMENT: Description: Mine Countermeasure Targets are used to emulate both physically and electronically Foreign mine threats for Fleet training, exercises, ranges, and platform and system validation. Instrumented Mine Countermeasures (MCM) Targets can be programmed to behave and function like real foreign mine threats for mine sweeping and platform validation where non-instrumented Mine Countermeasure Targets emulate foreign threats physically for mine hunting training and system validation. Non-instrumented MCM Targets are also used for mine neutralization training and validation.

RA007 - GRIFFIN MISSILE SYSTEM (GMS) INITIAL TECHNICAL REFRESH]: Description: This line continues funding for Griffin Missile System under a new grouping, Patrol Combatants. This is a technical adjustment to move non-frigate funding out of the Frigate Missile funding group. RA007 funding supports major initial replacement systems for the Griffin Missile (GMS) Program to include Electro-Optical Infra-Red sensor with laser designator, Battlefield Management System, Launcher/Launcher components. Funding also procures all technical refresh upgrades of the GMS hardware and software aboard Patrol Coastal (PC) ships. Upgrades will include: Battlefield Management System (BMS) workstation hardware, latest version of BMS system software, and refresher training. Funds will also support management of contractor efforts, preparation of installation plans, performance of ship checks, procurement of materials, oversight of shipboard installation and Quality Assurance (QA), conduct of sparing analysis, reliability analysis, system safety analysis, logistical support, installation and testing of all software and shipboard training.

RA003 - INDUSTRIAL FACILITIES: Description: Provides funding for the procurement of industrial equipment in support of core manufacturing and production requirements at the Government-Owned/ Contractor- Operated (GOCO) Naval Industrial Reserve Ordnance Plant (NIROP) Allegany Ballistics Laboratory (ABL) located in Rocket Center, WV. NIROP ABL is a key U.S. military industrial facility that is the source of tactical missile propulsion systems, fuzes, conventional warheads, metal and composite structures and precision projectiles in accordance with the Defense Industrial Reserve Act (10 USC 2535). Supports environmental, safety, energy conservation, and major repair projects at the GOCO facility.

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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 04: Ordnance Support Equipment / BSA 6: Other Ordnance Support Equipment						P-1 Line Item Number / Title: 5543 / Items Less Than \$5 Million				
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	Items Less Than \$5 Million	P-5a			- / 73.499	- / 5.981	- / 5.378	- / 5.071	- / -	- / 5.071
P-40	Total Gross/Weapon System Cost				- / 73.499	- / 5.981	- / 5.378	- / 5.071	- / 0.000	- / 5.071
*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: This generic (non-weapons systems specific) test equipment is needed to assess the effects of aging and exposure to environmental conditions on Navy weapons systems and ordnance such as mines, gun ammunition, missiles, pyrotechnics, demolition systems/devices, bombs, and torpedoes throughout the in-service portion of their life cycle and will be located at NAVSEA engineering field activities. Requirements for the test equipment come from a need to replace or modernize obsolete or economically non-repairable equipment or to acquire new or expanded generic test capabilities when new evaluation techniques or process are needed. The equipments procured by these funds are generally "one of a kind" and are used to support generic Navy weapons systems and ordnance types. Weapons systems specific equipment is procured/funded via the individual weapons system Program Management offices. After the weapon specific equipment has entered the inventory, these funds adapt the capability, if feasible, to become more generic and support more than one weapon system. This reduces the overall economic burden to the Navy. Funding is required to support procurement of MCM targets that mimic Foreign mine threat to be used by the Fleet for training and exercises. This funding also supports the procurement of the required spares parts to ensure these targets remain functional and will support the Fleet training events. Funding for FY 2020 will support the procurement of environmental handling unit equipment in support of energetics production climate control facility requirements at NIROP ABL, Rocket Center, WV. The current environmental units are aging and in need of repair. This project consists of replacing the environmental units on Plant 1 of the NIROP ABL facility. The current environmental unit has degraded to the point of needing replacement. Replacing the environmental unit will lead to greater efficiency in achieving program specification requirements for the energetics processing buildings and reduce operational costs.										

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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 / 04 / 6									P-1 Line Item Number / Title: 5543 / 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) MAINTENANCE SUPPORT ACTIVITIES																				
1.1) RA004 - QUALITY EVAL TECH & EQUIPMENT (QETE)	B		-	-	20.096	-	-	1.599	-	-	1.478	-	-	1.516	-	-	-	-	-	1.516
Subtotal: 1) MAINTENANCE SUPPORT ACTIVITIES			-	-	20.096	-	-	1.599	-	-	1.478	-	-	1.516	-	-	-	-	-	1.516
2) MINE COUNTERMEASURES FORCES																				
2.1) RA005 - FLEET MINE SUPPORT EQUIPMENT	B		-	-	12.285	-	-	1.814	-	-	1.785	-	-	1.373	-	-	-	-	-	1.373
Subtotal: 2) MINE COUNTERMEASURES FORCES			-	-	12.285	-	-	1.814	-	-	1.785	-	-	1.373	-	-	-	-	-	1.373
3) FRIGATES - MISSILE																				
3.1) RA006 - GRIFFIN MISSILE SYSTEM (GMS)	A		4,928K	5	24.639	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.2) RA007 - GRIFFIN MISSILE SYSTEM (GMS) INITIAL TECHNICAL REFRESH	A		-	-	6.313	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 3) FRIGATES - MISSILE			-	-	30.952	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4) PATROL COMBATANTS																				
4.1) RA007 - GRIFFIN MISSILE SYSTEM (GMS) INITIAL TECHNICAL REFRESH	A		-	-	1.902	-	-	1.583	-	-	1.635	-	-	1.697	-	-	-	-	-	1.697
Subtotal: 4) PATROL COMBATANTS			-	-	1.902	-	-	1.583	-	-	1.635	-	-	1.697	-	-	-	-	-	1.697
5) TOMAHAWK AND TOMAHAWK MISSILE PLANNING CENTER																				
5.1) RA003 - INDUSTRIAL FACILITIES ^(†)	A		1,653K	5	8.264	985,000.00	1	0.985	480,000.00	1	0.480	485,000.00	1	0.485	-	-	-	485,000.00	1	0.485
Subtotal: 5) TOMAHAWK AND TOMAHAWK MISSILE PLANNING CENTER			-	-	8.264	-	-	0.985	-	-	0.480	-	-	0.485	-	-	-	-	-	0.485
Total			-	-	73.499	-	-	5.981	-	-	5.378	-	-	5.071	-	-	-	-	-	5.071
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 / 04 / 6				P-1 Line Item Number / Title: 5543 / 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 <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
5) TOMAHAWK AND TOMAHAWK MISSILE PLANNING CENTER												
5.1) RA003 - INDUSTRIAL FACILITIES		2017	TBD / TBD	Reqn	NAWC CL	Jun 2019	Oct 2019	1	463,000.00	Y		Dec 2018
5.1) RA003 - INDUSTRIAL FACILITIES		2018	DLA Aviation / RICHMOND, VA	MIPR	DLA/AVIATION	Jun 2018	Oct 2018	1	985,000.00	Y		Jan 2018
5.1) RA003 - INDUSTRIAL FACILITIES		2019	DLA Aviation / RICHMOND, VA	MIPR	DLA/AVIATION	Mar 2019	Jul 2019	1	480,000.00	Y		Oct 2018
5.1) RA003 - INDUSTRIAL FACILITIES		2020	DLA Troop Support / Philadelphia, PA	MIPR	DLA/Troop Support	Mar 2020	Jul 2020	1	485,000.00	Y		Oct 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 04: Ordnance Support Equipment / BSA 7: Other Expendable Ordnance							P-1 Line Item Number / Title: 5530 / Anti-ship Missile Decoy 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>)	0.000	0.000	0.000	41.962	0.000	41.962	66.284	86.599	96.433	98.568	563.360	953.206
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	0.000	0.000	41.962	0.000	41.962	66.284	86.599	96.433	98.568	563.360	953.206
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	0.000	0.000	41.962	0.000	41.962	66.284	86.599	96.433	98.568	563.360	953.206
<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:
 Funds were realigned from BLI 5530 to BLI 5231 beginning in FY15, and have been realigned back to BLI 5530 beginning in FY20. This is not a new start.

The Anti-Ship Missile Decoy Program covers a family of decoys and the equipment to deploy them. It is an essential element of the Anti-Ship Missile Defense tactics to counter the threat of enemy homing missiles. NULKA is a joint program with Australia, and is currently in service with the Australian, Canadian, and United States Navies. NULKA consists of the Decoy Launching System (DLS) (MK 53) and Offboard Active Decoy (MK 234). This line contains various equipment and subsystems for a system which will provide the capability to defeat the effectiveness of hostile Anti-Ship cruise missiles. The MK 53 DLS consists of a Decoy Launch Processer (DLP), launching power supplies, and from two to six launchers depending on the ship class. Each launcher is capable of storing and launching two Nulka decoys. The MK 53 DLS provides the launch authorization and flight demands to the Nulka decoy when a Nulka engagement is initiated by the EW operator. The MK 53 DLS has been installed on the CG 47, DDG 51, FFG 7, LSD 41, and LSD 49 Classes in prior years. Installation of the MK 53 DLS on CVNs began in FY14 and it will be installed on eight carriers. Six of the final seven DLS units are being procured under BLI 5231. The last DLS will be procured under this budget (BLI 5530), which starts in FY20.

The Advanced Decoy Architecture Project (ADAP) is EW payload developed under an ONR program that targets specific threats that the current payload on the Nulka decoy does not. The ADAP payload provides an advanced Electronic Warfare (EW) transmitter and increased signal processing capability.

VV001: Procurement of MK 53 Decoy Launching Systems.

VV002: Procurement of MK 234 NULKA Decoys.

VV003: Engineering Changes and Logistics Support - Funding will procure Engineering Change Proposals (ECPs)/ORDALT Kits to ensure future tactical suitability and viability of NULKA and to address obsolescence, quality assurance, reliability, safety, Electromagnetic Interference (EMI), and diminishing manufacturing source issues. Additionally, funding will provide for updating Logistics including decoy and special purpose test equipment maintenance, provisioning, transportation, and training school support as required.

VV830: Production Engineering support to the MK 234 NULKA Decoy.

VV500: Procurement of Advanced Offboard EW mass models and ALQ-248 pods.

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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 04: Ordnance Support Equipment / BSA 7: Other Expendable Ordnance		P-1 Line Item Number / Title: 5530 / Anti-ship Missile Decoy 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		
Equipment Installation: Funding is for the installation of NULKA Decoy Systems, and Fleet Modernization Program installs.		

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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 04: Ordnance Support Equipment / BSA 7: Other Expendable Ordnance						P-1 Line Item Number / Title: 5530 / Anti-ship Missile Decoy 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	5530 - ANTI SHIP MISSILE DECOY SYSTEM	P-5a, P-21			- / 0.000	- / -	- / -	- / 39.216	- / -	- / 39.216
P-3a	1 / VV001 NULKA SYSTEMS (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 2.746	- / 0.000	- / 2.746
P-40	Total Gross/Weapon System Cost				- / 0.000	- / 0.000	- / 0.000	- / 41.962	- / 0.000	- / 41.962

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	5530 - ANTI SHIP MISSILE DECOY SYSTEM	P-5a, P-21			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / VV001 NULKA SYSTEMS (TBD)				- / 6.997	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 9.743
P-40	Total Gross/Weapon System Cost				- / 66.284	- / 86.599	- / 96.433	- / 98.568	- / 563.360	- / 953.206

*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 / 04 / 7								P-1 Line Item Number / Title: 5530 / Anti-ship Missile Decoy System							Aggregated Items Title: 5530 - ANTI SHIP MISSILE DECOY 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) VV002 - NULKA DECOYS ⁽¹⁾																				
1.1) VV002 - NULKA DECOYS ^(†)	A		-	-	-	-	-	-	-	-	1,496K	22	32.912	-	-	-	1,496K	22	32.912	
Subtotal: 1) VV002 - NULKA DECOYS			-	-	0.000	-	-	-	-	-	-	-	32.912	-	-	-	-	-	32.912	
2) VV003 - ENG CHANGE PROPOSALS (ECPs)/ILS SUPPORT ⁽²⁾																				
2.1) ECPs	A		-	-	-	-	-	-	-	-	-	-	1.314	-	-	-	-	-	1.314	
2.2) Logistics/ Production Support	A		-	-	-	-	-	-	-	-	-	-	2.957	-	-	-	-	-	2.957	
Subtotal: 2) VV003 - ENG CHANGE PROPOSALS (ECPs)/ILS SUPPORT			-	-	0.000	-	-	-	-	-	-	-	4.271	-	-	-	-	-	4.271	
3) VV830 - PRODUCTION ENGINEERING ⁽³⁾																				
3.1) VV830 - PRODUCTION ENGINEERING	A		-	-	-	-	-	-	-	-	-	-	2.033	-	-	-	-	-	2.033	
Subtotal: 3) VV830 - PRODUCTION ENGINEERING			-	-	0.000	-	-	-	-	-	-	-	2.033	-	-	-	-	-	2.033	
Total			-	-	0.000	-	-	-	-	-	-	-	39.216	-	-	-	-	-	39.216	

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) 1288 = Total number of Nulka decoys (PU: VV002) To Complete: 962 decoys procured under BLI:5530 (FY14 and prior) and 33 decoys procured under BLI:5231 (FY15-FY17).

(2) VV003: Engineering Changes and Logistics Support - Funding will procure Engineering Change Proposals (ECPs)/ORDALT Kits to ensure future tactical suitability and viability of NULKA and to address obsolescence, quality assurance, reliability, safety, Electromagnetic Interference (EMI), and diminishing manufacturing source issues. Additionally, funding will provide for updating Logistics including decoy and special purpose test equipment maintenance, provisioning, transportation, and training school support as required.

(3) VV830: Production Engineering Support to the MK 234 NULKA Decoy.

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7				P-1 Line Item Number / Title: 5530 / Anti-ship Missile Decoy System						Aggregated Items: 5530 - ANTI SHIP MISSILE DECOY 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 <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date	
1) VV002 - NULKA DECOYS													
1.1) VV002 - NULKA DECOYS ^(†)		2020	BAES / AUSTRALIA	C / TBD	US Embassy, Canberra	Oct 2019	Dec 2020	22	1,496K	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 / 04 / 7										P-1 Line Item Number / Title: 5530 / Anti-ship Missile Decoy System										Aggregated Items: 5530 - ANTI SHIP MISSILE DECOY SYSTEM													
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			
1) VV002 - NULKA DECOYS																																	
1.1) VV002 - NULKA DECOYS																																	
	11	2020	NAVY	22	0	22	A -	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2	2	2	2	2	2	2	2	4			
							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 / 04 / 7										P-1 Line Item Number / Title: 5530 / Anti-ship Missile Decoy System										Aggregated Items: 5530 - ANTI SHIP MISSILE DECOY SYSTEM													
Items (Units in Each)								Fiscal Year 2022												Fiscal Year 2023												BALANCE	
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	Calendar Year 2022												Calendar Year 2023														
							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) VV002 - NULKA DECOYS																																	
1.1) VV002 - NULKA DECOYS																																	
	11	2020	NAVY	22	18	4	2	2																								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 / 04 / 7				P-1 Line Item Number / Title: 5530 / Anti-ship Missile Decoy System				Aggregated Items: 5530 - ANTI SHIP MISSILE DECOY 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	BAES - AUSTRALIA			192	0	6	12	18	0	0	12	12

"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 / 04 / 7				P-1 Line Item Number / Title: 5530 / Anti-ship Missile Decoy System				Modification Number / Title: 1 / VV001 NULKA 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)	0.000	0.000	0.000	2.746	0.000	2.746	6.997	0.000	0.000	0.000	0.000	9.743
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	0.000	0.000	0.000	2.746	0.000	2.746	6.997	0.000	0.000	0.000	0.000	9.743
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	0.000	0.000	0.000	2.746	0.000	2.746	6.997	0.000	0.000	0.000	0.000	9.743
(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:

Program funds the procurement and installation of the MK53 NULKA System.

[NULKA SYSTEMS] Funds the procurement and installation of the MK53 Nulka Decoy Launching System (DLS). The MK 53 DLS consists of a Decoy Launch Processer (DLP), launching power supplies and from two to six launchers depending on the ship class. Each launcher is capable of storing and launching two Nulka decoys. The MK 53 DLS provides the launch authorization and flight demands to the Nulka decoy when a Nulka engagement is initiated by the EW operator. The MK 53 DLS has been installed on the CG 47, DDG 51, FFG 7, LSD 41, and LSD 49 Classes in prior years. Installation of the MK 53 DLS on CVNs began in FY14 and it will be installed on eight carriers. Six of the final seven DLS units are being procured under BLI 5231. The last DLS will be procured under BLI 5530, which starts in FY20.

Note: FY20 and FY21 installation costs for the FY20 procured DLS on CVN 77 in Norfolk have increased since PB19, primarily due to the short duration of the availability (187 days) versus a normal installation availability of 270 days. The short availability will require significant overtime to complete the installation on-time. Estimates for the CVN 77 installation costs are based on FY18 installation costs on CVN 71 (under BLI 5231), which had an availability of 185 days, and also resulted in significant cost increases compared to original estimates.

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LI 5530 - Anti-ship Missile Decoy System

Navy

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7					P-1 Line Item Number / Title: 5530 / Anti-ship Missile Decoy System										Modification Number / Title: 1 / VV001 NULKA SYSTEMS																
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:																					
Modification Item 1 of 1: VV001 NULKA SYSTEMS																															
Manufacturer Information																															
Manufacturer Name: Sechan Electronics, Inc.										Manufacturer Location: Lititz, PA																					
Administrative Leadtime (in Months): 6										Production Leadtime (in Months): 14																					
Dates	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024						
Contract Dates									Dec 2019																						
Delivery Dates									Feb 2021																						
Installation Information																															
Method of Implementation: AIT:: Installation Name: NULKA 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		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2020		- / -	- / -	- / -	0 / 1.286	0 / 0.000	0 / 1.286	1 / 6.997	- / -	- / -	- / -	0 / 0.000	1 / 8.283																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2024		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		- / -	- / -	- / -	0 / 1.286	0 / 0.000	0 / 1.286	1 / 6.997	- / -	- / -	- / -	0 / 0.000	1 / 8.283																		
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-40, Budget Line Item Justification: PB 2020 Navy								Date: March 2019				
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 7: Other Expendable Ordnance							P-1 Line Item Number / Title: 5661 / Submarine Training Device Mods					
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)	366.285	72.756	56.834	75.057	0.000	75.057	68.858	78.270	79.794	81.394	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	366.285	72.756	56.834	75.057	0.000	75.057	68.858	78.270	79.794	81.394	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	366.285	72.756	56.834	75.057	0.000	75.057	68.858	78.270	79.794	81.394	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	0.769	0.322	0.140	-	0.140	0.195	0.199	0.203	0.438	Continuing	Continuing
Flyaway Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Description:												
The OPN 5661 line procures, installs and delivers training devices at the seven schoolhouses worldwide. These funds support Hull, Mechanical, and Electrical (HM&E), Navigation and Combat Control System training requirements, training upgrades and engineering sustainment for the Submarine Weapon Systems. Training devices develop system operation and seamanship skills to submarine crews utilized in all submarine mission sets. Funding includes modernization of training devices to maintain compatibility with existing fleet operational equipment and to implement Trainer Enhancement Changes (TECs) as directed by the Fleet Type Commanders and Resource Sponsor (N97). Funding also includes procurement of training infrastructure and devices at Portsmouth Naval Shipyard for fundamental skills required for crew certification and proficiencies during extended maintenance periods.												
Overall program funding and requirements for the Submarine Multi-Mission Team Trainer (SMMTT) procurement / modernization increased beginning in FY2018 based on Fleet availabilities and Trainer alignment to increase support for VA Class Modernization, SSBN/SSGN Switchable SMMTT and Sensor Modernization tasks that were not previously funded (SMMTT New Normal).												
Line item 5661 was broken into five functional areas to support submarine training: Hull Mechanical & Electrical Trainers (HM&E), Engineering Trainers, Navigation Trainers, Combat Control Acoustic Trainers and Attack Center Trainers.												
[P40A / Submarine Training]: This line provides funds to modify/upgrade training devices to keep them compatible with equivalent changes made to Fleet operational equipment and to implement Training Enhancement Changes (TECs) to the trainer systems capabilities.												
[P40A / TD 100 HM&E TRAINERS]: This line procures HM&E Fleet and Team Trainer Technical Training Equipment (TTE), Training Devices (TD) and Training Enhancement Changes (TECs), which are centrally managed systems, support equipment and various modifications and upgrades to simulators / stimulators, such as: Submarine Ship Control Operator Trainer (SCOT) and Firefighter Trainer (FFT). These modifications and upgrades were identified by the Submarine Learning Center (SLC) and approved by Chief of Naval Operations (CNO) for use at the submarine training activities. Technical Training Equipment/Training Devices sustain high fidelity training and replaces equipment beyond economical repair or procures new equipment. Funds also procure Submarine High Risk Trainer requirements for Pressurized Submarine Escape Trainers and Damage Control Wet Trainers and Multi-Reconfigurable training systems.												
[P40A / TD200 ENGINEERING TRAINERS]: This line procures and installs Nuclear Propulsion Plant Fleet Interactive Display Equipment (FIDE) trainers, Virtual Interactive Display Equipment (VIDE), Training Enhancement Changes (TECs), Multi-Reconfigurable training systems and other Navy Engineering Training devices as identified by the Submarine Learning Center (SLC) and approved by the Chief of Naval Operations (CNO) for use at the submarine training activities. FIDEs/VIDEs support multiple ship classes and configurations at seven different geographic sites and Portsmouth Naval Shipyard, each requiring												

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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 04: Ordnance Support Equipment / BSA 7: Other Expendable Ordnance		P-1 Line Item Number / Title: 5661 / Submarine Training Device Mods
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		
different levels of installation work. Therefore, the cost for the program varies widely from year to year depending on the combination of these factors. FIDE and VIDE meet NAVSEA 08 requirements to provide advanced shore-based nuclear operator training.		
[P40A / TD 300 NAVIGATION TRAINERS]: This line procures Submarine Fleet and Team Navigation trainer sustaining equipment and systems which emulate ship characteristics. Navigation training systems include, but are not limited to: Virtual Environment Submarine (VESUB), Submarine Piloting and Navigation Trainers (SPAN), Reconfigurable SPAN (RSPAN), Submarine Bridge Trainer/Integrated SPAN (SBT/ISPAN) and associated upgrades to all Homeports, Navigation Databases, Periscope Simulation (PSIM) Harbor Databases, Electronic Chart Display and Information Systems-Navy (ECDIS-N) and PC-based Team Trainers including Mini-SPANs. A Single Story Bridge Trainer will be procured for Homeports where an SBT Dome MILCON cannot be accommodated. This line also provides configuration changes for the Voyage Management Systems (VMS), ECDIS-N, and the Submarine Multi Reconfigurable Training System (MRTS). The MRTS family includes VA CLASS Torpedo Room, Emergency Diesel Generator, Weapons Launch Console Team Trainer, and Submarine Communications Support System / Common Submarine Radio Room (SCSS / CSRR) trainers. The SBT/ISPAN is comprised of Virtual Tactical, Weapons, Mission Payload and Sonar Simulation Control, Beam Forming Sonar Simulation Trainer, VMS, ECDIS-N, Radar Simulation, Navigation Aids, Periscope Simulation (PSIM), and Harbor Databases. These training systems and Training Enhancement Changes (TECs) are identified by the Submarine Learning Center (SLC) and approved by Chief of Naval Operations (CNO), for use at the submarine training activities.		
[P40A / TD 400 COMBAT CONTROL ACOUSTIC TRAINERS]: This line procures Submarine Common Operational Analysis And Employment Trainer (COAET) fundamental and employment skill level, Sonar Employment Trainer (SET) and Beam Simulation For Sonar Trainers (BSST) acoustic operator employment skill and team training fleet requirements. Funds also provide for TECs, Virtualized Tactical Control (VTAC), BSST,Periscope Simulation (PSIM), SUBSKILLSNET, Weapons Control, Mission Payload Control, Advanced Processing Build (APB)/ Technical Insertion (TI),and Sonar Tactical Decision Aid (STDA) implementation. The Sonar Employment Trainer (SET) provides acoustic operator employment Fleet and team training for submarine sonar systems. It uses entirely commercial components to contain contact and environment models, simulations of the sensors and signal processing, simulated operator consoles, and an instructional subsystem including an instructor's console. SET is used to train advanced operators in the Advanced Sonar Employment and Sonar Supervisor courses. The SET is periodically upgraded to support current software Advanced Processor Builds (APBs) and Technical Insertions (TIs). The BSST is a light weight, medium fidelity sonar operator trainer for journeyman level training. COAET provides operator and introductory team training to submarine force personnel prior to entry into the Submarine Multi Mission Team Trainer (SMMTT) as well as supplemental training to off-load the heavily utilized attack center trainers. COAET utilizes partial tactical builds and emulations of the latest Sonar, Combat Control, Imaging and Electronic Warfare Systems which provide an environment substantially equivalent to that found on board ship, thus enabling students to develop and maintain the attack center expertise necessary to support Fleet operations.		
[P40A / TD 500 ATTACK CENTER TRAINERS]: The SUBMARINE MULTI MISSION TEAM TRAINER (SMMTT) line procures highly sophisticated shore based Combat System Team Trainers capable of training personnel in all aspects of submarine approach, attack and surveillance operations in a controlled, simulated environment to achieve desired submarine force readiness levels. Also, funding is included for Trainer Enhancement Changes (TECs). SMMTT integrates the Combat Control System (CCS) AN/BYG-1 installed on SSN/SSBN/SSGN Class submarines and is planned for future modernizations of software and hardware to provide enhanced warfighter capabilities. The Tactical Acoustic Rapid COTS (commercial-off-the-shelf) Insertion (ARCI) AN/BQQ-10 upgrades are being installed with future revisions which provides enhanced warfighter capabilities. The Submarine Multi-Mission Team Trainer (SMMTT) supports operator, employment, strike, and Battle Group training for enlisted and officer pipelines for these systems. The SMMTT provides operators and combat teams the opportunity to train ashore prior to and between deployments and is also used for SSN/SSGN crew certification. This program includes modifications to the functionality of the Periscope Simulator (PSIM) to provide common imaging training for CCS trainers and includes Electronic Surveillance Simulation Software. This trainer supports real world recorded sensors for playback in the trainer. This line supports Engineering Production Model (EPM) to manage the additional TI/APB and Trainer Enhancement requirements as directed by the TYCOM.		

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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 04: Ordnance Support Equipment / BSA 7: Other Expendable Ordnance						P-1 Line Item Number / Title: 5661 / Submarine Training Device Mods			
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 Training	P-5a, P-21			- / 234.649	- / 53.242	- / 48.046	- / 60.909	- / -	- / 60.909
P-3a	1 / SMMTT PH III MODS (TBD)				- / 131.636	- / 19.514	- / 8.788	- / 14.148	- / 0.000	- / 14.148
P-40	Total Gross/Weapon System Cost				- / 366.285	- / 72.756	- / 56.834	- / 75.057	- / 0.000	- / 75.057

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 Training	P-5a, P-21			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / SMMTT PH III MODS (TBD)				- / 11.199	- / 11.563	- / 11.880	- / 11.825	- / 0.985	- / 221.538
P-40	Total Gross/Weapon System Cost				- / 68.858	- / 78.270	- / 79.794	- / 81.394	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. 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 budget provided in FY2019 was reduced to support the Undersea Warfare priorities. FY2020 funds restore the budget to meet fleet training needs and keep simulators aligned and supports the submarine modernization in each homeport. The baseline has been adjusted to fund other Undersea Warfare warfighting priorities, submarine homeport changes and shipboard modernization. FY2020 adds Harpoon Simulation/Stimulation to the portfolio.

TD100 HME Trainers - New training requirement beginning in FY2020 procures Norfolk Homeport HM&E Trainers in lieu of procuring FFT.

1.2 VA CLASS HM&E Trainers Norfolk - FY2020 procures Multi-Reconfigurable Training System (MRTS) 3D and RIX HPAC Maintenance Trainers.

TD300 Navigation Trainers -

3.1 Submarine Bridge Trainer (SBT)/Integrated Submarine Piloting and Navigation (ISPAN) - FY2020 procures 2 ISPANs for both the Norfolk and San Diego sites and adds 688 and VA Class Navigation Training Capabilities.

TD500 Attack Center Trainers -

5.1 SSBN Submarine Multi-Mission Team Trainer (SMMTT) - FY2020 procures updates to the current TI/APB for tactical and simulation subsystems for the SSBN SMMTT trainer.

5.2 SSN SMMTT Tailored 2/4 Model - FY2020 procures one complete Attack Center trainer in Norfolk to support SSN modernization.

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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 04: Ordnance Support Equipment / BSA 7: Other Expendable Ordnance		P-1 Line Item Number / Title: 5661 / Submarine Training Device Mods
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		
5.3 SSN SMMTT EPM- FY2020 procures an Engineering Production Model (EPM) at the Warfare Center. 5.5 VA SMMTT New Normal SW MODS - FY2020 procures AWESIM simulation/stimulation hardware/software updates to all Attack Centers. These procurements are slightly higher in cost from FY2019 due to adding hardware. 5.8 SSGN SMMTT SW MODS- FY2020 procures APB software updates for Kings Bay and Bangor sites. 5.9 SMMTT TECH SUPPORT - FY2020 supports newly required capability of SMMTT to SMMTT connectivity and support at all Submarine Training sites to support unit level team training as directed by COMSUBFOR and integrates Torpedo Relevancy Model (TRM) APB 5. Increase in technical support for Harpoon Simulation/Stimulation beginning in FY2020. 5.10 Sensor Simulation - FY 2020 procures Large Vertical Array (LVA) sensor capability for SMMTT providing Acoustic Superiority for the Submarine Force as directed by the Chief of Naval Operations (CNO).		

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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 / 04 / 7								P-1 Line Item Number / Title: 5661 / Submarine Training Device Mods								Aggregated Items Title: Submarine Training				
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) TD 100 HM&E TRAINERS																				
1.1) FIREFIGHTING TRAINER ^(†)	A		3,900K	2	7.800	2,040K	1	2.040	2,738K	1	2.738	-	-	-	-	-	-	-	-	-
1.2) VA CLASS HME Norfolk ^{(1)(†)}	A		-	-	-	-	-	-	-	-	-	838,500.00	2	1.677	-	-	-	838,500.00	2	1.677
1.3) SUBMARINE TRAINING DEVICE MODS	A		-	-	14.458	-	-	1.594	-	-	1.633	-	-	1.600	-	-	-	-	-	1.600
1.4) SCOT MODS	A		-	-	7.476	-	-	1.190	-	-	1.211	-	-	1.200	-	-	-	-	-	1.200
1.5) VSCOT MODS	A		-	-	6.391	-	-	0.924	-	-	0.942	-	-	0.940	-	-	-	-	-	0.940
Subtotal: 1) TD 100 HM&E TRAINERS			-	-	36.125	-	-	5.748	-	-	6.524	-	-	5.417	-	-	-	-	-	5.417
2) TD200 ENGINEERING TRAINERS																				
2.1) FIDE ⁽²⁾	A		-	-	18.003	-	-	3.056	-	-	3.398	-	-	3.469	-	-	-	-	-	3.469
2.2) VIDE	A		-	-	1.600	-	-	1.624	-	-	1.710	-	-	1.751	-	-	-	-	-	1.751
Subtotal: 2) TD200 ENGINEERING TRAINERS			-	-	19.603	-	-	4.680	-	-	5.108	-	-	5.220	-	-	-	-	-	5.220
3) TD 300 NAVIGATION TRAINERS																				
3.1) SBT/ISPAN ^{(3)(†)}	A		20,042K	1	20.042	1,639K	2	3.278	1,846K	1	1.846	3,590K	2	7.179	-	-	-	3,590K	2	7.179
3.4) NAVIGATION TRAINER UPDATES	A		-	-	13.605	-	-	0.287	-	-	0.304	-	-	0.320	-	-	-	-	-	0.320
Subtotal: 3) TD 300 NAVIGATION TRAINERS			-	-	33.647	-	-	3.565	-	-	2.150	-	-	7.499	-	-	-	-	-	7.499
4) TD 400 COMBAT CONTROL ACOUSTIC TRAINERS																				
4.1) SET ^(†)	A		10,844K	1	10.844	1,306K	1	1.306	1,332K	1	1.332	1,356K	1	1.356	-	-	-	1,356K	1	1.356
4.3) COAET MODIFICATIONS ^(†)	A		814,538.46	52	42.356	1,102K	4	4.410	1,122K	4	4.489	1,142K	4	4.570	-	-	-	1,142K	4	4.570
Subtotal: 4) TD 400 COMBAT CONTROL ACOUSTIC TRAINERS			-	-	53.200	-	-	5.716	-	-	5.821	-	-	5.926	-	-	-	-	-	5.926
5) TD 500 ATTACK CENTER TRAINERS																				
5.1) SSBN SMMTT ^(†)	A		7,995K	1	7.995	-	-	4.102	-	-	4.176	-	-	4.253	-	-	-	-	-	4.253
5.2) SSN SMMTT TAILORED 2/4 MODEL ^{(4)(†)}	A		-	-	-	-	-	-	-	-	-	8,000K	1	8.000	-	-	-	8,000K	1	8.000
5.3) SSN SMMTT EPM ^(†)	A		2,179K	14	30.505	3,352K	1	3.352	3,414K	1	3.414	3,475K	1	3.475	-	-	-	3,475K	1	3.475
5.4) VA SMMTT NEW NORMAL HW ^(†)	A		-	-	-	4,060K	3	12.180	-	-	-	-	-	-	-	-	-	-	-	-
5.5) VA SMMTT NEW NORMAL SW MODS ⁽⁵⁾	A		-	-	-	-	-	-	-	-	-	-	-	8.871	-	-	-	-	-	8.871

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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 / 04 / 7							P-1 Line Item Number / Title: 5661 / Submarine Training Device Mods								Aggregated Items Title: Submarine Training					
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)
5.6) VA SMMTT EPM	A		3,127K	5	15.633	-	-	4.060	-	-	-	-	-	-	-	-	-	-	-	-
5.7) SSGN SMMTT HW ^(†)	A		-	-	-	-	-	2.100	6,050K	2	12.100	-	-	-	-	-	-	-	-	-
5.8) SSGN SMMTT SW MODS ⁽⁶⁾	A		-	-	-	-	-	-	-	-	-	-	-	2.750	-	-	-	-	-	2.750
5.9) SMMTT TECH SUPPORT ⁽⁷⁾	A		-	-	37.941	-	-	4.303	-	-	3.531	-	-	6.278	-	-	-	-	-	6.278
5.10) SENSOR SIMULATION ^{(8)(†)}	A		-	-	-	-	-	3.436	5,222K	1	5.222	-	-	3.220	-	-	-	-	-	3.220
Subtotal: 5) TD 500 ATTACK CENTER TRAINERS			-	-	92.074	-	-	33.533	-	-	28.443	-	-	36.847	-	-	-	-	-	36.847
Total			-	-	234.649	-	-	53.242	-	-	48.046	-	-	60.909	-	-	-	-	-	60.909

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⁾ 1.2 VA CLASS HME Trainers - Procures one MRTS 3D trainer and one RIX HPAC trainer beginning in FY2020. These procurements include all hardware and software required to deliver VA CLASS HME Capability ashore.

⁽²⁾ 2.1/2.2 procures training laboratories and training devices required to support FIDE/VIDE training.

⁽³⁾ 3.1 SBT/ISPAN - FY2020 procures the complete Navigation Team Trainer consisting of control and server rooms resulting in a significantly higher unit cost per ISPAN. This procurement improves projector fidelity and reliability for longer training events. FY2019 procured a hardware upgrade for the SBT Projector Ring only at a lower cost.

⁽⁴⁾ 5.2 SSN SMMTT Tailored 2/4 Model -Funding increases in FY2020 due to the procurement of one complete attack center (hardware, software, server room, control room and power supplies) in Norfolk. This will provide 688 Class Submarines with modernized attack center capabilities during crew and pre-deployment certifications ashore.

⁽⁵⁾ 5.5 VA SMMTT New Normal SW MODS -FY2020 provides software APB modifications with minor hardware for Groton. TI/APB updates match trainer configuration to fleet configuration to enable new capabilities for VA CLASS submarines.

⁽⁶⁾ 5.8 SSGN SMMTT -FY2020 procures software APB updates with minor hardware. APB updates will be completed in FY2020 and sustainment will begin in FY2021. These APB updates keep the SSGN SMMTT current with fleet configurations.

⁽⁷⁾ 5.9 SMMTT TECH SUPPORT -Funds increase from FY2019 to FY2020 due to the additional technical support required to add software/hardware modifications for SMMTT to SMMTT Connectivity and integrate TRM APB 5 at all sites. This additional support is required to provide the submarine force with the ability to train against a live submarine crew in another geographical location as part of the CNO Objectives for live training ashore. This support also keeps the torpedo models current as they become part of SWFTS. FY2020 also adds Harpoon Simulation/Stimulation to the portfolio and increases the technical support requirements intended for all sites.

⁽⁸⁾ 5.10 Sensor Simulation - FY2020 decreases from FY2019 as funds were reprioritized to fund Large Vertical Array (LVA) only and procures software updates only. FY2019 procured and installed EW Pro and WSQ-9 hardware kits with software updates. This effort provides an acoustic/stimulation for the LVA which is critical for Pre-Deployment Training and fleet readiness.

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7				P-1 Line Item Number / Title: 5661 / Submarine Training Device Mods					Aggregated Items: Submarine Training			
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) TD 100 HM&E TRAINERS												
1.1) FIREFIGHTING TRAINER		2017	ELECTRIC BOAT / NEW LONDON	C / FFP	** NO PCO **	Jun 2017	Jun 2017	2	3,900K	N	Oct 2018	
1.1) FIREFIGHTING TRAINER		2018	ELECTRIC BOAT / NEW LONDON	C / FFP	** NO PCO **	Feb 2018	Feb 2018	1	2,040K	N	Oct 2018	
1.1) FIREFIGHTING TRAINER		2019	ELECTRIC BOAT / NEW LONDON	C / TBD	** NO PCO **	Oct 2018	Oct 2018	1	2,738K	N	Oct 2020	
1.2) VA CLASS HME Norfolk ⁽¹⁾		2020	NAWC TSD / Orlando, FL	C / CPFF	NAWC	Jan 2020	Jan 2021	2	838,500.00	N	Dec 2021	Jul 2019
3) TD 300 NAVIGATION TRAINERS												
3.1) SBT/ISPAN ⁽³⁾		2017	NUWC NPT / NEWPORT, RI/CD	C / TBD	** NO PCO **	Dec 2017	Jun 2019	1	1,933K	Y		Oct 2017
3.1) SBT/ISPAN ⁽³⁾		2018	NUWC NPT / NEWPORT, RI/CD	C / TBD	** NO PCO **	Oct 2017	Apr 2019	2	1,639K	N	Oct 2018	Oct 2017
3.1) SBT/ISPAN ⁽³⁾		2019	NUWC NPT / NEWPORT, RI/CD	C / TBD	** NO PCO **	Oct 2018	Apr 2020	1	1,846K	N	Oct 2018	
4) TD 400 COMBAT CONTROL ACOUSTIC TRAINERS												
4.1) SET		2017	NSWC CD / BETHESDA, MD	Reqn	NSWC CD	Feb 2017	Feb 2017	1	1,287K	N		
4.1) SET		2018	NSWC CD / BETHESDA, MD	C / TBD	** NO PCO **	Oct 2017	Oct 2017	1	1,306K	N		
4.1) SET		2019	NSWC CD / BETHESDA, MD	C / TBD	** NO PCO **	Oct 2018	Oct 2018	1	1,332K	N		
4.3) COAET MODIFICATIONS		2017	NSWC CD / BETHESDA, MD	Reqn	NSWC CD	Oct 2016	Jun 2017	4	1,083K	N	Jun 2016	
5) TD 500 ATTACK CENTER TRAINERS												
5.1) SSBN SMMTT		2017	NSWC CD / BETHESDA, MD	Reqn	NSWC	Jan 2017	Apr 2017	1	7,995K	N	Sep 2017	
5.2) SSN SMMTT TAILORED 2/4 MODEL ^{(4)(†)}		2020	Lockheed Martin / Bethesda MD	C / TBD	** NO PCO **	Jan 2020	Oct 2020	1	8,000K	N	Dec 2020	
5.3) SSN SMMTT EPM		2017	NSWC CD / BETHESDA, MD	C / TBD	NSWC CD	Oct 2016	Oct 2016	1	2,153K	N		
5.4) VA SMMTT NEW NORMAL HW		2018	NSWC CD / BETHESDA, MD	C / TBD	NSWC CD	Oct 2017	Aug 2019	3	4,060K	Y		Apr 2017
5.7) SSGN SMMTT HW		2019	NSWC CD / BETHESDA, MD	C / TBD	NSWC CD	Oct 2018	Oct 2019	2	6,050K	Y		Jun 2017
5.10) SENSOR SIMULATION ⁽⁸⁾		2019	NSWC CD / BETHESDA, MD	C / TBD	** NO PCO **	Nov 2018	Nov 2018	1	5,222K	N		

^(†) 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 / 04 / 7										P-1 Line Item Number / Title: 5661 / Submarine Training Device Mods																			Aggregated Items: Submarine Training									
Items (Units in Each)							Fiscal Year 2017													Fiscal Year 2018													BALANCE					
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2016	BAL DUE AS OF 1 OCT	Calendar Year 2017									Calendar Year 2018																						
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP								
5) TD 500 ATTACK CENTER TRAINERS																																						
5.2) SSN SMMTT TAILORED 2/4 MODEL ⁽⁴⁾																																						
	12	2020	NAVY		1	0	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	1						

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Exhibit P-21, Production Schedule: PB 2020 Navy																			Date: March 2019												
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7										P-1 Line Item Number / Title: 5661 / Submarine Training Device Mods										Aggregated Items: Submarine Training											
Items (Units in Each)							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	
5) TD 500 ATTACK CENTER TRAINERS																															
5.2) SSN SMMTT TAILORED 2/4 MODEL ⁽⁴⁾																															
	12	2020	NAVY		1	0	1														A -	-	-	-	-	-	-	-	-	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 / 04 / 7										P-1 Line Item Number / Title: 5661 / Submarine Training Device Mods										Aggregated Items: Submarine Training												
Items (Units in Each)							Fiscal Year 2021										Fiscal Year 2022										BALANCE					
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2020	BAL DUE AS OF 1 OCT	Calendar Year 2021										Calendar Year 2022															
							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	
5) TD 500 ATTACK CENTER TRAINERS																																
5.2) SSN SMMTT TAILORED 2/4 MODEL ⁽⁴⁾																																
	12	2020	NAVY		1		0		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 / 04 / 7					P-1 Line Item Number / Title: 5661 / Submarine Training Device Mods				Aggregated Items: Submarine Training			
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	Lockheed Martin - Bethesda MD			TBD	0	0	0	0	0	0	0	0
"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 / 04 / 7					P-1 Line Item Number / Title: 5661 / Submarine Training Device Mods					Modification Number / Title: 1 / SMMTT PH III MODS		
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>	131.636	19.514	8.788	14.148	0.000	14.148	11.199	11.563	11.880	11.825	0.985	221.538
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	131.636	19.514	8.788	14.148	0.000	14.148	11.199	11.563	11.880	11.825	0.985	221.538
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	131.636	19.514	8.788	14.148	0.000	14.148	11.199	11.563	11.880	11.825	0.985	221.538
<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: SMMTT upgrades to hardware and simulation to match current Fleet configurations. [SMMTT PHIII MODS] FY2020 increased the unit costs due to the added hardware and software modifications required to include the All World Environmental Simulator (AWESIM) capability and Power Conditioning Modules for all seven sites. FY2019 procures software kits only at a lower cost. Adding these additional capabilities modernizes the SSBN SMMTT Phase III model which more accurately reflects the real world ocean environment, and replacement of Uninterrupted Power Supply equipment that reached end of service life.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7				P-1 Line Item Number / Title: 5661 / Submarine Training Device Mods						Modification Number / Title: 1 / SMMTT PH III MODS			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: SMMTT PH III MODIFICATIONS				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: SMMTT PH III MODS													
B Kits													
Recurring													
1.1.1) SMMTT PHIII MODS - NonOrganic ⁽⁹⁾	39 / 127.324	3 / 18.775	6 / 8.028	4 / 13.373	- / -	4 / 13.373	3 / 10.411	3 / 10.725	3 / 10.830	3 / 10.840	- / -	64 / 210.306	
Subtotal: Recurring	- / 127.324	- / 18.775	- / 8.028	- / 13.373	- / -	- / 13.373	- / 10.411	- / 10.725	- / 10.830	- / 10.840	- / 0.000	- / 210.306	
Subtotal: SMMTT PH III MODS	39 / 127.324	3 / 18.775	6 / 8.028	4 / 13.373	- / -	4 / 13.373	3 / 10.411	3 / 10.725	3 / 10.830	3 / 10.840	- / -	64 / 210.306	
Subtotal: Procurement, All Modification Items	- / 127.324	- / 18.775	- / 8.028	- / 13.373	- / -	- / 13.373	- / 10.411	- / 10.725	- / 10.830	- / 10.840	- / 0.000	- / 210.306	
Installation													
Modification Item 1 of 1: SMMTT PH III MODS	- / 4.312	- / 0.739	- / 0.760	- / 0.775	- / 0.000	- / 0.775	- / 0.788	- / 0.838	- / 1.050	- / 0.985	- / 0.985	- / 11.232	
Subtotal: Installation	- / 4.312	- / 0.739	- / 0.760	- / 0.775	- / -	- / 0.775	- / 0.788	- / 0.838	- / 1.050	- / 0.985	- / 0.985	- / 11.232	
Total													
Total Cost (Procurement + Support + Installation)	131.636	19.514	8.788	14.148	0.000	14.148	11.199	11.563	11.880	11.825	0.985	221.538	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7										P-1 Line Item Number / Title: 5661 / Submarine Training Device Mods										Modification Number / Title: 1 / SMMTT PH III MODS											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: SMMTT PH III MODS																															
Manufacturer Information																															
Manufacturer Name: NSWC CD/NUWC NPT ⁽¹⁰⁾															Manufacturer Location: BETHESDA, MD/ NEWPORT, RI																
Administrative Leadtime <i>(in Months)</i> : 6															Production Leadtime <i>(in Months)</i> : 17																
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																	
Delivery Dates		May 2019				May 2020				May 2021				May 2022																	
Installation Information																															
Method of Implementation: AIT:: Installation Name: SMMTT PHIII 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								
		<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total 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		34 / 4.312		4 / 0.739		1 / 0.375		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		39 / 5.426							
FY 2018		- / -		- / -		1 / 0.385		2 / 0.387		0 / 0.000		2 / 0.387		- / -		- / -		- / -		- / -		0 / 0.000		3 / 0.772							
FY 2019		- / -		- / -		- / -		3 / 0.388		0 / 0.000		3 / 0.388		3 / 0.390		- / -		- / -		- / -		0 / 0.000		6 / 0.778							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		2 / 0.398		2 / 0.262		- / -		- / -		0 / 0.000		4 / 0.660							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		2 / 0.576		1 / 0.212		- / -		0 / 0.000		3 / 0.788							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		3 / 0.838		- / -		0 / 0.000		3 / 0.838							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		3 / 0.985		0 / 0.000		3 / 0.985							
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		3 / 0.985		3 / 0.985							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		34 / 4.312		4 / 0.739		2 / 0.760		5 / 0.775		0 / 0.000		5 / 0.775		5 / 0.788		4 / 0.838		4 / 1.050		3 / 0.985		3 / 0.985		64 / 11.232							
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	34	-	-	2	2	-	-	1	1	-	-	3	2	-	3	-	2	-	2	-	2	-	-	-	4	-	-	-	3	3	64
Out	34	-	-	-	4	-	-	-	2	-	-	-	5	-	3	-	2	-	2	-	2	-	-	-	4	-	-	-	3	3	64
Footnotes: ⁽⁹⁾ Unit costs increased in FY20 due to the added hardware and software modifications required to include the All World Environmental Simulator (AWESIM) capability and Power Conditioning Modules for all seven sites. FY19 procured only software kits which is the reason for the increase in procurement unit costs.																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7	P-1 Line Item Number / Title: 5661 / Submarine Training Device Mods	Modification Number / Title: 1 / SMMTT PH III MODS
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
⁽¹⁰⁾ NSWCD & NUWC NPT are collaborating warfare centers that manage and execute the SMMTT as directed by NAVSEA. Both warfare centers function as a prime for this effort. However, for cost efficiency purposes, they compete their cognizant tasks among multiple vendors with multiple orders to provide equipment/software in a timely manner to meet the fleet required training dates. As such, the SMMTT delivery is not linked to any single contract date.		

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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 04: Ordnance Support Equipment / BSA 7: Other Expendable Ordnance							P-1 Line Item Number / Title: 5664 / Surface Training 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>)	87.715	81.595	227.791	233.175	0.000	233.175	171.634	114.680	79.313	77.409	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	87.715	81.595	227.791	233.175	0.000	233.175	171.634	114.680	79.313	77.409	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	87.715	81.595	227.791	233.175	0.000	233.175	171.634	114.680	79.313	77.409	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>)	-	-	0.108	1.276	-	1.276	0.852	0.622	0.776	0.837	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 \$3.747 million to account for the availability of prior year execution balances.

This line provides funding to procure, modify, and upgrade training devices to keep them compatible with equivalent changes made to Fleet operational equipment. Funds ensure alignment between Surface Learning Centers and Fleet Concentration Area training systems and Fleet training requirements as dictated by the Surface and Expeditionary Warfare Training Plan.

[P40A / SURFACE TRAINING ADVANCED VIRTUAL ENVIRONMENT (STAVE) SEAFRAME SIMULATORS]: STAVE-LCS SEAFRAME SIMULATORS - Funds procure Littoral Combat Ship (LCS) tactical training simulators and equipment for the respective LCS homeports and the Surface Warfare Officer School (SWOS) in Newport, Rhode Island. Simulators meet the Train to Qualify/ Train to Certify (T2Q/T2C) Key Performance Parameter (KPP) requirement of the Capabilities Development Document. Funding procures hardware and software associated with building the trainers and the installation of this hardware and software at the LCS Training Facilities (LTF) in each homeport and at SWOS enabling the increased throughput for 32 ships / 56 crews / 3,920 Sailors supporting CNO approved BLUE GOLD Plus crewing strategy and directly supporting the revised training requirements of the Navy's Comprehensive Review. This procurement enables ship Commanding Officers to witness watch stander crew performance under high-stress conditions given realistic at sea scenarios in the synthetic environment. Trainers are required for each ship variant, located in the San Diego and Mayport homeports and at SWOS. Throughput of LCS crews requires more than one simulator of each variant in a homeport.

1.1) STAVE-LCS Virtual Reality Labs & Networks and Modernization - Funds comprehensive network infrastructure and computing environment and Virtual Reality Labs (VRLs), within the LCS Training Facilities (LTF) to support delivery and management of all components of LCS watch stander training. This modernization enables enhanced warfighter scenario training for the LCS crews in Combat Systems qualifications and ship systems troubleshooting, through the virtual network, without which, no systems within the LTF (currently being built in San Diego, and funded for Mayport) will interoperate or communicate with each other. Both LTFs are being built and designed around a central computer server farm (backbone) that houses all courseware, training scenarios, and student records. Without the network infrastructure, there is no way to distribute the required courseware and software around the LTF. Without the VRLs, there is no method of presenting previously developed Immersive Virtual Ship Environment (IVSE) courseware to students. Modernization efforts include regular/scheduled updates/upgrades to the STAVE Network and include procurement of new servers, relays, and switches, along with the procurement of replacement Virtual Reality Lab (electronic classroom) equipment supporting increased crew throughput.

1.2) STAVE-LCS Mission Bay Trainers & Modernization - Enable the qualification, training, and team certification of the individuals and teams deploying the LCS main battery - Mission Packages (MP). Live scenarios include prepping and launching/recovering of multi-ton mission module off-hull remote vehicles and operating of the internal cranes, doors, and other associated equipment in the Mission Bay. Modernizations provide updated MP deployment and recovery capability for enhanced warfighting readiness the individual full-scale replicas of the Mission Bay for both variants. Without the Mission Bay Trainer,

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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 04: Ordnance Support Equipment / BSA 7: Other Expendable Ordnance		P-1 Line Item Number / Title: 5664 / Surface Training 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		
there will be no realistic controlled scenario homeport training in the Mission Bay operations for the San Diego or Mayport-based crews and detachments during training pipeline, or off-hull, rapid refresh crew team training, and the primary warfare area (the Mission Bay) for the LCS ships will have no shore-based, controlled training capability in San Diego and Mayport, in this high-risk area of Mission Bay operations.		
1.3) STAVE-LCS Integrated Tactical Trainers & ITT Modernization - These are full scale simulators of the Tactical Software enabling, initial and proficiency, integrated team training of Bridge, Combat Systems, Engineering, and Mission Package systems/watch stations. The ITT delivers Detect to Engage sequencing of ships Combat Systems and developing watch stander Command and Control for our future Navy warfighters. The quantity and type (based on variant) of trainers in San Diego and Mayport is dependent on the Navy's Strategic Laydown of the Littoral Combat Ships. Follow on ITT procurements will include integrated crew served weapon simulators (discussed below). Modernization to the ITT's enable ships baseline upgrades and realistic combat scenarios compatible with individual crew Combat System baseline to prepare crews for in Battle Force training. Without the ITTs, there is no way for the LCS crews and detachments to train in-port, as the LCS ships do not have an onboard training system requirement. Ships would have to train underway utilizing real targets and other Fleet assets, such as drones, and commercial air services to accomplish required qualifications and certifications for all of their training. The LCS Concept of Operations does not support such at-sea intensive training requirements.		
1.5) STAVE-LCS Integrated Tactics Trainer Complete System - Procurement of the complete trainer to include Bridge Training System, Combats Training System and Engineering Training System.		
1.6) STAVE-LCS Bridge Trainers and Modernization - Devices that permit selected aspects of Bridge tasks (including Readiness Control Officer [RCO] tasks) to be practiced independently of Combat Systems Operations as found in more capable ITTs. This facilitates more efficient accomplishment of T2Q and T2C objectives. This trainer supports Officer training pipeline at SWOS, Newport in support of Division Officer, Department Head, and PXO/PCO training pipeline for Officer of the Deck Training and rapid refresh and skills enhancement in Mayport.		
1.7) STAVE-LCS Tactical Action Officer Trainers Modernization - Modernization efforts include upgrades to the trainers through procurement of new servers, relays and switches as well as new consoles, joysticks and communication equipment.		
1.8) STAVE-LCS Combat Systems Part Task Trainers (C2 PTT) (LCS 1 and LCS 2) . These devices permit training in selected aspects of Combat Systems Operations that are found in the more capable ITTs, to support individual skills development and practice, reduce the wear and tear on the ITTs, and allow the ITTs to more efficiently accommodate team training and certifications.		
[P40A / Combined IAMD/ASW Trainer (CIAT) to Sea]: Investment provides updates to update the Combined Integrated Air and Missile Defense (IAMD) and Anti-Submarine Warfare (ASW) Trainer (CIAT) to establish a foundation for bringing this capability to AEGIS and Anti-Submarine Warfare (ASW) Baselines for ship integration to provide live, virtual, constructive (LVC) training in a contested environment. Investment will enable 27 additional platforms to train to their ships capabilities in realistic environments against peer/near peer threats. This will provide high fidelity LVC capability at sea and enables needed training capability for Sailors to employ the weapon system against peer threats during AWT Phase II, and Enables AEGIS Training and Readiness Command, as part of a larger strategy, to meet training production for Fire Controlman and officers. Funds also include costs associated with tactical and other software licensing, Information Assurance, computer program procurements and patches to ensure alignment with DON CIO Cyber requirements and ship tactical modernization.		
[P40A / MB040 - Fleet Training Wholeness Strike Group CEC Training at Sea]: Investment modifies Cooperative Engagement Capability (CEC) to include Naval Integrated Fire Control-Counter Air (NIFC-CA) Increment II capabilities to meet Strike Group Training Requirements by providing an at sea training capability for ~130 Aegis/SSDS ships.		
[P40A / MB040 - Surface Advanced Virtual Environment (STAVE)]: Funding issued for the design, development, delivery and sustainment of nine distributed STAVE-CS hardware suites for maintainer training, procures 11 STAVE-CS virtual operator labs, supporting over 10,000 students over the FYDP. Aggressive Fleet expansion and modernization plans for both Aegis, SSDS and SQQ-89 along with service life extension of the Fleet requires advanced distributed (via NCTE) training solutions to support increased throughput on complex concepts and capability.		
[P40A / CVN 78 Class Training Equipment]: This provides for several initiatives oriented to developing the formal life cycle training solutions for multiple mission critical CVN 78 contractor furnished equipment (CFE) systems. Funds procure CVN 78 Class training simulators and equipment for the applicable Navy Education and Training Command Centers of Excellence to achieve Ready For Training (RFT). In particular, the CFE items procured include: training simulators, ship system mock-ups, electronic classrooms, intelligent tutoring systems, and all engineering and facilities upgrades necessary for installation at the training facilities. Simulators are needed to meet warfighter mission and safety readiness requirements of the Naval Aviation Carrier Training Manual. Funding procures hardware and software associated		

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Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 7: Other Expendable Ordnance		P-1 Line Item Number / Title: 5664 / Surface Training 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		
with building the trainers' hardware and software for future installation at the applicable Centers of Excellence in Norfolk, Great Lakes, and at SWOS Newport. Trainers are required for each major new CVN 78 specific system, with initial procurements for the Norfolk homeport and SWOS, followed by procurements for the Great Lakes training center and the homeport of San Diego. This funding represents initial training systems procurement for Advanced Weapons Elevator (AWE), Machinery Control and Monitoring System (MCMS), valve actuators, Solid State Voltage & Frequency Converter (SSVFC), Aqueous Film Forming Foam (AFFF) System, video network, Voice Telephone System (VTS), Zonal Electrical Distribution System (ZEDS), Oxygen (O2) Systems, Plasma Arc Waste Destruction System (PAWDS), Steering Gear Control System (SGCS). Additionally, this funding supports all associated site preparations and installation costs for the procured training systems. The Formal Life Cycle Training program provides training delivery for effective warfighter skills required for safe operations and maintenance of the ship. There is no schoolhouse established for any of these new CFE systems being introduced on the CVN 78.		
[P40A / Ship to Shore Connector Full Mission Trainers]: SHIP TO SHORE CONNECTOR (SSC) FULL MISSION TRAINERS (FMT) - Funds SSC FMT which is a programmable simulator and is a fundamental element of SSC operator training. New SSC FMTs are required because Landing Craft Air Cushion (LCAC) FMTs will not support SSC crew training based on significant Command Module system differences. Note: This item was previously housed in LI 0970 and was moved to LI 5664.		
[P5 / TS004 Surface Training Device Mods]: This line provides funds to procure, modify and upgrade trainers to include Aegis Weapon Systems, Aegis Ashore, Littoral Combat Ship (LCS), DDG 1000, shore based Integrated Navigation, Seamanship and Shiphandling Trainers (I-NSST), Ship Self Defense System (SSDS), AN/SQQ-89A(V)15 Anti-Submarine Warfare (ASW) Part Task Trainer (PTT), North Atlantic Treaty Organization SEASPARROW Surface Missile Systems (NSSMS), and other Surface Warfare related individual and team Training Programs to include Navigation, Hull, Mechanical and Electrical (HM&E), combat systems (CS), and Amphibious and Mine Warfare (AMW) Technical Training Equipment (TTE), Training Devices, Training Unique Equipment, Training systems, and the Surface Training Advanced Virtual Environment (STAVE). STAVE methodology provides students with an immersive and interactive learning environment as well as hands-on training equipment as part of a blended solution, which accelerates learning, improves student performance, and supports both Department of the Navy (DON) High Velocity Learning and Ready Relevant Learning intent. Funds ensure alignment between Surface Learning Centers and Fleet Concentration Area training systems and fleet training requirements as dictated by the Surface and Expeditionary Warfare Training Plan (SEWTP). Additionally, funds support establishment and improvement of ship on-board training curriculum for the purpose of maintaining perishable operator and maintenance skills.		
[P5 / Navigation Trainers]: NAVIGATION TRAINERS - Funds are provided for modifications/upgrades to shore based Navigation Trainers in support of the Surface Warfare Mariner Skills Training Program (MSTP).		
[P5 / AEGIS Ashore Trainer/C4I/Tech Refresh]: AEGIS ASHORE TRAINER/C4I/Tech Refresh - Funds modernization, delivery, installation and life-cycle maintenance support of the high fidelity Aegis Ashore Team Trainer in support of the land-based Aegis Ashore Training Continuum that is aligned to the training system for Navy Sailors who will man European Phased Adaptive Approach (EPAA) land-based Ballistic Missile Defense (BMD) facilities in Poland and Romania. The Aegis Ashore Team Trainer (AATT) at Dam Neck, VA is the single site for individual watch team tactical training, certification events, and sustainment training for Aegis Ashore rotational crews assigned to AA BMD Host Nation Sites. Funds also provide for the integration of C4I components, BMD Upgrades, and tech refresh.		
[P5 / Combined IAMD/ASW Trainer (CIAT)]: Combined Integrated Air and Missile Defense (IAMD)/Anti-submarine Warfare (ASW) Trainer (CIAT): From the Aegis Weapon System/SPY Radar Readiness Task Force, Fleet Integrated Air and Missile Defense and Anti-Submarine Warfare Improvement Programs, Naval Integrated Fire Control-Counter Air (NIFC-CA), and C5I training requirements documents, one of the areas identified for long term investment was to meet the requirement for a high fidelity IAMD and ASW training capability. Due to the cost and operations prohibitive realities associated with modifying onboard training systems, which currently meet only 60% of the DON requirement for ship training systems to be commensurate with tactical system capability, this shore-based, high fidelity trainer is being procured and installed to emulate most current AEGIS Baseline 9 configurations. The CIAT High Fidelity trainer includes all necessary tactical IAMD, ASW and Electronic Warfare (EW) systems, associated hardware and work stations, the simulation and stimulation software and network hardware, training brief/debrief capabilities and instructor operating control system. Due to the complexity and size of the system being procured, a spiral procurement and installation process will be utilized and executed in stages to maximize training capabilities that align with Fleet requirements. The CIAT will field in the Fleet Concentration Areas of San Diego and Norfolk in support of program of record Phase II, Advanced Warfare Training (AWT). Funds also include costs associated with tactical and other software licensing, Information Assurance, computer program procurements and patches to ensure alignment with DON CIO Cyber requirements and ship tactical modernization.		
[P5 / Navy Training System Plan (NTSP TTE/TD Mods)]: Funds procurement, installation, and upgrades for surface and expeditionary training systems in multiple Fleet Concentration Areas (FCA) in accordance with the results of DON directed and Fleet sponsored studies, NTSP updates, and Technical Training Audits from 2011 through 2017. One of the key items identified in the Fleet Review Panel of Surface Force Readiness, LPD 17 Class Wholeness Task Force, Navigation Wholeness Study, Surface Engineering Training Wholeness Review, Littoral Combat Ship (LCS) Front End Analysis (FEA), DDG 1000 wholeness review, and LHD 8/ LHA 6 MPT analyses done by the Surface Warfare Enterprise was the outdated, or lack of, training equipment in the schoolhouses. Based on this analysis, funding supports requirements		

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Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 04: Ordnance Support Equipment / BSA 7: Other Expendable Ordnance		P-1 Line Item Number / Title: 5664 / Surface Training 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		
identified in approximately 80 Navy Training System Plan updates and 162 Technical Training Course Audits. This investment will be for the procurement and installation of Training Equipment at Learning Centers to keep training courses in alignment with current configuration of equipment in the fleet. Investment ensures Surface Warfare Training Continuums are capable of meeting training requirements directly supporting readiness for systems/courses, including the following: 1. Magazine Sprinkler Systems Operations and Maintenance 2. Air Cooled Frequency Converter Maintenance 3. Controls and Governors Regulators 4. Advanced Welding 5. Habitability Auxiliaries (Mechanical) 6. Habitability Auxiliaries (Electrical) 7. Hydraulic Systems 8. Combat Systems (CS) A School 9. Galley Watch Captain 10. Laundry Systems Maintenance 11. Hydraulics Systems 12. Galley Supervisor [P5 / CSCS Modernization/Aegis Capability Build (ACB) Training Systems]: Funded the procurement and installation of AEGIS Advanced Capability Build (ACB) Technical Training Equipment (TTE) in response to the Aegis Weapon System/SPY Radar Readiness Task Force, Fleet Integrated Air and Missile Defense and Anti-Submarine Warfare Improvement Programs, Aegis Ashore, Naval Integrated Fire Control-Counter Air (NIFC-CA) and C5I training requirements document that there is training shortfall for procurement and installation of ACB Technical Training Equipment (TTE) Simulation/Stimulation at the Aegis Training and Readiness Center (ATRC) Learning Site. [P5 / Technical Training Equipment Modifications]: Funds schoolhouse modifications, upgrades, and technology refreshes of end items in support of fleet training requirements including Hull Mechanical and Electrical (HM&E), and combat systems technical training equipment (TTE) for the training activities. Provides equipment to augment existing TTE due to increased student throughput, replaces equipment beyond economical repair and procures new equipment. [P5 / LHA 6 and LHD 8 Life Cycle Training]: This line procured maintainer/operator training equipment and software applications for LHA-6/LHD-8 engineering systems in support of multiple courses of instruction at SWOS Learning Center Great Lakes, Norfolk, and San Diego as required by several Navy Training System Plans (NTSPs). [P5 / DDG & CG BMD 4.X/HM&E Modernization Training]: Cruiser and Destroyer modernization and new construction delivers new Ballistic Missile Defense (BMD) capabilities as well as new Hull Mechanical and Electrical (HM&E) systems. This line funds two BMD 4.0 training labs as well as HM&E training equipment for the schoolhouses to train approximately 3,000 students over the FYDP. Without this equipment, the Navy cannot train Sailors and Officers to operate and maintain the new BMD and HM&E systems. There is no Ready Relevant Learning (RRL) solution able to substitute for these training requirements. [P5 / NATO SEASPARROW Surface Missile System (NSSMS) Schoolhouse Trainer]: This line funds the procurement and installation of MK57 Mod 12/15 NATO Sea Sparrow Missile System (NSSMS) training and technical equipment in the schoolhouse. The MK57 Mod 12/15 NSSMS training and technical equipment will ensure that sailors are properly trained on how to operate and maintain the current MK57 Mod 12/15 NSSMS. [P5 / SURFACE MINOR MODS]: Funds modernization for training systems and sustainment for over 200 surface and expeditionary training systems in accordance with the results of DON directed and Fleet sponsored studies from 2009 through 2016. Specific studies of surface training systems include: Fleet Review Panel of Surface Force Readiness, Aegis Weapon System/SPY Radar Readiness Task Force, LPD 17 Class Wholeness Task Force, Navigation Wholeness Study, Surface Engineering Training Wholeness Review, Fleet Integrated Air and Missile Defense and Anti-Submarine Warfare Improvement Programs, Aegis Ashore, Naval Integrated Fire Control-Counter Air (NIFC-CA) and C5I training requirements documents, Littoral Combat Ship (LCS) Front End Analysis (FEA), DDG 1000 wholeness review, LHD 8/ LHA 6 Front End Analysis (FEA), Commander Naval Surface Forces (CNSF) manpower initiatives impact on readiness, and the Navy Inspector General (IG) report on Computer Based Training (CBT). The extensive		

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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 04: Ordnance Support Equipment / BSA 7: Other Expendable Ordnance		P-1 Line Item Number / Title: 5664 / Surface Training 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		
inventory of training systems to support 16 classes of ships requires continual modernization and modification to ensure alignment with fleet systems while addressing technology obsolescence issues. Funding is budgeted to modernize systems including the following: 1. Damage Control Wet Trainers Upgrades/Refresh 2. DDG 51 Machinery Control System Maintenance Trainer 3. Electrical Maintenance Training 4. Air Conditioning and Refrigeration (AC&R) Maintenance Training 5. Deck System Equipment Training 6. Marine Sanitation Devices 7. Landing Craft Air Cushion (LCAC)/SSC Team Trainer Overhaul/Upgrades 8. Firefighting Team Trainers Upgrades/Refresh 9. Advanced Electronic Attack (EA) 10. Anti-Submarine Warfare (ASW) Tactical Trainers 11. Elevator Systems 12. Steam Maintenance Training 13. DDG 1000 Training Systems 14. Expeditionary Mobile Base (ESB) Training Systems 15. Landing Craft Utility (LCU) 1600/1700 Training Systems 16. Air Defense Strike Group Facility (ADSGF)/Virtual Aegis Combat System Simulator (Fallon, NV) 17. LCS Training Systems [P5 / FFT/SLEP/MODULAR TRAINER]: Firefighter Trainer (FFT)/Service Life Extension Program (SLEP)/MODULAR TRAINER-Funds are provided for the SLEP FFT. Trainers are located in Newport, Norfolk, Mayport, San Diego, Pearl Harbor, and Great Lakes, and are vital to ensuring the fleet's ability to utilize and employ shipboard systems. [P5 / FCA TRAINERS]: Fleet Concentration Areas (FCA) TRAINERS - Funds are provided for upgrades to shore based trainers (Combat System, HM&E) in Fleet Concentration Areas. [P3A / MB040 - BFTT SHIP SETS]: Battle Force Tactical Training (BFTT) T46D Ship set configurations vary depending on AEGIS or Ship Self Defense System (SSDS) installation. T46D's for SSDS include additional materials and units to be integrated for stimulation of the ships sensors. [P3A - 2 / MB040 BFTT UPGRADE KITS]: Upgrade Kits and interface upgrades implement Fleet prioritized warfighting training improvements to the Total Ship Training Capability (TSTC)/Battle Force Tactical Training (BFTT) systems in order to meet evolving combat system capabilities. Training system improvements are a critical factor in achieving warfighter competencies and mission readiness. Unit costs are variable.		

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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 04: Ordnance Support Equipment / BSA 7: Other Expendable Ordnance						P-1 Line Item Number / Title: 5664 / Surface Training 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	Other Ships Training Equipment	P-5a, P-21			- / 31.942	- / 24.826	- / 98.366	- / 112.805	- / -	- / 112.805
P-5	1 / TS004 Surface Training Device Mods [TS004]				- / 41.059	- / 33.047	- / 103.002	- / 90.875	- / 0.000	- / 90.875
P-3a	1 / MB040 - BFTT SHIP SETS (TBD)				- / 8.094	- / 11.545	- / 17.535	- / 22.585	- / 0.000	- / 22.585
P-3a	2 / MB040 BFTT UPGRADE KITS (TBD)				- / 6.620	- / 12.177	- / 8.888	- / 6.910	- / 0.000	- / 6.910
P-40	Total Gross/Weapon System Cost				- / 87.715	- / 81.595	- / 227.791	- / 233.175	- / 0.000	- / 233.175

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	Other Ships Training Equipment	P-5a, P-21			- / -	- / -	- / -	- / -	- / -	- / -
P-5	1 / TS004 Surface Training Device Mods [TS004]				- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / MB040 - BFTT SHIP SETS (TBD)				- / 20.070	- / 16.565	- / 15.050	- / 15.050	Continuing	Continuing
P-3a	2 / MB040 BFTT UPGRADE KITS (TBD)				- / 8.955	- / 12.584	- / 14.688	- / 15.284	- / 0.000	- / 86.106
P-40	Total Gross/Weapon System Cost				- / 171.634	- / 114.680	- / 79.313	- / 77.409	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 funding provides the Fleet with the required training equipment for the respective LCS homeports and the Surface Warfare Officer School (SWOS). Training equipment is required to satisfy the Train to Qualify Key Performance Parameter (KPP) requirement of the Capabilities Development Document. Required procurements of hardware and software associated with building the trainers and installing this hardware and software at the LCS Training Facilities in each homeport and at SWOS. Trainers are required for both of the ship variants. Increased FY 2020 funding for LCS Seaframe Simulators supports the training portion of the procurement of additional LCS Bridge Part Task Trainers, curriculum development and training devices to meet increased training requirements (~2,390 students) due to the change to Blue Gold crewing and additional ships and crews delivering in the FYDP. This increase supports both the Personnel and Training Pillars. The Bridge Part Task Trainers (BPTTs) provide valuable training to the sailors. Procurement and Modernization of these trainers is required to meet the current/updated configuration of LCS. Without the procurements/modernization of these trainers, in accordance with SWOS analysis, sailors will be forced to use outdated equipment/technology. Without the training, sailors will be unable to safely operate the equipment onboard ships, to include Mission Module equipment thus potentially putting the safety of those sailors, and the mission of the ship, at significant risk.

The FY20 increase in funding growth for BFTT supports the delivery and sustainment of distributed STAVE-CS hardware suites for maintaining training for over 10,000 students and Cooperative Engagement Capability (CEC) hardware for Naval Integrated Fire Control-Counter Air (NIFC-CA) capabilities to meet Strike Group Training Requirements, and delivery capability to enable at sea training.

The FY20 congressional reduction in FY19 for BFTT Ship Sets in the amount of \$2.63 million.

The phasing of this requirement is based on achieving Ready for Training (RFT) dates for various shipboard systems based on system complexity and procurement lead times, which is aligned to the CVN78 deployment ready status and the INITIAL training requirements of the CVN79 Crew.

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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 04: Ordnance Support Equipment / BSA 7: Other Expendable Ordnance		P-1 Line Item Number / Title: 5664 / Surface Training 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		
The FY20 funding for Surface Training Device Modifications provides funding to procure, modify, and upgrade training devices to keep them compatible with equivalent changes made to Fleet operational equipment. Funds ensure alignment between Surface Learning Centers and Fleet Concentration Area training systems and Fleet training requirements as dictated by the Surface and Expeditionary Warfare Training Plan. Increased funding is required in FY20 for the following efforts, in order to support Fleet readiness and ensure that sailors are properly trained to operate and maintain mission critical systems and effectively execute their missions: 1) Navigation Training Support, per the DON directed Comprehensive Review, for the modernization of all Surface Navigation, Seamanship, and Ship-handling Trainers (NSST) in all CONUS and OCONUS Fleet Concentration Areas as well as various schoolhouse locations, in support of the Comprehensive Review - Implementation of Surface Warfare Recommendations; and 2) Navy Training System Plan (NTSP) updates to formal courses of instruction, required to reflect current Fleet configurations. NAVIGATION TRAINING SUPPORT - FY20 funding increases address navigation shortfalls identified during CNO-directed Comprehensive Review following the USS John S. McCain and USS Fitzgerald collisions and provide for modifications/upgrades to Navigation Shore Based Trainers, to support the modernization of all Surface Navigation, Seamanship, and Ship-handling Trainers (NSST) in all CONUS and OCONUS Fleet Concentration Areas as well as various schoolhouse locations. Modernization is critical to maintaining trainer service life and avoiding increased costs to maintain aging equipment. Per the DON directed Comprehensive Review - Implementation of Surface Warfare Recommendations, the increase in FY20 funding is in response to directives to provide an integrated NSST and Combat Information Center (CIC) training capability, and will support the creation of system specific simulations, high fidelity bridge team trainers at nine locations, radar navigation team trainers at nine locations, additional classrooms (four) with a capacity of 30 students in each classroom and updates to Inertial Navigation system/subsystem curriculum w/simulation commencing in FY20. NAVY TRAINING SYSTEM PLAN (NTSP Technical Training Equipment (TTE)/Training Device (TD) Mods) - FY20 funding is required to support formal courses of instruction that will require NTSP updates in order to reflect current Fleet configurations. Failure to update these courses will decrease Sailors' ability to operate and maintain these critical systems, hindering ships from effectively executing missions and negatively impacting Fleet readiness. Funds are provided for the procurement and installation of training equipment and associated logistic support package as outlined in the NTSPs. DDG 1000 WHOLENESS/SURFACE STRIKE - FY19 funding will procure shipboard connectivity suites (SCS) for installation aboard the DDG 1000 ships. The SCS units are required to establish network communications between the DDG 1000 embedded training system and the Navy Continuous Training Environment (NCTE) in support of pier-side Fleet Synthetic Training (FST) events. FST events are conducted by the fleet to certify crew, ship and strike groups prior to deployment. SHIP TO SHORE CONNECTOR (SSC) FULL MISSION TRAINERS (FMT) - Funds SSC FMT which is a programmable simulator and is a fundamental element of SSC operator training. New SSC FMTs are required because LCAC FMTs will not support SSC crew training based on significant Command Module/C4N System differences. Note: This item was previously housed in LI 0970 and was moved to LI 5664.		

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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 / 04 / 7								P-1 Line Item Number / Title: 5664 / Surface Training Equipment							Aggregated Items Title: Other Ships Training 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 (\$)	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) SURFACE TRAINING ADVANCED VIRTUAL ENVIRONMENT (STAVE) SEAFRAME SIMULATORS																				
1.1) STAVE-LCS Virtual Reality Labs, Networks & Modernization	A		-	-	-	-	-	4.864	-	-	1.950	-	-	14.194	-	-	-	-	-	14.194
1.2) STAVE-LCS Mission Bay Trainers & Modernization	A		-	-	-	-	-	-	-	-	-	-	-	6.397	-	-	-	-	-	6.397
1.3) STAVE-LCS Integrated Tactics Trainer (ITT) Modernization	A		-	-	-	-	-	7.952	-	-	-	-	-	6.133	-	-	-	-	-	6.133
1.4) STAVE-LCS Integrated Tactics Trainers / Combats & Engineering Systems	A		-	-	22.155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.5) STAVE-LCS Integrated Tactics Trainer ITT (Complete System) ⁽¹⁾	A		-	-	-	-	-	-	30,028K	2	60.057	-	-	-	-	-	-	-	-	-
1.6) STAVE-LCS Bridge Trainers & Modernization	A		-	-	-	-	-	-	-	-	8.655	-	-	7.898	-	-	-	-	-	7.898
1.7) STAVE-LCS Tactical Action Officer Trainers & Modernization	A		-	-	-	-	-	-	-	-	-	-	-	4.000	-	-	-	-	-	4.000
1.8) STAVE-LCS Combat Systems Part Task Trainers (C2PTT)	A		-	-	-	-	-	-	-	-	-	-	-	5.300	-	-	-	-	-	5.300
Subtotal: 1) SURFACE TRAINING ADVANCED VIRTUAL ENVIRONMENT (STAVE) SEAFRAME SIMULATORS			-	-	22.155	-	-	12.816	-	-	70.662	-	-	43.922	-	-	-	-	-	43.922
2) MB040 - BFTT SHIP SETS																				
2.1) Combined IAMD/ ASW Trainer (CIAT) to Sea ⁽²⁾	A		-	-	-	-	-	-	-	-	-	-	-	39.600	-	-	-	-	-	39.600
2.3) MB040 - Surface Advanced Virtual Environment (STAVE) ⁽³⁾	A		-	-	-	-	-	-	-	-	-	-	-	27.870	-	-	-	-	-	27.870
2.4) MB040 - BFTT SHIP SETS	A		481,545.45	11	5.297	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 2) MB040 - BFTT SHIP SETS			-	-	5.297	-	-	-	-	-	-	-	-	67.470	-	-	-	-	-	67.470

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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 / 04 / 7								P-1 Line Item Number / Title: 5664 / Surface Training Equipment							Aggregated Items Title: Other Ships Training 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 (\$)	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)
3) CVN 78 Class Training Equipment																				
3.1) CVN 78 Class Training Equipment ⁽⁴⁾		A	-	-	4.490	-	-	12.010	-	-	7.942	-	-	1.412	-	-	-	-	-	1.412
Subtotal: 3) CVN 78 Class Training Equipment			-	-	4.490	-	-	12.010	-	-	7.942	-	-	1.412	-	-	-	-	-	1.412
4) Ship to Shore Connector Full Mission Trainers																				
4.1) SSC Full Mission Trainers ⁽⁵⁾		A	-	-	-	-	-	-	-	-	19.762	-	-	0.001	-	-	-	-	-	0.001
Subtotal: 4) Ship to Shore Connector Full Mission Trainers			-	-	0.000	-	-	-	-	-	19.762	-	-	0.001	-	-	-	-	-	0.001
Total			-	-	31.942	-	-	24.826	-	-	98.366	-	-	112.805	-	-	-	-	-	112.805
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 FY 2020 funding for LCS Seaframe Simulators supports the training portion of the procurement of additional LCS Bridge Part Task Trainers, curriculum development and training devices to meet increased training requirements (~2,390 students) due to the change to Blue Gold crewing and additional ships and crews delivering in the FYDP. This increase supports both the Personnel and Training Pillars.																				
⁽²⁾ Increased FY20 funding of \$39.600 to update the Combined Integrated Air and Missile Defense (IAMD) and Anti-Submarine Warfare (ASW) Trainer (CIAT) to establish a foundation for bringing this capability to AEGIS and Anti-Submarine Warfare (ASW) Baselines for ship integration to provide live, virtual, constructive (LVC) training in a contested environment. Investment will enable 27 additional platforms to train to their ships capabilities in realistic environments against peer/ near peer threats. This investment provides high fidelity LVC capability at sea and enables needed training capability for Sailors to employ the weapon system against peer threats during AWT Phase II, and Enables AEGIS Training and Readiness Command, as part of a larger strategy, to meet training production for Fire Control man and officers.																				
⁽³⁾ Increased FY 2020 funding in the amount of \$27.870M for Surface Training Advanced Virtual Environment (STAVE) infrastructure for the procurement of maintenance and operator training equipment, materials, and visuals for operation. This requirement will provide increased student throughput, and gain efficiencies by enabling courses to be centrally conducted and distributed to remote classrooms located in fleet concentration areas.																				
⁽⁴⁾ Decrease in CVN 78 FY20 funding supports the timeline to achieve RFT dates for various shipboard systems based on system complexity and procurement lead times, which is aligned to the CVN 78 deployment ready status and the initial training requirements of the CVN 79 crew.																				
⁽⁵⁾ FY19 is the first year of funding for this effort.																				

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Exhibit P-5a, Procurement History and Planning: PB 2020 Navy									Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7				P-1 Line Item Number / Title: 5664 / Surface Training Equipment					Aggregated Items: Other Ships Training Equipment ⁽¹⁾			
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 <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
1) SURFACE TRAINING ADVANCED VIRTUAL ENVIRONMENT (STAVE) SEAFRAME SIMULATORS												
1.5) STAVE-LCS Integrated Tactics Trainer ITT (Complete System) ^(†)		2019	Lockheed Martin / Moorestown, NJ	C / FFP	NAWC TSD	Jun 2019	Jun 2021	2	30,028K	Y		Oct 2018

^(†) 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 / 04 / 7										P-1 Line Item Number / Title: 5664 / Surface Training Equipment										Aggregated Items: Other Ships Training Equipment ⁽¹⁾											
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														
							OC	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OC	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG		SEP
							T	V	C	N	B	R	R	Y	N	L	G	P	T	V	C	N	B	R	R	Y	N	L	G		P
1) SURFACE TRAINING ADVANCED VIRTUAL ENVIRONMENT (STAVE) SEAFRAME SIMULATORS																															
1.5) STAVE-LCS Integrated Tactics Trainer ITT (Complete System)																															
	13	2019	NAVY	2	0	2									A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
							OC	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OC	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 / 04 / 7										P-1 Line Item Number / Title: 5664 / Surface Training Equipment										Aggregated Items: Other Ships Training Equipment ⁽¹⁾												
Items <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	
1) SURFACE TRAINING ADVANCED VIRTUAL ENVIRONMENT (STAVE) SEAFRAME SIMULATORS																																
1.5) STAVE-LCS Integrated Tactics Trainer ITT (Complete System)																																
13	2019	NAVY		2	0	2	-	-	-	-	-	-	-	-	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 / 04 / 7					P-1 Line Item Number / Title: 5664 / Surface Training Equipment				Aggregated Items: Other Ships Training Equipment ⁽¹⁾			
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	Lockheed Martin - Moorestown, NJ			TBD	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).												

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Exhibit P-5, Cost Analysis: PB 2020 Navy												Date: March 2019						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7						P-1 Line Item Number / Title: 5664 / Surface Training Equipment						Item Number / Title [DODIC]: 1 / TS004 Surface Training Device Mods [TS004]						
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>				41.059		33.047		103.002		90.875		0.000		90.875				
Less PY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-		-		
Net Procurement (P-1) <i>(\$ in Millions)</i>				41.059		33.047		103.002		90.875		0.000		90.875				
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-		-		
Total Obligation Authority <i>(\$ in Millions)</i>				41.059		33.047		103.002		90.875		0.000		90.875				
(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)
Flyaway Cost																		
Recurring Cost																		
1.1.1) Navigation Trainers ⁽⁶⁾	-	-	1.700	-	-	8.671	-	-	19.854	-	-	52.900	-	-	0.000	-	-	52.900
1.1.2) AEGIS Ashore Trainer/C4I/Tech Refresh ⁽⁷⁾	-	-	10.900	-	-	3.200	-	-	7.600	-	-	0.600	-	-	0.000	-	-	0.600
1.1.3) Combined IAMD/ASW Trainer (CIAT) ⁽⁸⁾	-	-	12.660	-	-	15.300	-	-	12.300	-	-	11.300	-	-	0.000	-	-	11.300
1.1.4) Navy Training System Plan (NTSP TTE/TD Mods) ⁽⁹⁾	-	-	6.543	-	-	2.100	-	-	9.100	-	-	11.900	-	-	0.000	-	-	11.900
1.1.5) CSCS Modernization/Aegis Capability Build (ACB) Training Systems ⁽¹⁰⁾	-	-	1.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.6) Technical Training Equipment Modifications ⁽¹¹⁾	-	-	0.730	-	-	0.741	-	-	0.755	-	-	0.770	-	-	0.000	-	-	0.770
1.1.7) LHA 6 and LHD 8 Life Cycle Training ⁽¹²⁾	-	-	3.600	-	-	0.000	-	-	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 / 04 / 7					P-1 Line Item Number / Title: 5664 / Surface Training Equipment					Item Number / Title [DODIC]: 1 / TS004 Surface Training Device Mods [TS004]							

ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:							
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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)
1.1.8) DDG & CG BMD 4.X/HM&E Modernization Training ⁽¹³⁾	-	-	0.000	-	-	0.000	-	-	28.100	-	-	8.900	-	-	0.000	-	-	8.900
1.1.9) NATO SEASPARROW Surface Missile System (NSSMS) Schoolhouse Trainer ⁽¹⁴⁾	-	-	0.000	-	-	0.000	-	-	10.200	-	-	0.000	-	-	0.000	-	-	0.000
<i>Subtotal: Recurring Cost</i>	-	-	37.133	-	-	30.012	-	-	87.909	-	-	86.370	-	-	0.000	-	-	86.370
<i>Subtotal: Flyaway Cost</i>	-	-	37.133	-	-	30.012	-	-	87.909	-	-	86.370	-	-	0.000	-	-	86.370
Hardware - Trainers Cost Cost																		
Recurring Cost																		
2.1.1) SURFACE MINOR MODS ⁽¹⁵⁾	-	-	1.626	-	-	1.535	-	-	13.286	-	-	2.905	-	-	0.000	-	-	2.905
2.1.2) FFT/SLEP/ MODULAR TRAINER ⁽¹⁶⁾	-	-	1.900	-	-	1.400	-	-	1.707	-	-	1.100	-	-	0.000	-	-	1.100
2.1.3) FCA TRAINERS ⁽¹⁷⁾	-	-	0.400	-	-	0.100	-	-	0.100	-	-	0.500	-	-	0.000	-	-	0.500
<i>Subtotal: Recurring Cost</i>	-	-	3.926	-	-	3.035	-	-	15.093	-	-	4.505	-	-	0.000	-	-	4.505
<i>Subtotal: Hardware - Trainers Cost Cost</i>	-	-	3.926	-	-	3.035	-	-	15.093	-	-	4.505	-	-	0.000	-	-	4.505
Gross/Weapon System Cost	-	-	41.059	-	-	33.047	-	-	103.002	-	-	90.875	-	-	0.000	-	-	90.875

Footnotes:

⁽⁶⁾ NAVIGATION TRAINING SUPPORT - FY20 funding increases address navigation shortfalls identified during CNO-directed Comprehensive Review following the USS John S. McCain and USS Fitzgerald collisions and provide for modifications/upgrades to shore based Navigation Trainers to support the modernization of all Surface Navigation, Seamanship, and Ship-handling Trainers (NSST) in all CONUS and OCONUS Fleet Concentration Areas as well as various schoolhouse locations, in support of the Surface Warfare Mariner Skills Training Program (MSTP). Modernization is critical to maintaining trainer service life and avoiding increased costs to maintain aging equipment. Per the DON directed Comprehensive Review (CR), the increase in FY19 funding is in response to directives to provide an integrated NSST and Combat Information Center (CIC) training capability and will result in additional training system modifications/upgrades commencing in FY19. The increase in FY20 funding is also in response to CR directives to provide an integrated NSST and CIC training capability, and will support the creation of system specific simulations, high fidelity bridge team trainers at nine locations, radar navigation team trainers at nine locations, additional classrooms (four) with a capacity of 30 students in each classroom and updates to Inertial Navigation system/subsystem curriculum with simulation commencing in FY20.

⁽⁷⁾ AEGIS ASHORE TRAINER/C4I/Tech Refresh - Funds modernization, delivery, installation and life-cycle upgrades for a high fidelity Aegis Ashore Team Trainer in support of the land-based Aegis Ashore Training Continuum. Funds also provide for the integration of a C4I component, BMD Upgrades, and tech refresh. Also funds the training facility to train Navy Sailors who will man EPAA land-based BMD facilities in Poland and Romania. The Aegis Ashore Team Trainer (AATT) at Dam Neck, VA will serve as the single site for individual watch team tactical training, certification events and sustainment training for

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Exhibit P-5, Cost Analysis: PB 2020 Navy		Date: March 2019
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7	P-1 Line Item Number / Title: 5664 / Surface Training Equipment	Item Number / Title [DODIC]: 1 / TS004 Surface Training Device Mods [TS004]
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
Aegis Ashore rotational crews assigned to AA BMD Host Nation Sites. Funding also supports the procurement and installation of an In-Plant Support System (IPSS) for the AATT. The AATT in Dam Neck is the only means of training and certifying crews prior to arriving at their host nation site. As an alternative to funding a second AATT, this IPSS will allow for information assurance (IA) and some maintenance to be conducted separate from the AATT, freeing time to train at the Dam Neck facility and supporting Poland coming online. ⁽⁸⁾ COMBINED IAMD/ASW TRAINER (CIAT) - Funds are required across the FYDP for tactical and other software licensing (all baselines), Information Assurance and routine software and hardware modifications of two CIAT systems (San Diego, Norfolk) and ensures alignment with DON Chief Information Officer (CIO) Cyber requirements and tactical ship modernization. Funds are provided to procure and install hardware for a Shore Based IAMD and ASW Trainer. Additionally, procuring and maintaining high fidelity training devices at Fleet Concentration Areas and Navy schoolhouses for operators is less costly than the traditional procuring of lower fidelity ship embedded training systems. ⁽⁹⁾ NAVY TRAINING SYSTEM PLAN (NTSP Technical Training Equipment (TTE)/Training Device (TD) Mods) - FY20 funding increases are required to support formal courses of instruction that will require NTSP updates during the fiscal year. Failure to update these courses will decrease Sailors' ability to operate and maintain these critical systems, hindering ships from effectively executing missions and negatively impacting Fleet readiness. Funds are provided for the procurement and installation of training equipment and associated logistic support package as outlined in the NTSPs. The increase in FY19 funding is in response to the number of formal courses of instruction that will require NTSP updates in order to reflect current Fleet configurations. Six courses are being revised in FY19, compared to three courses being revised in FY18. Additionally, the FY19 course updates have a broader scope and require additional resources. ⁽¹⁰⁾ Center for Surface Combat Systems (CSCS) Modernization/Aegis Capability Build (ACB) Training Systems - Funds were provided for upgrades to current CSCS and ATRC training systems to eliminate reliance on outdated and maintenance-intensive technical training equipment. Procured and installed equipment which will allow for training on Aegis ACB 16 and install simulation/stimulation to be used in training systems for ATRC and CSCS Aegis curriculum. ⁽¹¹⁾ Technical Training Equipment Modifications - Funds procure Hull Mechanical and Electrical (HM&E), and Combat Systems (CS) technical training equipment (TTE) for the training activities. Provides equipment to augment existing TTE due to increased student throughput, replaces equipment beyond economical repair and procures new equipment. ⁽¹²⁾ LHA 6 and LHD 8 Life Cycle Training - This line procured maintainer/operator training equipment and software applications for LHA-6/LHD-8 engineering systems in support of multiple courses of instruction at SWOS Learning Center Great Lakes, Norfolk, and San Diego, as required by several Navy Training System Plans (NTSPs). ⁽¹³⁾ DDG & CG BMD 4.X/HM&E Modernization Training - Funding supports two Ballistic Missile Defense (BMD) 4.0 training labs as well as Hull Mechanical and Electrical (HM&E) training equipment for the schoolhouses in support of new BMD capabilities as well as new HM&E systems resulting from Cruiser/Destroyer modernization and new construction deliveries. Without this equipment, there is no way for the Navy to train Sailors and Officers to operate and maintain the new BMD and HM&E systems. ⁽¹⁴⁾ NATO SEASPARROW Surface Missile System (NSSMS) Schoolhouse Trainer - Funding supports the procurement and installation of MK57 Mod 12/15 NATO Sea Sparrow Missile System (NSSMS) training and technical equipment in the schoolhouse. The MK57 Mod 12/15 is already installed on 23 ships. The current NSSMS schoolhouse trainer is the antiquated MK2 which is no longer common with the Fleet system, resulting in schoolhouse training for approximately 400 Sailors achieving just 10% of course objectives relative to the MK57 Mod 12/15. Without the MK57 Mod 12/15 NSSMS training and technical equipment there is no way to ensure that sailors are properly trained on how to operate and maintain the current MK57 Mod 12/15 NSSMS. Note: There is no Ready Relevant Learning (RRL) solution able to substitute for this training requirement. ⁽¹⁵⁾ SURFACE MINOR MODS - Modifications are required to meet safety standards, keep training systems compatible with equivalent changes made to fleet operational equipment, and to enhance training capabilities. These modifications support the 200+ fielded Surface training systems and support fleet training requirements as dictated by the Surface and Expeditionary Warfare Training Plan (SEWTP). Funding supports Fleet Training Wholeness requirements in support of a DON-directed deep dive to develop alternatives to improve the Navy's competitive advantage via high-end training, including the Air Defense Strike Group Facility (ADSGF)/Integrated Training Facility (ITF) surface capability in Fallon, NV. Without this ADSGF/ITF surface capability, there is no way to train Carrier Strike Groups on high-end threats and capabilities related to Naval Integrated Fire Control-Counter Air (NIFC-CA). Funding also supports Anti-Submarine Warfare (ASW) Tactical Trainers, enabling advanced ASW training for Officers and Sailors. Funding also supports DDG 1000 Wholeness/Surface Strike Implementation to fund the execution of Navy Training System Plan requirements for the acquisition of life cycle training solutions to include operator and maintenance training on associated DDG 1000 unique Hull, Mechanical and Electrical Systems and Combat Control Systems. ⁽¹⁶⁾ FFT/SLEP/MODULAR TRAINER - Funds are provided for the Service Life Extension Program (SLEP) Firefighter Trainer (FFT). FY20 funding is required as Firefighter Trainers are reaching the end of their life expectancy and more extensive SLEP tasks are needed to extend the life expectancy of the trainers to support the fleet. ⁽¹⁷⁾ FCA TRAINERS - Funds are provided for upgrades to shore based trainers (Combat System, HM&E) in Fleet Concentration Areas, to include Multi-Mission Team Trainer upgrades. The increase in FY20 funding is in response to the number of upgrades that will be procured and installed during this fiscal year.		

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7				P-1 Line Item Number / Title: 5664 / Surface Training Equipment						Modification Number / Title: 1 / MB040 - BFTT SHIP SETS		
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>)	8.094	11.545	17.535	22.585	0.000	22.585	20.070	16.565	15.050	15.050	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	8.094	11.545	17.535	22.585	0.000	22.585	20.070	16.565	15.050	15.050	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	8.094	11.545	17.535	22.585	0.000	22.585	20.070	16.565	15.050	15.050	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 Battle Force Tactical Training (BFTT)/Advanced Training Domain (ATD)/Total Ship Training Capability (TSTC) family of systems provides realistic joint warfare training across the spectrum of armed conflict; realistic unit level team training in all warfare areas; a means to link ships together which are in different homeports for coordinated training; external stimulation of shipboard training systems; and simulation of non-shipboard forces. TSTC/ATD/BFTT uses a distributed architecture, integrating existing training systems, and uses Distributed Interactive Simulation (DIS) and High Level Architecture (HLA) protocols. TSTC/ATD/BFTT provides ships' Commanding Officers and Strike Group/Battle Force (SG/BF) Commanders with the ability to conduct coordinated realistic, high stress, combat system level team training as an integral part of the Afloat Training Groups (ATGs), the Tactical Training Groups and C2F/C3F Fleet Synthetic Training (FSTs)/Live Virtual Constructive (LVC) exercises. The Total Ship Training Capability (TSTC) integrates existing and emergent onboard training and assessment system capabilities to simulate realistic, "train like you fight", combat-like conditions across weapon sensor and combat systems. Migration to TSTC improvements is required to ensure continued, persistent FST/LVC interoperability to deliver training that is commensurate with tactical capabilities. Commercial off the Shelf (COTS) Obsolescence mitigates replacement and upgrade of obsolete and out-of-production COTS components in BFTT systems installed throughout the Fleet to include the AN/USQ-T46D upgrade. BFTT T46D and ATD/T52 are core components of the TSTC. BFTT T46D Ship set configurations vary depending on AEGIS or Ship Self Defense System (SSDS) installation. T46D's for SSDS include additional materials and units to be integrated for stimulation of the ships sensors. FY20 - TSTC/ATD/BFTT Ship Set funding will procure (5) T46D's and (9) T52's and subsequent variants of hardware and software for Build 5.x series in support of AN/SQQ-89 upgrades, AN/SLQ-32(V)6 upgrades, AN/USG-2B upgrades, and ATD software builds in support of AEGIS Baseline 9 TI-16 upgrades and SSDS upgrades -- which drives the difference in unit cost. Installation funding supports installation of (17) BFTT AN/USQ-T46D Systems. Additional costs will be incurred to procure more materials needed to meet integrated CEC training requirements, cyber security requirements and to maintain connectivity with Navy Continuous Training Environment (NCTE) to meet shipboard integrated training demands.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7					P-1 Line Item Number / Title: 5664 / Surface Training Equipment					Modification Number / Title: 1 / MB040 - BFTT SHIP SETS			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: BFTT SHIP SETS - T46D'S				Modification Type: TBD					Related RDT&E PEs: 0204571N				
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> MB040 - BFTT SHIP SETS													
B Kits													
Recurring													
1.1.1) BFTT SHIP SETS - NonOrganic ⁽¹⁸⁾	9 / 8.094	7 / 7.000	14 / 14.000	14 / 14.000	- / -	14 / 14.000	13 / 13.000	10 / 10.000	10 / 10.000	10 / 10.000	Continuing	Continuing	
<i>Subtotal: Recurring</i>	<i>- / 8.094</i>	<i>- / 7.000</i>	<i>- / 14.000</i>	<i>- / 14.000</i>	<i>- / -</i>	<i>- / 14.000</i>	<i>- / 13.000</i>	<i>- / 10.000</i>	<i>- / 10.000</i>	<i>- / 10.000</i>	<i>Continuing</i>	<i>Continuing</i>	
<i>Subtotal: MB040 - BFTT SHIP SETS</i>	<i>9 / 8.094</i>	<i>7 / 7.000</i>	<i>14 / 14.000</i>	<i>14 / 14.000</i>	<i>- / -</i>	<i>14 / 14.000</i>	<i>13 / 13.000</i>	<i>10 / 10.000</i>	<i>10 / 10.000</i>	<i>10 / 10.000</i>	<i>Continuing</i>	<i>Continuing</i>	
<i>Subtotal: Procurement, All Modification Items</i>	<i>- / 8.094</i>	<i>- / 7.000</i>	<i>- / 14.000</i>	<i>- / 14.000</i>	<i>- / -</i>	<i>- / 14.000</i>	<i>- / 13.000</i>	<i>- / 10.000</i>	<i>- / 10.000</i>	<i>- / 10.000</i>	<i>Continuing</i>	<i>Continuing</i>	
Installation													
<i>Modification Item 1 of 1:</i> MB040 - BFTT SHIP SETS	<i>- / 0.000</i>	<i>- / 4.545</i>	<i>- / 3.535</i>	<i>- / 8.585</i>	<i>- / 0.000</i>	<i>- / 8.585</i>	<i>- / 7.070</i>	<i>- / 6.565</i>	<i>- / 5.050</i>	<i>- / 5.050</i>	<i>- / 5.050</i>	<i>- / 45.450</i>	
<i>Subtotal: Installation</i>	<i>- / 0.000</i>	<i>- / 4.545</i>	<i>- / 3.535</i>	<i>- / 8.585</i>	<i>- / -</i>	<i>- / 8.585</i>	<i>- / 7.070</i>	<i>- / 6.565</i>	<i>- / 5.050</i>	<i>- / 5.050</i>	<i>- / 5.050</i>	<i>- / 45.450</i>	
Total													
Total Cost (Procurement + Support + Installation)	8.094	11.545	17.535	22.585	0.000	22.585	20.070	16.565	15.050	15.050	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7										P-1 Line Item Number / Title: 5664 / Surface Training Equipment										Modification Number / Title: 1 / MB040 - BFTT SHIP SETS											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: MB040 - BFTT SHIP SETS																															
Manufacturer Information																															
Manufacturer Name: Various															Manufacturer Location: Various																
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 2017				Dec 2018				Dec 2019																					
Delivery Dates		Sep 2018				Sep 2019				Sep 2020																					
Installation Information																															
Method of Implementation: AIT:: Installation Name: BFTT SHIP SETS																															
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		- / -		9 / 4.545		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		9 / 4.545					
FY 2018		- / -		- / -		7 / 3.535		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		7 / 3.535					
FY 2019		- / -		- / -		- / -		17 / 8.585		0 / 0.000		17 / 8.585		- / -		- / -		- / -		- / -		- / -		0 / 0.000		17 / 8.585					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		14 / 7.070		- / -		- / -		- / -		- / -		0 / 0.000		14 / 7.070					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		13 / 6.565		- / -		- / -		- / -		0 / 0.000		13 / 6.565					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		10 / 5.050		- / -		- / -		0 / 0.000		10 / 5.050					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		10 / 5.050		0 / 0.000		10 / 5.050					
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		10 / 5.050		10 / 5.050					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
Total		- / -		9 / 4.545		7 / 3.535		17 / 8.585		0 / 0.000		17 / 8.585		14 / 7.070		13 / 6.565		10 / 5.050		10 / 5.050		10 / 5.050		10 / 5.050		90 / 45.450					
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	2	1	1	2	3	4	5	4	4	2	4	4	4	2	4	5	2	2	3	3	2	2	2	3	3	10	90
Out	-	-	5	2	2	-	2	2	3	-	9	4	4	-	6	4	4	-	6	5	2	-	5	3	2	2	2	3	3	10	90
Footnotes: ⁽¹⁸⁾ Increased materials and quantities installed in FY20 are required to meet cyber security requirements and to maintain connectivity with Navy Continuous Training Environment (NCTE) to meet shipboard integrated training demands.																															

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7					P-1 Line Item Number / Title: 5664 / Surface Training Equipment					Modification Number / Title: 2 / MB040 BFTT 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>	6.620	12.177	8.888	6.910	0.000	6.910	8.955	12.584	14.688	15.284	0.000	86.106
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	6.620	12.177	8.888	6.910	0.000	6.910	8.955	12.584	14.688	15.284	0.000	86.106
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	6.620	12.177	8.888	6.910	0.000	6.910	8.955	12.584	14.688	15.284	0.000	86.106
<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: Battle Force Tactical Training (BFTT)/ Total Ship Training Capability (TSTC) Upgrade Kits: Procure various quantities of upgrade kit/Engineering Change Proposal (ECP) system components, ShipAlts, Field Changes and Software Deliveries. ShipAlts are generally upgrades required to meet Combat Systems configuration requirements. Field Changes to existing BFTT, Battle force Electronic Warfare Trainer (BEWT), Total Ship Training Capability (TSTC), and Trainer Stimulator Simulator System (TSSS) systems include Information Assurance (IA) compliance, Obsolescence, Network upgrades and externally driven interface modifications. Software Deliveries required to support Combat System, IA and BFTT/BEWT/BEWT-II/TSTC/TSSS Hardware requirements. Upgrade Kits and interface upgrades implement Fleet prioritized warfighting training improvements to the TSTC/BFTT systems in order to meet evolving combat system capabilities. Training system improvements are a critical factor in achieving warfighter competencies and mission readiness. Unit costs are variable. FY20 - Upgrade/Field Change Kit funding will procure and integrate various Battle Force Tactical Training (BFTT)/Total Ship Training Capability (TSTC) family of systems upgrades to include Battle Force Tactical Training Electronic Warfare Trainer (BEWT) Baseline II Hardware & Software upgrades, BFTT Hardware 4.2 and Software Baselines 5.0 and 5.1 upgrades, Advanced Training Domain (ATD) AN/T52 hardware, and Training Simulation Stimulation System (TSSS) legacy radar interface upgrades. Upgrade BFTT/TSTC Shipboard Connectivity Suite (SCS) through a Tech Refresh, which increases materials needed to meet cyber security requirements. Upgrade Shipboard Network Connectivity in support of Fleet Synthetic Training (FST) at sea capability in support of Strike Group certification training events. Upgrade various TSTC related shore and ship based training systems. Installation funding supports installation and removal of various training system hardware/software upgrades (ECPs/Field Change (FCs)) on surface ships and related shore sites.												

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Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7				P-1 Line Item Number / Title: 5664 / Surface Training Equipment						Modification Number / Title: 2 / MB040 BFTT UPGRADE KITS			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: Battle Force Tactical Training Upgrade Kits				Modification Type: TBD				Related RDT&E PEs: 0204571N					
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: MB040 BFTT UPGRADE KITS													
B Kits													
Recurring													
1.1.1) BFTT UPGRADE KITS - NonOrganic ⁽¹⁹⁾	66 / 1.549	117 / 3.881	102 / 1.600	74 / 1.567	- / -	74 / 1.567	106 / 4.336	129 / 7.288	130 / 7.634	129 / 7.987	- / -	853 / 35.842	
<i>Subtotal: Recurring</i>	- / 1.549	- / 3.881	- / 1.600	- / 1.567	- / -	- / 1.567	- / 4.336	- / 7.288	- / 7.634	- / 7.987	- / 0.000	- / 35.842	
<i>Subtotal: MB040 BFTT UPGRADE KITS</i>	66 / 1.549	117 / 3.881	102 / 1.600	74 / 1.567	- / -	74 / 1.567	106 / 4.336	129 / 7.288	130 / 7.634	129 / 7.987	- / -	853 / 35.842	
<i>Subtotal: Procurement, All Modification Items</i>	- / 1.549	- / 3.881	- / 1.600	- / 1.567	- / -	- / 1.567	- / 4.336	- / 7.288	- / 7.634	- / 7.987	- / 0.000	- / 35.842	
Installation													
Modification Item 1 of 1: MB040 BFTT UPGRADE KITS	- / 5.071	- / 8.296	- / 7.288	- / 5.343	- / 0.000	- / 5.343	- / 4.619	- / 5.296	- / 7.054	- / 7.297	- / 0.000	- / 50.264	
<i>Subtotal: Installation</i>	- / 5.071	- / 8.296	- / 7.288	- / 5.343	- / -	- / 5.343	- / 4.619	- / 5.296	- / 7.054	- / 7.297	- / 0.000	- / 50.264	
Total													
Total Cost (Procurement + Support + Installation)	6.620	12.177	8.888	6.910	0.000	6.910	8.955	12.584	14.688	15.284	0.000	86.106	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2020 Navy										Date: March 2019																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 04 / 7										P-1 Line Item Number / Title: 5664 / Surface Training Equipment										Modification Number / Title: 2 / MB040 BFTT UPGRADE KITS											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: MB040 BFTT UPGRADE KITS																															
Manufacturer Information																															
Manufacturer Name: VARIOUS															Manufacturer Location: VARIOUS																
Administrative Leadtime (in Months): 3															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: AIT:: Installation Name: BFTT 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		66 / 5.071		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		66 / 5.071							
FY 2018		- / -		117 / 8.296		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		117 / 8.296							
FY 2019		- / -		- / -		96 / 7.288		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		96 / 7.288							
FY 2020		- / -		- / -		- / -		74 / 5.343		0 / 0.000		74 / 5.343		- / -		- / -		- / -		- / -		0 / 0.000		74 / 5.343							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		106 / 4.619		- / -		- / -		- / -		0 / 0.000		106 / 4.619							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		129 / 5.296		- / -		- / -		0 / 0.000		129 / 5.296							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		130 / 7.054		- / -		0 / 0.000		130 / 7.054							
FY 2024		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		129 / 7.297		0 / 0.000		129 / 7.297							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		66 / 5.071		117 / 8.296		96 / 7.288		74 / 5.343		0 / 0.000		74 / 5.343		106 / 4.619		129 / 5.296		130 / 7.054		129 / 7.297		0 / 0.000		847 / 50.264							
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	66	39	31	26	21	24	24	24	24	24	16	15	19	25	26	26	29	29	32	33	35	31	31	33	35	29	32	33	35	-	847
Out	66	39	31	26	21	24	24	24	24	24	16	15	19	25	26	26	29	29	32	33	35	31	31	33	35	29	32	33	35	-	847
Footnotes: ⁽¹⁹⁾ Unit costs are variable due to the unique software and/or hardware required by the specific training capability improvement. For example a software upgrade kit average unit cost is \$25K where as a hardware upgrade unit cost could be as much as \$125K based on the upgrade requirements. The increase in field change kits being procured and installed in FY20 are required to rapidly update installations in order to meet cyber security requirements, timelines to maintain cyber security accreditations, and to meet Fleet Synthetic Training (FST) at sea permanent change modification.																															