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**Department of Defense
Fiscal Year (FY) 2019 Budget Estimates**

February 2018



Navy

Justification Book Volume 1 of 5

Other Procurement, Navy

BA 1

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The estimated cost for this report for the Department of the Navy (DON) is \$56,163.

The estimated total cost for supporting the DON budget justification material is approximately \$1,643,653 for the 2018 fiscal year. This includes \$79,753 in supplies and \$1,563,900 in labor.

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Navy • Budget Estimates FY 2019 • Procurement

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Department of Defense Appropriations Act, 2019

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, \$9,601,528,000, to remain available for obligation until September 30, 2021.

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Department of the Navy
FY 2019 President's Budget
Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation -----	FY 2017 (Base + OCO) -----	FY 2018 PB Request with CR Adj Base -----	FY 2018 Total PB Requests* with CR Adj Base -----	FY 2018 PB Request with CR Adj OCO -----
Other Procurement, Navy	6,651,966	6,585,009	6,210,084	251,083
Total Department of the Navy	6,651,966	6,585,009	6,210,084	251,083

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Department of the Navy
FY 2019 President's Budget
Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation -----	FY 2018 Total PB Requests+ with CR Adj OCO -----	FY 2018 Emergency Requests** Emergency -----	FY 2018 Less Enacted Div B P.L.115-96*** MDDE + Ship Repairs -----	FY 2018 Remaining Req Emergency -----
Other Procurement, Navy	251,083	25,750		25,750
Total Department of the Navy	251,083	25,750		25,750

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Department of the Navy
FY 2019 President's Budget
Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation -----	FY 2018 Total PB Requests* with CR Adj Base + OCO + Emergency** -----	FY 2018 Less Enacted DIV B P.L.115-96*** MDDE + Ship Repairs -----	FY 2018 Remaining Req with CR Adj Base + OCO + Emergency -----
Other Procurement, Navy	6,461,167		6,461,167
Total Department of the Navy	6,461,167		6,461,167

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Department of the Navy
FY 2019 President's Budget
Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation -----	FY 2019 Base -----	FY 2019 OCO -----	FY 2019 Total -----
Other Procurement, Navy	9,414,355	187,173	9,601,528
Total Department of the Navy	9,414,355	187,173	9,601,528

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Department of the Navy
FY 2019 President's Budget
Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: Other Procurement, Navy

Budget Activity -----	FY 2017 (Base + OCO) -----	FY 2018 PB Request with CR Adj Base -----	FY 2018 Total PB Requests* with CR Adj Base -----	FY 2018 PB Request with CR Adj OCO -----
01. Ships Support Equipment	2,145,022	3,076,818	2,711,893	30,348
02. Communications & Electronics Equip	2,088,792	2,565,260	2,555,260	62,622
03. Aviation Support Equipment	418,972	441,542	441,542	29,245
04. Ordnance Support Equipment	1,010,342	929,371	929,371	34,406
05. Civil Engineering Support Equip	80,041	99,619	99,619	5,136
06. Supply Support Equipment	317,564	510,285	510,285	584
07. Personnel & Command Support Equip	391,606	376,329	376,329	56,540
08. Spares and Repair Parts	199,627	278,565	278,565	1,178
20. Undistributed		-1,692,780	-1,692,780	31,024
Total Other Procurement, Navy	6,651,966	6,585,009	6,210,084	251,083

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Department of the Navy
FY 2019 President's Budget
Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: Other Procurement, Navy

Budget Activity -----	FY 2018 Total PB Requests+ with CR Adj OCO -----	FY 2018 Emergency Requests** Emergency -----	FY 2018 Less Enacted Div B P.L.115-96*** MDDE + Ship Repairs -----	FY 2018 Remaining Req Emergency -----
01. Ships Support Equipment	30,348			
02. Communications & Electronics Equip	65,722	15,000		15,000
03. Aviation Support Equipment	29,245			
04. Ordnance Support Equipment	62,806			
05. Civil Engineering Support Equip	5,136			
06. Supply Support Equipment	584			
07. Personnel & Command Support Equip	56,540	10,750		10,750
08. Spares and Repair Parts	1,178			
20. Undistributed	-476			
Total Other Procurement, Navy	251,083	25,750		25,750

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Department of the Navy
FY 2019 President's Budget
Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: Other Procurement, Navy

Budget Activity -----	FY 2018 Total PB Requests* with CR Adj Base + OCO + Emergency** -----	FY 2018 Less Enacted DIV B P.L.115-96*** MDDE + Ship Repairs -----	FY 2018 Remaining Req with CR Adj Base + OCO + Emergency -----
01. Ships Support Equipment	2,742,241		2,742,241
02. Communications & Electronics Equip	2,635,982		2,635,982
03. Aviation Support Equipment	470,787		470,787
04. Ordnance Support Equipment	992,177		992,177
05. Civil Engineering Support Equip	104,755		104,755
06. Supply Support Equipment	510,869		510,869
07. Personnel & Command Support Equip	443,619		443,619
08. Spares and Repair Parts	279,743		279,743
20. Undistributed	-1,719,006		-1,719,006
Total Other Procurement, Navy	6,461,167		6,461,167

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Department of the Navy
FY 2019 President's Budget
Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: Other Procurement, Navy

Budget Activity -----	FY 2019 Base -----	FY 2019 OCO -----	FY 2019 Total -----
01. Ships Support Equipment	3,180,536	28,260	3,208,796
02. Communications & Electronics Equip	3,176,305	62,150	3,238,455
03. Aviation Support Equipment	502,933	21,156	524,089
04. Ordnance Support Equipment	1,047,675	33,580	1,081,255
05. Civil Engineering Support Equip	112,448	8,638	121,086
06. Supply Support Equipment	604,532	500	605,032
07. Personnel & Command Support Equip	463,088	32,889	495,977
08. Spares and Repair Parts	326,838		326,838
20. Undistributed			
Total Other Procurement, Navy	9,414,355	187,173	9,601,528

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Department of the Navy
FY 2019 President's Budget
Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 (Base + OCO) Quantity Cost	FY 2018 PB Request with CR Adj Base Quantity Cost	FY 2018 Total PB Requests* with CR Adj Base Quantity Cost	FY 2018 PB Request with CR Adj OCO Quantity Cost	S e c
Budget Activity 01: Ships Support Equipment							
Ship Propulsion Equipment							
1	Surface Power Equipment	A	15,514	41,910	41,910		U
2	Hybrid Electric Drive (HED)		10,983	6,331	6,331		U
Generators							
3	Surface Combatant HM&E	A	27,447	27,392	27,392		U
Navigation Equipment							
4	Other Navigation Equipment	A	62,970	65,943	65,943		U
Other Shipboard Equipment							
5	Sub Periscope, Imaging and Supt Equip Prog	A	151,963	151,240	151,240		U
6	DDG Mod	A	429,614	603,355	603,355		U
7	Firefighting Equipment	A	13,752	15,887	15,887		U
8	Command and Control Switchboard	A	2,140	2,240	2,240		U
9	LHA/LHD Midlife	A	22,768	30,287	4,287		U
10	Pollution Control Equipment	B	16,510	17,293	17,293		U
11	Submarine Support Equipment	A	8,995	27,990	27,990		U
12	Virginia Class Support Equipment	A	63,908	46,610	46,610		U
13	LCS Class Support Equipment		43,819	47,955	47,955		U
14	Submarine Batteries		22,459	17,594	17,594		U

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Department of the Navy
FY 2019 President's Budget
Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Total PB Requests+ with CR Adj OCO Quantity	Cost	FY 2018 Emergency Requests** Emergency Quantity	Cost	FY 2018 Less Enacted Div B P.L.115-96*** MDDE + Ship Repairs Quantity	Cost	FY 2018 Remaining Req Emergency Quantity	Cost	S e c
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Budget Activity 01: Ships Support Equipment											

Ship Propulsion Equipment											
1	Surface Power Equipment	A									U
2	Hybrid Electric Drive (HED)										U
Generators											
3	Surface Combatant HM&E	A									U
Navigation Equipment											
4	Other Navigation Equipment	A									U
Other Shipboard Equipment											
5	Sub Periscope, Imaging and Supt Equip Prog	A									U
6	DDG Mod	A									U
7	Firefighting Equipment	A									U
8	Command and Control Switchboard	A									U
9	LHA/LHD Midlife	A									U
10	Pollution Control Equipment	B									U
11	Submarine Support Equipment	A									U
12	Virginia Class Support Equipment	A									U
13	LCS Class Support Equipment										U
14	Submarine Batteries										U

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Department of the Navy
FY 2019 President's Budget
Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Total PB Requests* with CR Adj Base + OCO + Emergency** Quantity Cost	FY 2018 Less Enacted DIV B P.L.115-96*** MDDE + Ship Repairs Quantity Cost	FY 2018 Remaining Req with CR Adj Base + OCO + Emergency 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		41,910	U
2	Hybrid Electric Drive (HED)		6,331		6,331	U
Generators						
3	Surface Combatant HM&E	A	27,392		27,392	U
Navigation Equipment						
4	Other Navigation Equipment	A	65,943		65,943	U
Other Shipboard Equipment						
5	Sub Periscope, Imaging and Supt Equip Prog	A	151,240		151,240	U
6	DDG Mod	A	603,355		603,355	U
7	Firefighting Equipment	A	15,887		15,887	U
8	Command and Control Switchboard	A	2,240		2,240	U
9	LHA/LHD Midlife	A	4,287		4,287	U
10	Pollution Control Equipment	B	17,293		17,293	U
11	Submarine Support Equipment	A	27,990		27,990	U
12	Virginia Class Support Equipment	A	46,610		46,610	U
13	LCS Class Support Equipment		47,955		47,955	U
14	Submarine Batteries		17,594		17,594	U

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Department of the Navy
FY 2019 President's Budget
Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2019 Base Quantity	Cost	FY 2019 OCO Quantity	Cost	FY 2019 Total Quantity	Cost	S e c
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Budget Activity 01: Ships Support Equipment									

Ship Propulsion Equipment									
1	Surface Power Equipment	A		19,700			19,700		U
2	Hybrid Electric Drive (HED)								U
Generators									
3	Surface Combatant HM&E	A		23,495			23,495		U
Navigation Equipment									
4	Other Navigation Equipment	A		63,330			63,330		U
Other Shipboard Equipment									
5	Sub Periscope, Imaging and Supt Equip Prog	A		178,421			178,421		U
6	DDG Mod	A		487,999			487,999		U
7	Firefighting Equipment	A		28,143			28,143		U
8	Command and Control Switchboard	A		2,248			2,248		U
9	LHA/LHD Midlife	A		37,694			37,694		U
10	Pollution Control Equipment	B		20,883			20,883		U
11	Submarine Support Equipment	A		37,155			37,155		U
12	Virginia Class Support Equipment	A		66,328			66,328		U
13	LCS Class Support Equipment			47,241			47,241		U
14	Submarine Batteries			27,987			27,987		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 2017 (Base + OCO) Quantity Cost	FY 2018 PB Request with CR Adj Base Quantity Cost	FY 2018 Total PB Requests* with CR Adj Base Quantity Cost	FY 2018 PB Request with CR Adj OCO Quantity Cost	S e c
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15	LPD Class Support Equipment		32,052	61,908	61,908		U
16	DDG 1000 Class Support Equipment	A	33,404				U
17	Strategic Platform Support Equip	A	14,571	15,812	15,812		U
18	DSSP Equipment	A	806	4,178	4,178		U
19	CG Modernization	A	319,920	306,050	306,050		U
20	LCAC	A	3,090	5,507	5,507		U
21	Underwater EOD Programs		34,650	55,922	55,922	12,348	U
22	Items Less Than \$5 Million	A	65,994	96,909	96,909		U
23	Chemical Warfare Detectors	A	2,873	3,036	3,036		U
24	Submarine Life Support System	A	4,543	10,364	10,364		U
	Reactor Plant Equipment						
25	Reactor Power Units	A		324,925			U
26	Reactor Components	A	342,158	534,468	534,468		U
	Ocean Engineering						
27	Diving and Salvage Equipment	A	8,176	10,619	10,619		U
	Small Boats						
28	Standard Boats	A	59,033	46,094	46,094	18,000	U
	Production Facilities Equipment						
29	Operating Forces Ipe	A	71,921	191,541	191,541		U

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Department of the Navy
FY 2019 President's Budget
Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Total PB Requests+ with CR Adj OCO Quantity	Cost	FY 2018 Emergency Requests** Emergency Quantity	Cost	FY 2018 Less Enacted Div B P.L.115-96*** MDDE + Ship Repairs Quantity	Cost	FY 2018 Remaining Req Emergency Quantity	Cost	S e c
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15	LPD Class Support Equipment										U
16	DDG 1000 Class Support Equipment	A									U
17	Strategic Platform Support Equip	A									U
18	DSSP Equipment	A									U
19	CG Modernization	A									U
20	LCAC	A									U
21	Underwater EOD Programs			12,348							U
22	Items Less Than \$5 Million	A									U
23	Chemical Warfare Detectors	A									U
24	Submarine Life Support System	A									U
	Reactor Plant Equipment										
25	Reactor Power Units	A									U
26	Reactor Components	A									U
	Ocean Engineering										
27	Diving and Salvage Equipment	A									U
	Small Boats										
28	Standard Boats	A		18,000							U
	Production Facilities Equipment										
29	Operating Forces Ipe	A									U

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Department of the Navy
FY 2019 President's Budget
Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Total PB Requests* with CR Adj Base + OCO + Emergency** Quantity Cost	FY 2018 Less Enacted DIV B P.L.115-96*** MDDE + Ship Repairs Quantity Cost	FY 2018 Remaining Req with CR Adj Base + OCO + Emergency Quantity Cost	S e c
----	-----	-----	-----	-----	-----	-
15	LPD Class Support Equipment		61,908		61,908	U
16	DDG 1000 Class Support Equipment	A				U
17	Strategic Platform Support Equip	A	15,812		15,812	U
18	DSSP Equipment	A	4,178		4,178	U
19	CG Modernization	A	306,050		306,050	U
20	LCAC	A	5,507		5,507	U
21	Underwater EOD Programs		68,270		68,270	U
22	Items Less Than \$5 Million	A	96,909		96,909	U
23	Chemical Warfare Detectors	A	3,036		3,036	U
24	Submarine Life Support System	A	10,364		10,364	U
	Reactor Plant Equipment					
25	Reactor Power Units	A				U
26	Reactor Components	A	534,468		534,468	U
	Ocean Engineering					
27	Diving and Salvage Equipment	A	10,619		10,619	U
	Small Boats					
28	Standard Boats	A	64,094		64,094	U
	Production Facilities Equipment					
29	Operating Forces Ipe	A	191,541		191,541	U

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Department of the Navy
FY 2019 President's Budget
Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2019 Base Quantity	Cost	FY 2019 OCO Quantity	Cost	FY 2019 Total Quantity	Cost	S e c
----	-----	-----	-----	----	-----	----	-----	----	-
15	LPD Class Support Equipment			65,033			65,033		U
16	DDG 1000 Class Support Equipment	A		89,700			89,700		U
17	Strategic Platform Support Equip	A		22,254			22,254		U
18	DSSP Equipment	A		3,629			3,629		U
19	CG Modernization	A		276,446			276,446		U
20	LCAC	A		3,709			3,709		U
21	Underwater EOD Programs			78,807	9,200		88,007		U
22	Items Less Than \$5 Million	A		126,865			126,865		U
23	Chemical Warfare Detectors	A		2,966			2,966		U
24	Submarine Life Support System	A		11,968			11,968		U
	Reactor Plant Equipment								
25	Reactor Power Units	A		346,325			346,325		U
26	Reactor Components	A		497,063			497,063		U
	Ocean Engineering								
27	Diving and Salvage Equipment	A		10,706			10,706		U
	Small Boats								
28	Standard Boats	A		49,771	19,060		68,831		U
	Production Facilities Equipment								
29	Operating Forces Ipe	A		225,181			225,181		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 2017 (Base + OCO) Quantity Cost	FY 2018 PB Request with CR Adj Base Quantity Cost	FY 2018 Total PB Requests* with CR Adj Base Quantity Cost	FY 2018 PB Request with CR Adj OCO Quantity Cost	S e c
----	-----	-----	-----	-----	-----	-----	-
	Other Ship Support						
30	Nuclear Alterations	A	172,718				U
31	LCS Common Mission Modules Equipment		14,670	34,666	34,666		U
32	LCS MCM Mission Modules		29,724	55,870	55,870		U
33	LCS ASW Mission Modules						U
34	LCS SUW Mission Modules		21,064	52,960	52,960		U
35	LCS In-Service Modernization	A		74,426	74,426		U
	Logistic Support						
36	LSD Midlife & Modernization		20,813	89,536	75,536		U
	Total Ships Support Equipment		2,145,022	3,076,818	2,711,893	30,348	
	Budget Activity 02: Communications & Electronics Equip						
	Ship Sonars						
37	SPQ-9B Radar	A	10,376	30,086	20,086		U
38	AN/SQQ-89 Surf ASW Combat System	A	87,824	102,222	102,222		U
39	SSN Acoustic Equipment	A	288,265	287,553	287,553	43,500	U
40	Undersea Warfare Support Equipment	A	7,163	13,653	13,653		U
	ASW Electronic Equipment						
41	Submarine Acoustic Warfare System	A	21,291	21,449	21,449		U
42	SSTD	A	6,893	12,867	12,867		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 2018 Total PB Requests+ with CR Adj OCO Quantity	Cost	FY 2018 Emergency Requests** Emergency Quantity	Cost	FY 2018 Less Enacted Div B P.L.115-96*** MDDE + Ship Repairs Quantity	Cost	FY 2018 Remaining Req Emergency Quantity	Cost	S e c
Other Ship Support											
30	Nuclear Alterations	A									U
31	LCS Common Mission Modules Equipment										U
32	LCS MCM Mission Modules										U
33	LCS ASW Mission Modules										U
34	LCS SUW Mission Modules										U
35	LCS In-Service Modernization	A									U
Logistic Support											
36	LSD Midlife & Modernization										U
Total Ships Support Equipment				30,348							
Budget Activity 02: Communications & Electronics Equip											
Ship Sonars											
37	SPQ-9B Radar	A									U
38	AN/SQQ-89 Surf ASW Combat System	A									U
39	SSN Acoustic Equipment	A		43,500							U
40	Undersea Warfare Support Equipment	A									U
ASW Electronic Equipment											
41	Submarine Acoustic Warfare System	A									U
42	SSTD	A									U

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Department of the Navy
FY 2019 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 2018 Total PB Requests* with CR Adj Base + OCO + Emergency** Quantity Cost	FY 2018 Less Enacted DIV B P.L.115-96*** MDDE + Ship Repairs Quantity Cost	FY 2018 Remaining Req with CR Adj Base + OCO + Emergency Quantity Cost	S e c
Other Ship Support						
30	Nuclear Alterations	A				U
31	LCS Common Mission Modules Equipment		34,666		34,666	U
32	LCS MCM Mission Modules		55,870		55,870	U
33	LCS ASW Mission Modules					U
34	LCS SUW Mission Modules		52,960		52,960	U
35	LCS In-Service Modernization	A	74,426		74,426	U
Logistic Support						
36	LSD Midlife & Modernization		75,536		75,536	U
Total Ships Support Equipment			2,742,241		2,742,241	
Budget Activity 02: Communications & Electronics Equip						
Ship Sonars						
37	SPQ-9B Radar	A	20,086		20,086	U
38	AN/SQQ-89 Surf ASW Combat System	A	102,222		102,222	U
39	SSN Acoustic Equipment	A	331,053		331,053	U
40	Undersea Warfare Support Equipment	A	13,653		13,653	U
ASW Electronic Equipment						
41	Submarine Acoustic Warfare System	A	21,449		21,449	U
42	SSTD	A	12,867		12,867	U

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Department of the Navy
FY 2019 President's Budget
Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2019 Base Quantity	Cost	FY 2019 OCO Quantity	Cost	FY 2019 Total Quantity	Cost	S e c
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	Other Ship Support								
30	Nuclear Alterations	A							U
31	LCS Common Mission Modules Equipment			46,732			46,732		U
32	LCS MCM Mission Modules			124,147			124,147		U
33	LCS ASW Mission Modules			57,294			57,294		U
34	LCS SUW Mission Modules			26,006			26,006		U
35	LCS In-Service Modernization	A		70,526			70,526		U
	Logistic Support								
36	LSD Midlife & Modernization			4,784			4,784		U
				-----		-----	-----		
	Total Ships Support Equipment			3,180,536		28,260	3,208,796		
	Budget Activity 02: Communications & Electronics Equip								

	Ship Sonars								
37	SPQ-9B Radar	A		20,309			20,309		U
38	AN/SQQ-89 Surf ASW Combat System	A		115,459			115,459		U
39	SSN Acoustic Equipment	A		318,189			318,189		U
40	Undersea Warfare Support Equipment	A		10,134			10,134		U
	ASW Electronic Equipment								
41	Submarine Acoustic Warfare System	A		23,815			23,815		U
42	SSTD	A		11,277			11,277		U

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Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 (Base + OCO) Quantity Cost	FY 2018 PB Request with CR Adj Base Quantity Cost	FY 2018 Total PB Requests* with CR Adj Base Quantity Cost	FY 2018 PB Request with CR Adj OCO Quantity Cost	S e c
----	-----	-----	-----	-----	-----	-----	-
43	Fixed Surveillance System	A	145,701	300,102	300,102		U
44	SURTASS	A	43,743	30,180	30,180		U
	Electronic Warfare Equipment						
45	AN/SLQ-32	A	244,001	240,433	240,433		U
	Reconnaissance Equipment						
46	Shipboard IW Exploit	A	169,021	187,007	187,007		U
47	Automated Identification System (AIS)		764	510	510		U
	Other Ship Electronic Equipment						
48	Cooperative Engagement Capability	B	17,965	23,892	23,892		U
49	Naval Tactical Command Support System (NTCSS)	A	12,336	10,741	10,741		U
50	ATDLS	A	24,395	38,016	38,016		U
51	Navy Command and Control System (NCCS)		4,556	4,512	4,512		U
52	Minesweeping System Replacement	A	26,764	31,531	31,531		U
53	Shallow Water MCM	B	8,875	8,796	8,796		U
54	Navstar GPS Receivers (SPACE)	A	7,102	15,923	15,923		U
55	American Forces Radio and TV Service	A	4,577	2,730	2,730		U
56	Strategic Platform Support Equip	A	8,972	6,889	6,889		U
	Aviation Electronic Equipment						
57	Ashore ATC Equipment	A	68,392	71,882	71,882		U

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Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Total PB Requests+ with CR Adj OCO Quantity	Cost	FY 2018 Emergency Requests** Emergency Quantity	Cost	FY 2018 Less Enacted Div B P.L.115-96*** MDDE + Ship Repairs Quantity	Cost	FY 2018 Remaining Req Emergency Quantity	Cost	S e c
----	-----	-----	-----	----	-----	----	-----	----	-----	----	-
43	Fixed Surveillance System	A									U
44	SURTASS	A									U
	Electronic Warfare Equipment										
45	AN/SLQ-32	A									U
	Reconnaissance Equipment										
46	Shipboard IW Exploit	A									U
47	Automated Identification System (AIS)										U
	Other Ship Electronic Equipment										
48	Cooperative Engagement Capability	B									U
49	Naval Tactical Command Support System (NTCSS)	A									U
50	ATDLS	A									U
51	Navy Command and Control System (NCCS)										U
52	Minesweeping System Replacement	A									U
53	Shallow Water MCM	B									U
54	Navstar GPS Receivers (SPACE)	A									U
55	American Forces Radio and TV Service	A									U
56	Strategic Platform Support Equip	A									U
	Aviation Electronic Equipment										
57	Ashore ATC Equipment	A									U

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(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Total PB Requests* with CR Adj Base + OCO + Emergency** Quantity	Cost	FY 2018 Less Enacted DIV B P.L.115-96*** MDDE + Ship Repairs Quantity	Cost	FY 2018 Remaining Req with CR Adj Base + OCO + Emergency Quantity	Cost	S e c
----	-----	-----	-----	----	-----	----	-----	----	-
43	Fixed Surveillance System	A		300,102			300,102		U
44	SURTASS	A		30,180			30,180		U
	Electronic Warfare Equipment								
45	AN/SLQ-32	A		240,433			240,433		U
	Reconnaissance Equipment								
46	Shipboard IW Exploit	A		187,007			187,007		U
47	Automated Identification System (AIS)			510			510		U
	Other Ship Electronic Equipment								
48	Cooperative Engagement Capability	B		23,892			23,892		U
49	Naval Tactical Command Support System (NTCSS)	A		10,741			10,741		U
50	ATDLS	A		38,016			38,016		U
51	Navy Command and Control System (NCCS)			4,512			4,512		U
52	Minesweeping System Replacement	A		31,531			31,531		U
53	Shallow Water MCM	B		8,796			8,796		U
54	Navstar GPS Receivers (SPACE)	A		15,923			15,923		U
55	American Forces Radio and TV Service	A		2,730			2,730		U
56	Strategic Platform Support Equip	A		6,889			6,889		U
	Aviation Electronic Equipment								
57	Ashore ATC Equipment	A		71,882			71,882		U

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Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2019 Base Quantity	Cost	FY 2019 OCO Quantity	Cost	FY 2019 Total Quantity	Cost	S e c
----	-----	-----	-----	----	-----	----	-----	----	-
43	Fixed Surveillance System	A		237,780		56,950		294,730	U
44	SURTASS	A		57,872				57,872	U
	Electronic Warfare Equipment								
45	AN/SLQ-32	A		420,344				420,344	U
	Reconnaissance Equipment								
46	Shipboard IW Exploit	A		220,883				220,883	U
47	Automated Identification System (AIS)			4,028				4,028	U
	Other Ship Electronic Equipment								
48	Cooperative Engagement Capability	B		44,173				44,173	U
49	Naval Tactical Command Support System (NTCSS)	A		10,991				10,991	U
50	ATDLS	A		34,526				34,526	U
51	Navy Command and Control System (NCCS)			3,769				3,769	U
52	Minesweeping System Replacement	A		35,709				35,709	U
53	Shallow Water MCM	B		8,616				8,616	U
54	Navstar GPS Receivers (SPACE)	A		10,703				10,703	U
55	American Forces Radio and TV Service	A		2,626				2,626	U
56	Strategic Platform Support Equip	A		9,467				9,467	U
	Aviation Electronic Equipment								
57	Ashore ATC Equipment	A		70,849				70,849	U

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Line No	Item Nomenclature	Ident Code	FY 2017 (Base + OCO) Quantity Cost	FY 2018 PB Request with CR Adj Base Quantity Cost	FY 2018 Total PB Requests* with CR Adj Base Quantity Cost	FY 2018 PB Request with CR Adj OCO Quantity Cost	S e c
----	-----	-----	-----	-----	-----	-----	-
58	Afloat ATC Equipment	A	29,411	44,611	44,611		U
59	ID Systems	A	22,177	21,239	21,239		U
60	Joint Precision Approach And Landing System (						U
61	Naval Mission Planning Systems	A	13,910	11,976	11,976	2,550	U
	Other Shore Electronic Equipment						
62	Tactical/Mobile C4I Systems	A	23,908	32,425	32,425	7,900	U
63	DCGS-N	A	23,610	13,790	13,790	6,392	U
64	CANES		207,730	322,754	322,754		U
65	RADIAC	A	8,092	10,718	10,718		U
66	CANES-Intell		35,313	48,028	48,028		U
67	GPETE	A	6,428	6,861	6,861		U
68	MASF			8,081	8,081		U
69	Integ Combat System Test Facility	A	8,376	5,019	5,019		U
70	EMI Control Instrumentation	A	3,971	4,188	4,188		U
71	Items Less Than \$5 Million	A	47,664	105,292	105,292		U
	Shipboard Communications						
72	Shipboard Tactical Communications	A	9,671	23,695	23,695		U
73	Ship Communications Automation	A	109,191	103,990	103,990		U
74	Communications Items Under \$5M	A	10,077	18,577	18,577		U

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Line No	Item Nomenclature	Ident Code	FY 2018 Total PB Requests+ with CR Adj OCO Quantity	Cost	FY 2018 Emergency Requests** Emergency Quantity	Cost	FY 2018 Less Enacted Div B P.L.115-96*** MDDE + Ship Repairs Quantity	Cost	FY 2018 Remaining Req Emergency Quantity	Cost	S e c
----	-----	-----	-----	----	-----	----	-----	----	-----	----	-
58	Afloat ATC Equipment	A									U
59	ID Systems	A									U
60	Joint Precision Approach And Landing System (										U
61	Naval Mission Planning Systems	A		2,550							U
	Other Shore Electronic Equipment										
62	Tactical/Mobile C4I Systems	A		7,900							U
63	DCGS-N	A		6,392							U
64	CANES										U
65	RADIAC	A									U
66	CANES-Intell										U
67	GPETE	A									U
68	MASF										U
69	Integ Combat System Test Facility	A									U
70	EMI Control Instrumentation	A									U
71	Items Less Than \$5 Million	A									U
	Shipboard Communications										
72	Shipboard Tactical Communications	A									U
73	Ship Communications Automation	A									U
74	Communications Items Under \$5M	A									U

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Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Total PB Requests* with CR Adj Base + OCO + Emergency** Quantity	Cost	FY 2018 Less Enacted DIV B P.L.115-96*** MDDE + Ship Repairs Quantity	Cost	FY 2018 Remaining Req with CR Adj Base + OCO + Emergency Quantity	Cost	S e c
----	-----	-----	-----	----	-----	----	-----	----	-
58	Afloat ATC Equipment	A		44,611			44,611		U
59	ID Systems	A		21,239			21,239		U
60	Joint Precision Approach And Landing System (								U
61	Naval Mission Planning Systems	A		14,526			14,526		U
	Other Shore Electronic Equipment								
62	Tactical/Mobile C4I Systems	A		40,325			40,325		U
63	DCGS-N	A		20,182			20,182		U
64	CANES			322,754			322,754		U
65	RADIAC	A		10,718			10,718		U
66	CANES-Intell			48,028			48,028		U
67	GPETE	A		6,861			6,861		U
68	MASF			8,081			8,081		U
69	Integ Combat System Test Facility	A		5,019			5,019		U
70	EMI Control Instrumentation	A		4,188			4,188		U
71	Items Less Than \$5 Million	A		105,292			105,292		U
	Shipboard Communications								
72	Shipboard Tactical Communications	A		23,695			23,695		U
73	Ship Communications Automation	A		103,990			103,990		U
74	Communications Items Under \$5M	A		18,577			18,577		U

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Line No	Item Nomenclature	Ident Code	FY 2019 Base Quantity	Cost	FY 2019 OCO Quantity	Cost	FY 2019 Total Quantity	Cost	S e c
----	-----	-----	-----	----	-----	----	-----	----	-
58	Afloat ATC Equipment	A		47,890			47,890		U
59	ID Systems	A		26,163			26,163		U
60	Joint Precision Approach And Landing System (			38,094			38,094		U
61	Naval Mission Planning Systems	A		11,966			11,966		U
	Other Shore Electronic Equipment								
62	Tactical/Mobile C4I Systems	A		42,010			42,010		U
63	DCGS-N	A		12,896			12,896		U
64	CANES			423,027			423,027		U
65	RADIAC	A		8,175			8,175		U
66	CANES-Intell			54,465			54,465		U
67	GPETE	A		5,985			5,985		U
68	MASF			5,413			5,413		U
69	Integ Combat System Test Facility	A		6,251			6,251		U
70	EMI Control Instrumentation	A		4,183			4,183		U
71	Items Less Than \$5 Million	A		148,350			148,350		U
	Shipboard Communications								
72	Shipboard Tactical Communications	A		45,450			45,450		U
73	Ship Communications Automation	A		105,087			105,087		U
74	Communications Items Under \$5M	A		41,123			41,123		U

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Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 (Base + OCO) Quantity Cost	FY 2018 PB Request with CR Adj Base Quantity Cost	FY 2018 Total PB Requests* with CR Adj Base Quantity Cost	FY 2018 PB Request with CR Adj OCO Quantity Cost	S e c
----	-----	-----	-----	-----	-----	-----	-
	Submarine Communications						
75	Submarine Broadcast Support	A	31,068	29,669	29,669		U
76	Submarine Communication Equipment	A	62,305	86,204	86,204		U
	Satellite Communications						
77	Satellite Communications Systems	A	14,414	14,654	14,654		U
78	Navy Multiband Terminal (NMT)		33,992	69,764	69,764		U
	Shore Communications						
79	Joint Communications Support Element (JCSE)	A	4,156	4,256	4,256		U
	Cryptographic Equipment						
80	Info Systems Security Program (ISSP)	A	92,454	89,663	89,663		U
81	MIO Intel Exploitation Team	A	920	961	961		U
	Cryptologic Equipment						
82	Cryptologic Communications Equip	A	23,698	11,287	11,287	2,280	U
	Other Electronic Support						
83	DON UAS 1***	A	2,517				U
84	DON UAS 2***	A	4,927				U
85	DON ACTS***	A	1,545				U
86	Coast Guard Equipment	A	32,291	36,584	36,584		U

***Funding in this line item was transferred during the year of execution from the Spectrum Relocation Fund (SRF) in support of the Advanced Wireless Services 3 (AWS-3) auction and is associated with the reallocation or sharing of the 1755-1780 MHz and 1695-1710 MHz bands. The SRF is administered by the Office of Management and Budget (OMB), which approves SRF transfers to federal agencies on an annual basis in consultation with the National Telecommunications and Information Administration (NTIA).

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Submarine Communications											
75	Submarine Broadcast Support	A			15,000				15,000		U
76	Submarine Communication Equipment	A									U
Satellite Communications											
77	Satellite Communications Systems	A									U
78	Navy Multiband Terminal (NMT)										U
Shore Communications											
79	Joint Communications Support Element (JCSE)	A									U
Cryptographic Equipment											
80	Info Systems Security Program (ISSP)	A									U
81	MIO Intel Exploitation Team	A									U
Cryptologic Equipment											
82	Cryptologic Communications Equip	A		5,380							U
Other Electronic Support											
83	DON UAS 1***	A									U
84	DON UAS 2***	A									U
85	DON ACTS***	A									U
86	Coast Guard Equipment	A									U

***Funding in this line item was transferred during the year of execution from the Spectrum Relocation Fund (SRF) in support of the Advanced Wireless Services 3 (AWS-3) auction and is associated with the reallocation or sharing of the 1755-1780 MHz and 1695-1710 MHz bands. The SRF is administered by the Office of Management and Budget (OMB), which approves SRF transfers to federal agencies on an annual basis in consultation with the National Telecommunications and Information Administration (NTIA).

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Line No	Item Nomenclature	Ident Code	FY 2018 Total PB Requests* with CR Adj Base + OCO + Emergency** Quantity Cost	FY 2018 Less Enacted DIV B P.L.115-96*** MDDE + Ship Repairs Quantity Cost	FY 2018 Remaining Req with CR Adj Base + OCO + Emergency Quantity Cost	S e c
----	-----	-----	-----	-----	-----	-
Submarine Communications						
75	Submarine Broadcast Support	A	44,669		44,669	U
76	Submarine Communication Equipment	A	86,204		86,204	U
Satellite Communications						
77	Satellite Communications Systems	A	14,654		14,654	U
78	Navy Multiband Terminal (NMT)		69,764		69,764	U
Shore Communications						
79	Joint Communications Support Element (JCSE)	A	4,256		4,256	U
Cryptographic Equipment						
80	Info Systems Security Program (ISSP)	A	89,663		89,663	U
81	MIO Intel Exploitation Team	A	961		961	U
Cryptologic Equipment						
82	Cryptologic Communications Equip	A	16,667		16,667	U
Other Electronic Support						
83	DON UAS 1***	A				U
84	DON UAS 2***	A				U
85	DON ACTS***	A				U
86	Coast Guard Equipment	A	36,584		36,584	U

***Funding in this line item was transferred during the year of execution from the Spectrum Relocation Fund (SRF) in support of the Advanced Wireless Services 3 (AWS-3) auction and is associated with the reallocation or sharing of the 1755-1780 MHz and 1695-1710 MHz bands. The SRF is administered by the Office of Management and Budget (OMB), which approves SRF transfers to federal agencies on an annual basis in consultation with the National Telecommunications and Information Administration (NTIA).

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Line No	Item Nomenclature	Ident Code	FY 2019 Base Quantity	Cost	FY 2019 OCO Quantity	Cost	FY 2019 Total Quantity	Cost	S e c
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Submarine Communications									
75	Submarine Broadcast Support	A		30,897			30,897		U
76	Submarine Communication Equipment	A		78,580			78,580		U
Satellite Communications									
77	Satellite Communications Systems	A		41,205		3,200	44,405		U
78	Navy Multiband Terminal (NMT)			113,885			113,885		U
Shore Communications									
79	Joint Communications Support Element (JCSE)	A		4,292			4,292		U
Cryptographic Equipment									
80	Info Systems Security Program (ISSP)	A		153,526			153,526		U
81	MIO Intel Exploitation Team	A		951			951		U
Cryptologic Equipment									
82	Cryptologic Communications Equip	A		14,209		2,000	16,209		U
Other Electronic Support									
83	DON UAS 1***	A							U
84	DON UAS 2***	A							U
85	DON ACTS***	A							U
86	Coast Guard Equipment	A		40,713			40,713		U

***Funding in this line item was transferred during the year of execution from the Spectrum Relocation Fund (SRF) in support of the Advanced Wireless Services 3 (AWS-3) auction and is associated with the reallocation or sharing of the 1755-1780 MHz and 1695-1710 MHz bands. The SRF is administered by the Office of Management and Budget (OMB), which approves SRF transfers to federal agencies on an annual basis in consultation with the National Telecommunications and Information Administration (NTIA).

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Line No	Item Nomenclature	Ident Code	FY 2017 (Base + OCO) Quantity Cost	FY 2018 PB Request with CR Adj Base Quantity Cost	FY 2018 Total PB Requests* with CR Adj Base Quantity Cost	FY 2018 PB Request with CR Adj OCO Quantity Cost	S e c
----	-----	-----	-----	-----	-----	-----	-
	Drug Interdiction Support						
87	Other Drug Interdiction Support	A	16,000				U
			-----	-----	-----	-----	
	Total Communications & Electronics Equip		2,088,792	2,565,260	2,555,260	62,622	
	Budget Activity 03: Aviation Support Equipment						

	Sonobuoys						
88	Sonobuoys - All Types	A	158,588	173,616	173,616		U
	Aircraft Support Equipment						
89	Weapons Range Support Equipment	A	58,116	72,110	72,110		U
90	Aircraft Support Equipment	A	115,551	108,482	108,482		U
91	Advanced Arresting Gear (AAG)	A		10,900	10,900		U
92	Meteorological Equipment	A	29,015	21,137	21,137		U
93	DCRS/DPL	A	632	660	660		U
94	Airborne Mine Countermeasures	A	27,542	20,605	20,605		U
95	Lamps Equipment						U
96	Aviation Support Equipment	A	29,528	34,032	34,032	29,245	U
97	UMCS-Unman Carrier Aviation(UCA)Mission Cntrl	A					U
			-----	-----	-----	-----	
	Total Aviation Support Equipment		418,972	441,542	441,542	29,245	

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	Drug Interdiction Support										
87	Other Drug Interdiction Support	A									U
	Total Communications & Electronics Equip			65,722		15,000				15,000	
	Budget Activity 03: Aviation Support Equipment										
	Sonobuoys										
88	Sonobuoys - All Types	A									U
	Aircraft Support Equipment										
89	Weapons Range Support Equipment	A									U
90	Aircraft Support Equipment	A									U
91	Advanced Arresting Gear (AAG)	A									U
92	Meteorological Equipment	A									U
93	DCRS/DPL	A									U
94	Airborne Mine Countermeasures	A									U
95	Lamps Equipment										U
96	Aviation Support Equipment	A		29,245							U
97	UMCS-Unman Carrier Aviation(UCA)Mission Cntrl	A									U
	Total Aviation Support Equipment			29,245							

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Line No	Item Nomenclature	Ident Code	FY 2018 Total PB Requests* with CR Adj Base + OCO + Emergency** Quantity Cost	FY 2018 Less Enacted DIV B P.L.115-96*** MDDE + Ship Repairs Quantity Cost	FY 2018 Remaining Req with CR Adj Base + OCO + Emergency Quantity Cost	S e c
----	-----	-----	-----	-----	-----	-
	Drug Interdiction Support					
87	Other Drug Interdiction Support	A				U
			-----	-----	-----	
	Total Communications & Electronics Equip		2,635,982		2,635,982	
	Budget Activity 03: Aviation Support Equipment					

	Sonobuoys					
88	Sonobuoys - All Types	A	173,616		173,616	U
	Aircraft Support Equipment					
89	Weapons Range Support Equipment	A	72,110		72,110	U
90	Aircraft Support Equipment	A	108,482		108,482	U
91	Advanced Arresting Gear (AAG)	A	10,900		10,900	U
92	Meteorological Equipment	A	21,137		21,137	U
93	DCRS/DPL	A	660		660	U
94	Airborne Mine Countermeasures	A	20,605		20,605	U
95	Lamps Equipment					U
96	Aviation Support Equipment	A	63,277		63,277	U
97	UMCS-Unman Carrier Aviation(UCA)Mission Cntrl	A				U
			-----	-----	-----	
	Total Aviation Support Equipment		470,787		470,787	

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Department of the Navy
FY 2019 President's Budget
Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2019 Base Quantity	Cost	FY 2019 OCO Quantity	Cost	FY 2019 Total Quantity	Cost	S e c
----	-----	-----	-----	----	-----	----	-----	----	-
	Drug Interdiction Support								
87	Other Drug Interdiction Support	A							U
	Total Communications & Electronics Equip		3,176,305		62,150		3,238,455		
	Budget Activity 03: Aviation Support Equipment								

	Sonobuoys								
88	Sonobuoys - All Types	A	177,891		21,156		199,047		U
	Aircraft Support Equipment								
89	Weapons Range Support Equipment	A	93,864				93,864		U
90	Aircraft Support Equipment	A	111,724				111,724		U
91	Advanced Arresting Gear (AAG)	A	11,054				11,054		U
92	Meteorological Equipment	A	21,072				21,072		U
93	DCRS/DPL	A	656				656		U
94	Airborne Mine Countermeasures	A	11,299				11,299		U
95	Lamps Equipment		594				594		U
96	Aviation Support Equipment	A	39,374				39,374		U
97	UMCS-Unman Carrier Aviation(UCA)Mission Cntrl	A	35,405				35,405		U
	Total Aviation Support Equipment		502,933		21,156		524,089		

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Department of the Navy
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Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 (Base + OCO) Quantity Cost	FY 2018 PB Request with CR Adj Base Quantity Cost	FY 2018 Total PB Requests* with CR Adj Base Quantity Cost	FY 2018 PB Request with CR Adj OCO Quantity Cost	S e c
----	-----	-----	-----	-----	-----	-----	-
Budget Activity 04: Ordnance Support Equipment							

Ship Gun System Equipment							
98	Ship Gun Systems Equipment	A	6,191	5,277	5,277		U
Ship Missile Systems Equipment							
99	Ship Missile Support Equipment	A	307,447	272,359	272,359	2,436	U
100	Tomahawk Support Equipment	A	67,062	73,184	73,184		U
FBM Support Equipment							
101	Strategic Missile Systems Equip	A	215,138	246,221	246,221		U
ASW Support Equipment							
102	SSN Combat Control Systems	A	144,715	129,972	129,972		U
103	ASW Support Equipment	A	36,431	23,209	23,209		U
Other Ordnance Support Equipment							
104	Explosive Ordnance Disposal Equip	B	92,655	15,596	15,596	31,970	U
105	Items Less Than \$5 Million	A	6,243	5,981	5,981		U
Other Expendable Ordnance							
106	Submarine Training Device Mods	A	46,746	74,550	74,550		U
107	Surface Training Equipment	A	87,714	83,022	83,022		U
Total Ordnance Support Equipment			1,010,342	929,371	929,371	34,406	

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Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Total PB Requests+ with CR Adj OCO Quantity	Cost	FY 2018 Emergency Requests** Emergency Quantity	Cost	FY 2018 Less Enacted Div B P.L.115-96*** MDDE + Ship Repairs Quantity	Cost	FY 2018 Remaining Req Emergency Quantity	Cost	S e c
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Budget Activity 04: Ordnance Support Equipment											

	Ship Gun System Equipment										
98	Ship Gun Systems Equipment	A									U
	Ship Missile Systems Equipment										
99	Ship Missile Support Equipment	A		2,436							U
100	Tomahawk Support Equipment	A									U
	FBM Support Equipment										
101	Strategic Missile Systems Equip	A									U
	ASW Support Equipment										
102	SSN Combat Control Systems	A									U
103	ASW Support Equipment	A									U
	Other Ordnance Support Equipment										
104	Explosive Ordnance Disposal Equip	B		60,370							U
105	Items Less Than \$5 Million	A									U
	Other Expendable Ordnance										
106	Submarine Training Device Mods	A									U
107	Surface Training Equipment	A									U
				-----		-----		-----		-----	
	Total Ordnance Support Equipment			62,806							

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Department of the Navy
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Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Total PB Requests* with CR Adj Base + OCO + Emergency** Quantity Cost	FY 2018 Less Enacted DIV B P.L.115-96*** MDDE + Ship Repairs Quantity Cost	FY 2018 Remaining Req with CR Adj Base + OCO + Emergency Quantity Cost	S e c
----	-----	-----	-----	-----	-----	-
Budget Activity 04: Ordnance Support Equipment						

	Ship Gun System Equipment					
98	Ship Gun Systems Equipment	A	5,277		5,277	U
	Ship Missile Systems Equipment					
99	Ship Missile Support Equipment	A	274,795		274,795	U
100	Tomahawk Support Equipment	A	73,184		73,184	U
	FBM Support Equipment					
101	Strategic Missile Systems Equip	A	246,221		246,221	U
	ASW Support Equipment					
102	SSN Combat Control Systems	A	129,972		129,972	U
103	ASW Support Equipment	A	23,209		23,209	U
	Other Ordnance Support Equipment					
104	Explosive Ordnance Disposal Equip	B	75,966		75,966	U
105	Items Less Than \$5 Million	A	5,981		5,981	U
	Other Expendable Ordnance					
106	Submarine Training Device Mods	A	74,550		74,550	U
107	Surface Training Equipment	A	83,022		83,022	U
			-----	-----	-----	
	Total Ordnance Support Equipment		992,177		992,177	

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Department of the Navy
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Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2019 Base Quantity	Cost	FY 2019 OCO Quantity	Cost	FY 2019 Total Quantity	Cost	S e c
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Budget Activity 04: Ordnance Support Equipment -----									
Ship Gun System Equipment									
98	Ship Gun Systems Equipment	A		5,337			5,337		U
Ship Missile Systems Equipment									
99	Ship Missile Support Equipment	A		213,090			213,090		U
100	Tomahawk Support Equipment	A		92,890			92,890		U
FBM Support Equipment									
101	Strategic Missile Systems Equip	A		271,817			271,817		U
ASW Support Equipment									
102	SSN Combat Control Systems	A		129,501			129,501		U
103	ASW Support Equipment	A		19,436			19,436		U
Other Ordnance Support Equipment									
104	Explosive Ordnance Disposal Equip	B		14,258	33,580		47,838		U
105	Items Less Than \$5 Million	A		5,378			5,378		U
Other Expendable Ordnance									
106	Submarine Training Device Mods	A		65,543			65,543		U
107	Surface Training Equipment	A		230,425			230,425		U
Total Ordnance Support Equipment				1,047,675	33,580		1,081,255		

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Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 (Base + OCO) Quantity Cost	FY 2018 PB Request with CR Adj Base Quantity Cost	FY 2018 Total PB Requests* with CR Adj Base Quantity Cost	FY 2018 PB Request with CR Adj OCO Quantity Cost	S e c
----	-----	-----	-----	-----	-----	-----	-
Budget Activity 05: Civil Engineering Support Equip -----							
Civil Engineering Support Equipment							
108	Passenger Carrying Vehicles	A	9,078	5,299	5,299		U
109	General Purpose Trucks	A	4,794	2,946	2,946	496	U
110	Construction & Maintenance Equip	A	18,553	34,970	34,970		U
111	Fire Fighting Equipment	A	14,199	2,541	2,541	2,304	U
112	Tactical Vehicles	B	13,824	19,699	19,699	2,336	U
113	Amphibious Equipment	A	7,676	12,162	12,162		U
114	Pollution Control Equipment	A	2,321	2,748	2,748		U
115	Items Under \$5 Million	A	8,501	18,084	18,084		U
116	Physical Security Vehicles	A	1,095	1,170	1,170		U
Total Civil Engineering Support Equip			80,041	99,619	99,619	5,136	
Budget Activity 06: Supply Support Equipment -----							
Supply Support Equipment							
117	Supply Equipment	A	16,978	21,797	21,797	164	U
118	First Destination Transportation	A	5,115	5,572	5,572	420	U
119	Special Purpose Supply Systems	A	295,471	482,916	482,916		U
Total Supply Support Equipment			317,564	510,285	510,285	584	

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Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Total PB Requests+ with CR Adj OCO Quantity	Cost	FY 2018 Emergency Requests** Emergency Quantity	Cost	FY 2018 Less Enacted Div B P.L.115-96*** MDDE + Ship Repairs Quantity	Cost	FY 2018 Remaining Req Emergency Quantity	Cost	S e c
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Budget Activity 05: Civil Engineering Support Equip -----											
Civil Engineering Support Equipment											
108	Passenger Carrying Vehicles	A									U
109	General Purpose Trucks	A		496							U
110	Construction & Maintenance Equip	A									U
111	Fire Fighting Equipment	A		2,304							U
112	Tactical Vehicles	B		2,336							U
113	Amphibious Equipment	A									U
114	Pollution Control Equipment	A									U
115	Items Under \$5 Million	A									U
116	Physical Security Vehicles	A									U
	Total Civil Engineering Support Equip			5,136							
Budget Activity 06: Supply Support Equipment -----											
Supply Support Equipment											
117	Supply Equipment	A		164							U
118	First Destination Transportation	A		420							U
119	Special Purpose Supply Systems	A									U
	Total Supply Support Equipment			584							

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Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Total PB Requests* with CR Adj Base + OCO + Emergency** Quantity	Cost	FY 2018 Less Enacted DIV B P.L.115-96*** MDDE + Ship Repairs Quantity	Cost	FY 2018 Remaining Req with CR Adj Base + OCO + Emergency Quantity	Cost	S e c
Budget Activity 05: Civil Engineering Support Equip									
Civil Engineering Support Equipment									
108	Passenger Carrying Vehicles	A		5,299			5,299		U
109	General Purpose Trucks	A		3,442			3,442		U
110	Construction & Maintenance Equip	A		34,970			34,970		U
111	Fire Fighting Equipment	A		4,845			4,845		U
112	Tactical Vehicles	B		22,035			22,035		U
113	Amphibious Equipment	A		12,162			12,162		U
114	Pollution Control Equipment	A		2,748			2,748		U
115	Items Under \$5 Million	A		18,084			18,084		U
116	Physical Security Vehicles	A		1,170			1,170		U
Total Civil Engineering Support Equip				104,755			104,755		
Budget Activity 06: Supply Support Equipment									
Supply Support Equipment									
117	Supply Equipment	A		21,961			21,961		U
118	First Destination Transportation	A		5,992			5,992		U
119	Special Purpose Supply Systems	A		482,916			482,916		U
Total Supply Support Equipment				510,869			510,869		

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Department of the Navy
FY 2019 President's Budget
Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2019 Base Quantity	Cost	FY 2019 OCO Quantity	Cost	FY 2019 Total Quantity	Cost	S e c
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Budget Activity 05: Civil Engineering Support Equip -----									
Civil Engineering Support Equipment									
108	Passenger Carrying Vehicles	A	4,867		170		5,037		U
109	General Purpose Trucks	A	2,674		400		3,074		U
110	Construction & Maintenance Equip	A	20,994				20,994		U
111	Fire Fighting Equipment	A	17,189		770		17,959		U
112	Tactical Vehicles	B	19,916		7,298		27,214		U
113	Amphibious Equipment	A	7,400				7,400		U
114	Pollution Control Equipment	A	2,713				2,713		U
115	Items Under \$5 Million	A	35,540				35,540		U
116	Physical Security Vehicles	A	1,155				1,155		U
			-----		-----		-----		
	Total Civil Engineering Support Equip		112,448		8,638		121,086		
Budget Activity 06: Supply Support Equipment -----									
Supply Support Equipment									
117	Supply Equipment	A	18,786				18,786		U
118	First Destination Transportation	A	5,375		500		5,875		U
119	Special Purpose Supply Systems	A	580,371				580,371		U
			-----		-----		-----		
	Total Supply Support Equipment		604,532		500		605,032		

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Department of the Navy
FY 2019 President's Budget
Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 (Base + OCO) Quantity Cost	FY 2018 PB Request with CR Adj Base Quantity Cost	FY 2018 Total PB Requests* with CR Adj Base Quantity Cost	FY 2018 PB Request with CR Adj OCO Quantity Cost	S e c
-----	-----	-----	-----	-----	-----	-----	-
Budget Activity 07: Personnel & Command Support Equip -----							
Training Devices							
120	Training Support Equipment	A					U
121	Training and Education Equipment	A	6,347	25,624	25,624		U
Command Support Equipment							
122	Command Support Equipment	A	44,666	59,076	59,076	21,650	U
123	Medical Support Equipment	A	11,959	4,383	4,383		U
125	Naval MIP Support Equipment	A	1,925	2,030	2,030		U
126	Operating Forces Support Equipment	A	3,822	7,500	7,500	15,800	U
127	C4ISR Equipment	A	9,073	4,010	4,010		U
128	Environmental Support Equipment	A	19,439	23,644	23,644	1,000	U
129	Physical Security Equipment	A	109,825	101,982	101,982	15,890	U
130	Enterprise Information Technology	A	88,799	19,789	19,789		U
Other							
133	Next Generation Enterprise Service	A	84,176	104,584	104,584		U
999	Classified Programs		11,575	23,707	23,707	2,200	U
Total Personnel & Command Support Equip			391,606	376,329	376,329	56,540	

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Department of the Navy
FY 2019 President's Budget
Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Total PB Requests+ with CR Adj OCO Quantity	Cost	FY 2018 Emergency Requests** Emergency Quantity	Cost	FY 2018 Less Enacted Div B P.L.115-96*** MDDE + Ship Repairs Quantity	Cost	FY 2018 Remaining Req Emergency Quantity	Cost	S e c
-----	-----	-----	-----	----	-----	----	-----	----	-----	----	-
Budget Activity 07: Personnel & Command Support Equip -----											
Training Devices											
120	Training Support Equipment	A									U
121	Training and Education Equipment	A									U
Command Support Equipment											
122	Command Support Equipment	A		21,650		7,650			7,650		U
123	Medical Support Equipment	A									U
125	Naval MIP Support Equipment	A									U
126	Operating Forces Support Equipment	A		15,800							U
127	C4ISR Equipment	A									U
128	Environmental Support Equipment	A		1,000							U
129	Physical Security Equipment	A		15,890		3,100			3,100		U
130	Enterprise Information Technology	A									U
Other											
133	Next Generation Enterprise Service	A									U
999	Classified Programs			2,200							U
Total Personnel & Command Support Equip				56,540		10,750			10,750		

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Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Total PB Requests* with CR Adj Base + OCO + Emergency** Quantity Cost	FY 2018 Less Enacted DIV B P.L.115-96*** MDDE + Ship Repairs Quantity Cost	FY 2018 Remaining Req with CR Adj Base + OCO + Emergency Quantity Cost	S e c
-----	-----	-----	-----	-----	-----	-
Budget Activity 07: Personnel & Command Support Equip -----						
Training Devices						
120	Training Support Equipment	A				U
121	Training and Education Equipment	A	25,624		25,624	U
Command Support Equipment						
122	Command Support Equipment	A	88,376		88,376	U
123	Medical Support Equipment	A	4,383		4,383	U
125	Naval MIP Support Equipment	A	2,030		2,030	U
126	Operating Forces Support Equipment	A	23,300		23,300	U
127	C4ISR Equipment	A	4,010		4,010	U
128	Environmental Support Equipment	A	24,644		24,644	U
129	Physical Security Equipment	A	120,972		120,972	U
130	Enterprise Information Technology	A	19,789		19,789	U
Other						
133	Next Generation Enterprise Service	A	104,584		104,584	U
999	Classified Programs		25,907		25,907	U
			-----	-----	-----	
Total Personnel & Command Support Equip			443,619		443,619	

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Department of the Navy
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Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2019 Base Quantity	Cost	FY 2019 OCO Quantity	Cost	FY 2019 Total Quantity	Cost	S e c
----	-----	-----	-----	----	-----	----	-----	----	-
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		24,283			24,283		U
Command Support Equipment									
122	Command Support Equipment	A		66,681			66,681		U
123	Medical Support Equipment	A		3,352		6,500	9,852		U
125	Naval MIP Support Equipment	A		1,984			1,984		U
126	Operating Forces Support Equipment	A		15,131			15,131		U
127	C4ISR Equipment	A		3,576			3,576		U
128	Environmental Support Equipment	A		31,902		2,200	34,102		U
129	Physical Security Equipment	A		175,436		19,389	194,825		U
130	Enterprise Information Technology	A		25,393			25,393		U
Other									
133	Next Generation Enterprise Service	A		96,269			96,269		U
999	Classified Programs			15,681		4,800	20,481		U
			-----		-----		-----		
Total Personnel & Command Support Equip				463,088		32,889	495,977		

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Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 (Base + OCO) Quantity Cost	FY 2018 PB Request with CR Adj Base Quantity Cost	FY 2018 Total PB Requests* with CR Adj Base Quantity Cost	FY 2018 PB Request with CR Adj OCO Quantity Cost	S e c
----	-----	-----	-----	-----	-----	-----	-
Budget Activity 08: Spares and Repair Parts							

Spares and Repair Parts							
134	Spares and Repair Parts	A	199,627	278,565	278,565	1,178	U
			-----	-----	-----	-----	
	Total Spares and Repair Parts		199,627	278,565	278,565	1,178	
Budget Activity 20: Undistributed							

Undistributed							
135	Adj to Match Continuing Resolution	A		-1,692,780	-1,692,780	31,024	U
			-----	-----	-----	-----	
	Total Undistributed			-1,692,780	-1,692,780	31,024	
			-----	-----	-----	-----	
	Total Other Procurement, Navy		6,651,966	6,585,009	6,210,084	251,083	

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(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Total PB Requests+ with CR Adj OCO Quantity	Cost	FY 2018 Emergency Requests** Emergency Quantity	Cost	FY 2018 Less Enacted Div B P.L.115-96*** MDDE + Ship Repairs Quantity	Cost	FY 2018 Remaining Req Emergency Quantity	Cost	S e c
Budget Activity 08: Spares and Repair Parts											

Spares and Repair Parts											
134	Spares and Repair Parts	A	1,178								U
			-----		-----		-----		-----		
Total Spares and Repair Parts			1,178								
Budget Activity 20: Undistributed											

Undistributed											
135	Adj to Match Continuing Resolution	A	-476								U
			-----		-----		-----		-----		
Total Undistributed			-476								
			-----		-----		-----		-----		
Total Other Procurement, Navy			251,083		25,750				25,750		

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(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Total PB Requests* with CR Adj Base + OCO + Emergency** Quantity Cost	FY 2018 Less Enacted DIV B P.L.115-96*** MDDE + Ship Repairs Quantity Cost	FY 2018 Remaining Req with CR Adj Base + OCO + Emergency Quantity Cost	S e c -
Budget Activity 08: Spares and Repair Parts						

Spares and Repair Parts						
134	Spares and Repair Parts	A	279,743		279,743	U
			-----	-----	-----	
	Total Spares and Repair Parts		279,743		279,743	
Budget Activity 20: Undistributed						

Undistributed						
135	Adj to Match Continuing Resolution	A	-1,719,006		-1,719,006	U
			-----	-----	-----	
	Total Undistributed		-1,719,006		-1,719,006	
			-----	-----	-----	
	Total Other Procurement, Navy		6,461,167		6,461,167	

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Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2019 Base Quantity	Cost	FY 2019 OCO Quantity	Cost	FY 2019 Total Quantity	Cost	S e c
----	-----	-----	-----	----	-----	----	-----	----	-
Budget Activity 08: Spares and Repair Parts									

Spares and Repair Parts									
134	Spares and Repair Parts	A	326,838				326,838		U
			-----		-----		-----		
	Total Spares and Repair Parts		326,838				326,838		
Budget Activity 20: Undistributed									

Undistributed									
135	Adj to Match Continuing Resolution	A							U
			-----		-----		-----		
	Total Undistributed								
			-----		-----		-----		
	Total Other Procurement, Navy		9,414,355		187,173		9,601,528		

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25	01	10	1010	Reactor Power Units.....	Volume 1 - 609
26	01	10	1020	Reactor Components.....	Volume 1 - 613
27	01	11	1130	Diving and Salvage Equipment.....	Volume 1 - 617
28	01	12	1210	Standard Boats.....	Volume 1 - 635
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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 1: Ship Propulsion Equipment							P-1 Line Item Number / Title: 0131 / Surface Power 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	15.514	41.910	19.700	0.000	19.700	18.630	41.339	9.469	9.656	36.829	193.047
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	15.514	41.910	19.700	0.000	19.700	18.630	41.339	9.469	9.656	36.829	193.047
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	15.514	41.910	19.700	0.000	19.700	18.630	41.339	9.469	9.656	36.829	193.047
<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 2019 funding request was reduced by \$3.000 million to account for the availability of prior year execution balances.

Surface Power Equipment budget line provides life-cycle support for the following Marine Gas Turbine systems:

The General Electric LM2500 Marine Gas Turbine provides main propulsion for the Navy's surface combatants including the CG 47 TICONDEROGA Class, DDG 51 ARLEIGH BURKE Class, and LCS-2 (Austal) Class. The LM2500 is composed of two major sub-assemblies: the gas generator and power turbine sections. It is coupled to the ship drive-train by a high speed coupling shaft. The LM2500+ Marine Gas Turbine and its associated Engineering Control Systems provide main propulsion power for the Navy's amphibious assault ships including the LHD-8 USS MAKIN ISLAND, LHA-6 USS AMERICA and LHA-7 USS TRIPOLI. The LM2500+ is composed of two major sub-assemblies: the gas generator and power turbine sections. It is coupled to the ship drive-train by a high speed coupling shaft. The control system for both engines provides for both local and remote engine operations.

The Rolls Royce (Allison) 501-K Series Gas Turbines are used to drive electrical generators in Ship Service Gas Turbine Generators (SSGTG). The 501-K17 is used on the CG-47 Class ships. The 501-K34 is an upgraded version used on the DDG-51 Class ships and is not interchangeable with the 501-K17. The MT5S is a higher-power derivative of the 501-K engine family (utilizing Rolls Royce's new "Marine Trent" or "MT" naming convention vice the older "501-K" naming convention) used for auxiliary electrical generation on DDG-1000 class ships; the MT5S is not interchangeable with the 501-K17 or 501-K34. The Rolls Royce MT-30 is used on LCS-1 (Lockheed) Class for main propulsion and DDG 1000 for electrical generation. Rolls Royce 250-KS4 is used as a starter gas turbine for the 501-K34 on DDG 79 and follow. The Rolls Royce MT7 gas turbine is used for both lift and propulsion fan power on the next generation of LCAC landing craft.

DFC procurement quantities are based upon the DDG modernization schedule and quantities are procured one year in advance of the scheduled availabilities due to long material lead times.

The Surface Power Equipment budget line may also be used to procure spare waterborne shafting (propeller shafts and stern tube shafts) and controllable pitch propeller (CPP) system end items such as propeller blades, hubs and oil distribution (OD) boxes used on DDG 51 class ships.

The budget funds the following:

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 1: Ship Propulsion Equipment		P-1 Line Item Number / Title: 0131 / Surface Power 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 / PE009 GE Readiness Improvement Upgrade Kits]: PE009 - MODIFICATION KIT PROGRAM: This cost element procures modification kits listed below for the GE Gas Turbine Engine. These modifications increase reliability and fleet readiness through component upgrades which improves the Mean Time Between Failure (MTBF). The modification kits are procured based on historical usage rates, re-packaged into individual kits, and sent to either a depot to be installed during engine overhauls or to Regional Maintenance Centers for installation. Procurement quantities are not shown because these funds are used to procure a variety of modification kits, with specific kit quantities and prices varying from one year to the next. The kits included in the cost code are as follows: --Accelerometers (Vibration Monitor) -- Compressor Rear Frame Mid-flange Fastener installation -- C-Sump Lubrication Supply Line -- Power Turbine Upgraded Speed Sensor -- Improved Drain Shutoff Valve -- Turbine Mid-Frame Modification -- 7B Piping Modification -- 5-Element to 6-Element Pump Conversion -- T5.4 Flexible Thermo Harness -- Mid Flange Fastener [P40A / PE010 Stock Rotating Spares]: PE010 - GAS GENERATOR: This cost element procures the LM2500 and LM2500+ single shank propulsion gas turbines to support surface combatant and amphibious assault class surface ships. The programs projected FY-18 in-service population of single shank propulsion gas turbine engines is estimated to be 382 due to new construction. Breakdown of ship class spare procurement is listed below. The procurement of these engines includes all required shipping/storage containers. DDG LM2500 Single Shank Based on experience with 35 years of usage demand data on the LM2500 Engine and IAW 10 USC Sec. 2308, DFAR subpart 207.70 and DoDI 3110.06, a total of 36 spares are required to support the fleet requirements. Current onhand is 28 with a requirement for eight (8) additional gas generator units to be procured IAW projected class population in FY21. LCS 2 LM2500 Single Shank. Based on experience with 35 years of usage demand data on the LM2500 Engine and IAW 10 USC Sec. 2308, DFAR subpart 207.70 and DoDI 3110.06, a total of 3 spares are required to support the fleet requirements. Current onhand is 2 with the requirement for one (1) additional gas generator unit to be procured IAW projected class population in FY21. LHD8/LHA6/LHA7 LM2500+ Single Shank Gas Generator Assembly (SST GGA) and Power Turbine Assembly (PTA) Based on experience with 35 years of usage demand data on the LM2500 Engine and IAW 10 USC Sec. 2308, DFAR subpart 207.70 and DoDI 3110.06, a total of 2 spares are required to support the fleet requirements. Current onhand is 1, which leaves the requirement for one (1) additional gas generator to be procured IAW projected class population. The program has budgeted to procure one (1) Gas Generator Assembly in FY18 to meet the baseline requirement. This engine represents a significantly different configuration than the standard LM2500 Single Shank Engine procured in previous fiscal years. Moreover, the PTA on the LM2500+ is also of significantly different configuration than the PTA on the LM2500. LM2500 Hot Section Kits Are procured as required from the below list per quarterly failure analysis and maintained to replace High Pressure Turbine (HPT) components beyond repairable limits. Shortages of replacement blades increase engine repair turn-around time (RTAT) during engine refurbishment/repair as a result of material shortages. Procurement quantities are a result of procuring various kits of various costs. The kits included in the cost code are as follows: --HPT Shrouds --HPT Seal Assembly --HPT Blades --HPT Nozzles		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 1: Ship Propulsion Equipment		P-1 Line Item Number / Title: 0131 / Surface Power 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		
--Compressor Blades		
[P40A / PE014 Special Support Equipage]: PE014 Special Support Equipage - This cost element procures Special Support Equipment to allow for increased I-level (intermediate level) repair capability, thereby reducing the number of engine change outs required and stabilizing or reducing the cost to overhaul engines at the depot. FY18 funding is being provided to procure support tooling for the LM2500+ Gas Turbine as part of Strategic Lay-Down 15 (SLD15). One of the purposes of SLD15 is to put I-level support in place for the LHA-6 LM2500+ main propulsion engines, which is being homeported in Sasebo, Japan. No installation cost is associated with this cost element.		
[P40A / PE015 LM2500 DIGITAL FUEL CONTROL]: PE015 - LM2500 DIGITAL FUEL CONTROL (DFC)- This cost element procures the Digital Fuel Control (DFC) shipsets, ancillary equipment and install material to support the CG/DDG modernization schedules. Procurement and installations are budgeted to correspond with CNO ship availabilities. One DFC kit is required to update each of the four LM2500 engines, which makes one DFC shipset. The DFC upgrade is a mandatory portion of DDG-51 modernizations; the modernized machinery control system (MCS)is incapable of interfacing with LM2500 engines not equipped with DFC. The DFC is the most significant change to the LM2500 engine since its inception into the USN that addresses obsolete components which accounted for approximately 40% of all engine failures. In summary, this modification is estimated to be 75% more reliable than the old system. This upgrade also replaces the Hydro-mechanical main fuel control (MFC) system, which was designed for aircraft, with a DFC system designed for a military marine environment. This modification increases engine reliability, decreases periodic maintenance, enhances operational functions, and provides an automatic stall detection and shutdown capability.		
PE6IN - INSTALLATION FOR DIGITAL FUEL CONTROL (DFC)- This cost element funds the installation of Cost element PE015, LM2500 Digital Fuel Control (DFC) shipsets, as part of the CG/DDG HM&E modernization program. This includes pre-assembly at NSWCPD (Philadelphia), shipping to installation location, shipboard installation, training, post installation operational testing and associated travel cost.		
[P40A - 2 / PE001 STOCK ROTATING SPARES]: PE001 - STOCK ROTATING SPARES This cost element procures the MT-30 for DDG1000 Zumwalt Class and Littoral Combat Ship (LCS) Independence Variant, MT-5 series gas turbines for the DDG 1000 Zumwalt Class and DDG-51 Flight III program, the 250-KS4 SSGTG starter engines for the DDG 79 and follow, and the 501-K34 gas turbines DDG 51 class ships. The procurement of these engines includes all required shipping/storage containers and necessary hardware to allow for installation of the MT30 gas turbine into DDG1000 or LCS5AF hull types.		
MT-30 Gas Turbines Based on experience with similar turbines and IAW 10 USC Sec. 2308, DFAR subpart 207.70 and DoDI 3110.06, a total of 6 spares are required to support the fleet. Current MT-30 spares on-hand is two (2) with four (4) budgeted for procurement in FY18-FY21. Per OPNAV N96 direction in June 2017, the Surface Power Equipment program (BLI: 0131) will procure one (1) MT-30 spare in FY18 and one (1) in FY21, while the LCS program will procure one (1) MT-30 spare in FY19 and one (1) in FY20. The projected FY-23 and beyond in-service population of MT-30 gas turbine engines is thirty-six (36) due to new construction.		
MT-5 Gas Turbines Based on experience with similar turbines and IAW 10 USC Sec. 2308, DFAR subpart 207.70 and DoDI 3110.06, a total of 4 spares are required to support the fleet. Current MT-5 spares on-hand is zero (0) with two (2) budgeted in FY18-FY19. The projected FY-21 and beyond in-service population of MT-5S gas turbine engines is six (6) due to new construction of DDG1000 and thirty (30) of the higher efficiency MT5S-HE+ units for DDG-51 Flight III. Earlier budget exhibits called for procurement of (1) MT-5 in FY19 and (1) in FY20. The current budget calls for procurement of one (1) MT-5 in FY18 and one (1) in FY19.		
250-KS4 SSGTG Starter Engines Based on experience with similar turbines and IAW 10 USC Sec. 2308, DFAR subpart 207.70 and DoDI 3110.06, a total of 12 spares are required to support the fleet requirements. Current spares on-hand is twelve (12) which achieves the baseline sparing requirement. The projected FY-18 in-service population of starter engines is 103 due to new construction, but would be 169 if Flight IIA and Flight III were included. Operation Tomodachi has resulted in the radiological contamination of twelve (12) 250-KS4 Marine Gas Turbines, which created an unplanned requirement to replace the twelve (12) affected engines beginning in FY13. Currently, the program has budgeted for six (6) replacements through FY23 with four (4) already procured, leaving a requirement of two (2) additional replacement assets to be procured.		
501-K34 Gas Turbines		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018	
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 1: Ship Propulsion Equipment		P-1 Line Item Number / Title: 0131 / Surface Power 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			
Based on experience with similar turbines and IAW 10 USC Sec. 2308, DFAR subpart 207.70 and DoDI 3110.06, a total of 26 spares are required to support the fleet requirements. Current 501-K34 spares on-hand is 22, which leaves a requirement of 4 additional gas generator units to be procured. The current budget calls for procurement of one (1) 501-K34 per fiscal year between FY19-22. The projected FY23 in-service population of gas turbine engines is 222 due to new construction. [P40A - 2 / PE007 MODIFICATION PROGRAM]: PE007 - MODIFICATION PROGRAM This cost element procures modification kits listed below for the Rolls Royce Marine Gas Turbines (MGT). Analysis of Rolls Royce MGT engineering performance data, metrics, the SEA 21 Top Tech Issues and the component improvement program has identified necessary improvements to correct Rolls Royce MGT deficiencies. The modifications addresses the Fleet's top maintenance and reliability issues by reducing failure rates of system components, and improve Rolls Royce MGT readiness. The modification kits are packaged and shipped to the ship for installation during schedule CNO availability by a team of NSWCPD (Philadelphia) and Alteration Installation Team (AIT) personnel. Procurement quantities are not shown because these funds are used to procure a variety of modification kits, with specific kit quantities and prices varying from one year to the next. The kits included in the cost code are as follows: --FADC upgrade conversion --MT30 variant conversion kits [P40A - 3 / PE830 PRODUCTION ENGINEERING]: PE830 PRODUCTION ENGINEERING The review and approval of any production contract technical documentation, or the separate development of this documentation to include: - Technical Manuals - Signal Flow Diagrams - PMS - Level III Production Drawings - Provisioning Technical Documentation (PTD) - Program Support Data - Allowance Parts Lists (APL's) - Engineering in support of final design reviews. This includes efforts associated with tracking and updating Navy Data Environment (NDE), Marine Gas Turbine Information System (MGTIS) and Weblog to reflect completed installations and ensure consistent documentation for engine configuration management.			

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy								Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 1: Ship Propulsion Equipment						P-1 Line Item Number / Title: 0131 / Surface Power 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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	General Electric Gas Turbine	P-5a			- / 0.000	- / 1.354	- / 6.881	- / 0.166	- / -	- / 0.166
P-40a	Rolls Royce Gas Turbine	P-5a			- / 0.000	- / 4.315	- / 24.779	- / 8.804	- / -	- / 8.804
P-40a	PE830 PRODUCTION ENGINEERING				- / 0.000	- / 0.346	- / 0.349	- / 0.349	- / -	- / 0.349
P-3a	1 / PE015 - LM2500 GAS TURBINE DIGITAL FUEL CONTROL (TBD)				- / 0.000	- / 9.499	- / 9.901	- / 10.381	- / 0.000	- / 10.381
P-40	Total Gross/Weapon System Cost				- / 0.000	- / 15.514	- / 41.910	- / 19.700	- / 0.000	- / 19.700
Exhibits Schedule					FY 2020	FY 2021	FY 2022	FY 2023	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	General Electric Gas Turbine	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-40a	Rolls Royce Gas Turbine	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-40a	PE830 PRODUCTION ENGINEERING				- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / PE015 - LM2500 GAS TURBINE DIGITAL FUEL CONTROL (TBD)				- / 10.888	- / 7.064	- / 2.832	- / 2.842	- / 8.390	- / 61.797
P-40	Total Gross/Weapon System Cost				- / 18.630	- / 41.339	- / 9.469	- / 9.656	- / 36.829	- / 193.047
*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 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 1							P-1 Line Item Number / Title: 0131 / Surface Power Equipment							Aggregated Items Title: General Electric Gas Turbine						
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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) PE009 GE Readiness Improvement Upgrade Kits																				
1.1) MODIFICATION KIT PROGRAM	A		-	-	-	-	-	0.490	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) PE009 GE Readiness Improvement Upgrade Kits			-	-	0.000	-	-	0.490	-	-	-	-	-	-	-	-	-	-	-	-
2) PE010 Stock Rotating Spares ⁽¹⁾																				
2.2) LHD/LHA6 LM2500+ ^{(2)(t)}	A		-	-	-	-	-	-	5,329K	1	5.329	-	-	-	-	-	-	-	-	-
Subtotal: 2) PE010 Stock Rotating Spares			-	-	0.000	-	-	-	-	-	5.329	-	-	-	-	-	-	-	-	-
3) PE014 Special Support Equipage ⁽³⁾																				
3.1) Special Support Equipage	A		-	-	-	-	-	0.800	-	-	1.389	-	-	-	-	-	-	-	-	-
Subtotal: 3) PE014 Special Support Equipage			-	-	0.000	-	-	0.800	-	-	1.389	-	-	-	-	-	-	-	-	-
4) PE015 LM2500 DIGITAL FUEL CONTROL																				
4.1) ANCILLARY EQUIPMENT/ INSTALLATION MATERIALS	A		-	-	-	-	-	0.064	-	-	0.163	-	-	0.166	-	-	-	-	-	0.166
Subtotal: 4) PE015 LM2500 DIGITAL FUEL CONTROL			-	-	0.000	-	-	0.064	-	-	0.163	-	-	0.166	-	-	-	-	-	0.166
Total			-	-	0.000	-	-	1.354	-	-	6.881	-	-	0.166	-	-	-	-	-	0.166
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
^(t) indicates the presence of a P-5a																				
Footnotes:																				
⁽¹⁾ The cost estimates for all engine procurements between FY18-FY21 are based on the Rough Order of Magnitude pricing provided by General Electric. The program will update the actual costs during the FY the contract is awarded.																				
⁽²⁾ Pricing for LM2500+ Gas Generator and Power Turbine Assembly based upon Rough Order of Magnitude (ROM) letter from General Electric dated August 11, 2016. Reference GE-DLA BOA SPRATA1-12-G-0006																				
⁽³⁾ This cost element procures Special Support Equipment to allow for increased I-level (intermediate level) repair capability, thereby reducing the number of engine change outs required and stabilizing or reducing the cost to overhaul engines at the depot. FY18 funding is being provided to procure support tooling for the LM2500+ Gas Turbine as part of Strategic Lay-Down 15 (SLD15). One of the purposes of SLD15 is to put I-level support in place for the LHA-6 LM2500+ main propulsion engines, which is being homeported in Sasebo, Japan. No installation cost is associated with this cost element. If the program is unable to procure these assets, the Program will have no way to provide I-level support for the LM2500+ main propulsion engines for LHA-6, which will drive more frequent engine change outs.																				

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Exhibit P-5a, Procurement History and Planning: PB 2019 Navy								Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 1				P-1 Line Item Number / Title: 0131 / Surface Power Equipment				Aggregated Items: General Electric Gas Turbine				
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
2) PE010 Stock Rotating Spares												
2.2) LHD/LHA6 LM2500+ ⁽²⁾		2018	General Electric Co. / Cincinnati, OH	SS / FFP	NAVSUP WSS, Mechanicsburg PA	Jun 2018	Feb 2021	1	5,329K	Y		Dec 2017

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 1						P-1 Line Item Number / Title: 0131 / Surface Power Equipment									Aggregated Items Title: Rolls Royce Gas Turbine					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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) PE001 STOCK ROTATING SPARES																				
1.1) 501-K34 ^{(4)(†)}	A		-	-	-	-	-	-	-	-	-	2,950K	1	2.950	-	-	-	2,950K	1	2.950
1.2) 250-KS4 ^(†)	A		-	-	-	474,000.00	1	0.474	493,000.00	1	0.493	528,000.00	1	0.528	-	-	-	528,000.00	1	0.528
1.3) MT-30 ^(†)	A		-	-	-	-	-	-	19,001K	1	19.001	-	-	-	-	-	-	-	-	-
1.4) MT-5 ^(†)	A		-	-	-	-	-	-	4,128K	1	4.128	4,334K	1	4.334	-	-	-	4,334K	1	4.334
Subtotal: 1) PE001 STOCK ROTATING SPARES			-	-	0.000	-	-	0.474	-	-	23.622	-	-	7.812	-	-	-	-	-	7.812
2) PE007 MODIFICATION PROGRAM																				
2.1) PROCURE MODIFICATION KITS ⁽⁵⁾	A		-	-	-	-	-	2.810	-	-	0.900	-	-	0.735	-	-	-	-	-	0.735
2.2) INSTALLATION FOR MODIFICATION KITS	A		-	-	-	-	-	1.031	-	-	0.257	-	-	0.257	-	-	-	-	-	0.257
Subtotal: 2) PE007 MODIFICATION PROGRAM			-	-	0.000	-	-	3.841	-	-	1.157	-	-	0.992	-	-	-	-	-	0.992
Total			-	-	0.000	-	-	4.315	-	-	24.779	-	-	8.804	-	-	-	-	-	8.804
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: (4) The cost estimates for the 501-K34 engine procurements between FY19-FY23 are based on the Rough Order of Magnitude pricing provided by Rolls Royce Naval Marine. The program will update the actual costs during the FY the contract is awarded. (5) PE007 MODIFICATION PROGRAM: The modification program is designed to procure and install hardware to affect improvements in reliability and maintainability aboard CG-47 and DDG-51 class Ship Service Gas Turbine Generator (SSGTG) units. Each hull has a total of three (3) SSGTG units installed. Each SSGTG is controlled by a Full Authority Digital Control (FADC). CG-47 class uses the 501-K17 and DDG-51 class uses the 501-K34. There are currently three variants of the 501-K34 SSGTG: AG9130, AG9140HF and AG9140RF. The AG9140RF also includes the Remote Independent Mechanical Starting System (RIMSS) consisting of the 250-KS4 engine. The quantity of modification kits procured corresponds to the number of SSGTG units to be upgraded. The type and scope of each modification required will vary from one ship to the next. The number and type of kits installed in any given Fiscal Year (FY) varies depending upon ship availability schedules during that FY. The planned procurement of modification kits for the FY2019 budget includes FADC conversion upgrade kits only, specifically SCD 22119 (HMI tech refresh) and SCD 22122 (Micronet upgrade). Both SCDs are part of 'FADC Obsolescence' but can be installed independently of each other.																				

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Exhibit P-5a, Procurement History and Planning: PB 2019 Navy									Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 1			P-1 Line Item Number / Title: 0131 / Surface Power Equipment						Aggregated Items: Rolls Royce Gas Turbine				
Item Number / Title [DODIC]	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date	
1) PE001 STOCK ROTATING SPARES													
1.1) 501-K34 ⁽⁴⁾		2019	ROLLS ROYCE / WALPOLE, MA	SS / FFP	NAVSEA, Washington DC	Apr 2019	Oct 2020	1	2,950K	N		Dec 2018	
1.2) 250-KS4		2017	ROLLS ROYCE / WALEPOLE, MA	SS / FFP	NAVSUP WSS, Mechanicsburg PA	Oct 2017	Apr 2019	1	474,000.00	Y		Dec 2016	
1.2) 250-KS4		2018	ROLLS ROYCE / WALEPOLE, MA	SS / FFP	NAVSUP WSS, Mechanicsburg PA	Aug 2018	Feb 2020	1	493,000.00	Y		Dec 2017	
1.2) 250-KS4		2019	ROLLS ROYCE / WALEPOLE, MA	SS / FFP	NAVSUP WSS, Mechanicsburg, PA	Aug 2019	Feb 2021	1	528,000.00	Y		Dec 2018	
1.3) MT-30		2018	ROLLS ROYCE / WALPOLE, MA	SS / FFP	NAVSEA, Washington DC	Jun 2018	Dec 2020	1	19,001K	Y		Dec 2017	
1.4) MT-5		2018	ROLLS ROYCE / WALEPOLE, MA	SS / FFP	NAVSEA, Washington DC	May 2018	Nov 2020	1	4,128K	Y		Dec 2017	
1.4) MT-5		2019	ROLLS ROYCE / WALEPOLE, MA	SS / FFP	NAVSEA, Washington DC	May 2019	Nov 2021	1	4,334K	Y		Dec 2018	

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy															Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 1								P-1 Line Item Number / Title: 0131 / Surface Power Equipment							Aggregated Items Title: PE830 PRODUCTION ENGINEERING (6)				

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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) Production Engineering																				
1.1) Production Engineering	A		-	-	-	-	-	0.346	-	-	0.349	-	-	0.349	-	-	-	-	-	0.349
Subtotal: 1) Production Engineering			-	-	0.000	-	-	0.346	-	-	0.349	-	-	0.349	-	-	-	-	-	0.349
Total			-	-	0.000	-	-	0.346	-	-	0.349	-	-	0.349	-	-	-	-	-	0.349

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

Footnotes:

⁽⁶⁾ The review and approval of any production contract technical documentation, or the separate development of this documentation to include: - Technical Manuals - Signal Flow Diagrams - PMS - Level III Production Drawings - Provisioning Technical Documentation (PTD) - Program Support Data - Allowance Parts Lists (APL's) - Engineering in support of final design reviews. This includes efforts associated with tracking and updating Navy Data Environment (NDE), Marine Gas Turbine Information System (MGTIS) and Weblog to reflect completed installations and ensure consistent documentation for engine configuration management.

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 1					P-1 Line Item Number / Title: 0131 / Surface Power Equipment					Modification Number / Title: 1 / PE015 - LM2500 GAS TURBINE DIGITAL FUEL CONTROL		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	9.499	9.901	10.381	0.000	10.381	10.888	7.064	2.832	2.842	8.390	61.797
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	9.499	9.901	10.381	0.000	10.381	10.888	7.064	2.832	2.842	8.390	61.797
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	9.499	9.901	10.381	0.000	10.381	10.888	7.064	2.832	2.842	8.390	61.797
<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: PE015 - LM2500 DIGITAL FUEL CONTROL (DFC) - This cost code procures the Digital Fuel Control (DFC) shipsets, ancillary equipment and install material to support the CG/DDG modernization schedules. Procurement and installations are budgeted to correspond with CNO ship availabilities. One DFC kit is required to update each of the four LM2500 engines, which makes one DFC shipset. The DFC upgrade is a mandatory portion of DDG-51 modernizations; the modernized machinery control system (MCS) is incapable of interfacing with LM2500 engines not equipped with DFC. The DFC is the most significant change to the LM2500 engine since its inception into the USN that addresses obsolete components which accounted for approximately 40% of all engine failures. In summary, this modification is estimated to be 75% more reliable than the old system. This upgrade also replaces the Hydro-mechanical main fuel control (MFC) system, which was designed for aircraft, with a DFC system designed for a military marine environment. This modification increases engine reliability, decreases periodic maintenance, enhances operational functions, and provides an automatic stall detection and shutdown capability. PE6IN - INSTALLATION FOR DIGITAL FUEL CONTROL (DFC)- This cost element funds the installation of Cost element PE015, LM2500 Digital Fuel Control (DFC) shipsets, as part of the CG/DDG HM&E modernization program. This includes pre-assembly at NSWCPD (Philadelphia), shipping to installation location, shipboard installation, training, post installation operational testing and associated travel cost.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 1					P-1 Line Item Number / Title: 0131 / Surface Power Equipment					Modification Number / Title: 1 / PE015 - LM2500 GAS TURBINE DIGITAL FUEL CONTROL			
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> PE015 - LM2500 GAS TURBINE DIGITAL FUEL CONTROL													
B Kits													
Recurring													
1.1.1) PE015 DIGITAL FUEL CONTROL SHIPSET/ PE6IN INSTALLATION FOR DFC - NonOrganic ⁽⁷⁾	- / -	5 / 8.954	5 / 9.400	5 / 9.877	- / -	5 / 9.877	5 / 10.372	3 / 6.536	1 / 2.296	1 / 2.295	3 / 7.450	28 / 57.180	
<i>Subtotal: Recurring</i>	<i>- / 0.000</i>	<i>- / 8.954</i>	<i>- / 9.400</i>	<i>- / 9.877</i>	<i>- / -</i>	<i>- / 9.877</i>	<i>- / 10.372</i>	<i>- / 6.536</i>	<i>- / 2.296</i>	<i>- / 2.295</i>	<i>- / 7.450</i>	<i>- / 57.180</i>	
<i>Subtotal: PE015 - LM2500 GAS TURBINE DIGITAL FUEL CONTROL</i>	<i>- / -</i>	<i>5 / 8.954</i>	<i>5 / 9.400</i>	<i>5 / 9.877</i>	<i>- / -</i>	<i>5 / 9.877</i>	<i>5 / 10.372</i>	<i>3 / 6.536</i>	<i>1 / 2.296</i>	<i>1 / 2.295</i>	<i>3 / 7.450</i>	<i>28 / 57.180</i>	
<i>Subtotal: Procurement, All Modification Items</i>	<i>- / 0.000</i>	<i>- / 8.954</i>	<i>- / 9.400</i>	<i>- / 9.877</i>	<i>- / -</i>	<i>- / 9.877</i>	<i>- / 10.372</i>	<i>- / 6.536</i>	<i>- / 2.296</i>	<i>- / 2.295</i>	<i>- / 7.450</i>	<i>- / 57.180</i>	
Installation													
<i>Modification Item 1 of 1:</i> PE015 - LM2500 GAS TURBINE DIGITAL FUEL CONTROL	<i>- / 0.000</i>	<i>- / 0.545</i>	<i>- / 0.501</i>	<i>- / 0.504</i>	<i>- / 0.000</i>	<i>- / 0.504</i>	<i>- / 0.516</i>	<i>- / 0.528</i>	<i>- / 0.536</i>	<i>- / 0.547</i>	<i>- / 0.940</i>	<i>- / 4.617</i>	
<i>Subtotal: Installation</i>	<i>- / 0.000</i>	<i>- / 0.545</i>	<i>- / 0.501</i>	<i>- / 0.504</i>	<i>- / -</i>	<i>- / 0.504</i>	<i>- / 0.516</i>	<i>- / 0.528</i>	<i>- / 0.536</i>	<i>- / 0.547</i>	<i>- / 0.940</i>	<i>- / 4.617</i>	
Total													
Total Cost (Procurement + Support + Installation)	0.000	9.499	9.901	10.381	0.000	10.381	10.888	7.064	2.832	2.842	8.390	61.797	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 1										P-1 Line Item Number / Title: 0131 / Surface Power Equipment										Modification Number / Title: 1 / PE015 - LM2500 GAS TURBINE DIGITAL FUEL CONTROL											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: PE015 - LM2500 GAS TURBINE DIGITAL FUEL CONTROL																															
Manufacturer Information																															
Manufacturer Name: General Electric															Manufacturer Location: Cincinnati, OH																
Administrative Leadtime (in Months): 2															Production Leadtime (in Months): 10																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates		Feb 2018				Feb 2019				Feb 2020				Feb 2021				Feb 2022				Feb 2023				Feb 2024					
Delivery Dates		Feb 2019				Feb 2020				Feb 2021				Feb 2022				Feb 2023				Feb 2024				Feb 2025					
Installation Information																															
Method of Implementation: GOVERNMENT:: Installation Name: PE015 DIGITAL FUEL CONTROL SHIPSET/ PE6IN INSTALLATION FOR DFC																															
Installation Cost		Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2017		- / -	2 / 0.545		5 / 0.501		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		7 / 1.046								
FY 2018		- / -	- / -		- / -		5 / 0.504		0 / 0.000		5 / 0.504		- / -		- / -		- / -		- / -		0 / 0.000		5 / 0.504								
FY 2019		- / -	- / -		- / -		- / -		- / -		- / -		5 / 0.516		- / -		- / -		- / -		0 / 0.000		5 / 0.516								
FY 2020		- / -	- / -		- / -		- / -		- / -		- / -		- / -		5 / 0.528		- / -		- / -		0 / 0.000		5 / 0.528								
FY 2021		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		3 / 0.536		- / -		0 / 0.000		3 / 0.536								
FY 2022		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 0.547		0 / 0.000		1 / 0.547								
FY 2023		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 0.195		1 / 0.195								
To Complete		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		3 / 0.745		3 / 0.745								
Total		- / -	2 / 0.545		5 / 0.501		5 / 0.504		0 / 0.000		5 / 0.504		5 / 0.516		5 / 0.528		3 / 0.536		1 / 0.547		4 / 0.940		30 / 4.617								
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	1	1	-	-	1	2	2	1	2	-	2	1	-	3	1	1	2	1	1	-	3	-	-	-	1	-	-	4	30
Out	-	-	1	1	-	-	1	2	2	1	2	-	2	1	-	3	1	1	2	1	1	-	3	-	-	-	1	-	-	4	30
Footnotes:																															
(7) DFC ship-set procurement cost updated based on actual prior year contract award prices. If funds allocation to the program is delayed as a result of continuing resolutions or other circumstances, funds availability may not match projected contract award dates, thus delaying the awards. DFC Install schedule lags the Procurement schedule by one (1) fiscal year, thus install quantity for a given year will always																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 1	P-1 Line Item Number / Title: 0131 / Surface Power Equipment	Modification Number / Title: 1 / PE015 - LM2500 GAS TURBINE DIGITAL FUEL CONTROL
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
match the prior year procurement quantity. The procurement schedule for DFC ship sets is dictated by the Department's master schedule for DDG modernizations. The number of DDG modernizations changes from one year to the next based upon ship and dry dock availability.		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 1: Ship Propulsion Equipment	P-1 Line Item Number / Title: 0140 / Hybrid Electric Drive (HED)

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: 0708017N	Other Related Program Elements: 0604567N, 0204228N

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	41.744	10.983	6.331	0.000	0.000	0.000	0.000	0.000	0.000	0.000	46.585	105.643
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	41.744	10.983	6.331	0.000	0.000	0.000	0.000	0.000	0.000	0.000	46.585	105.643
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	41.744	10.983	6.331	0.000	0.000	0.000	0.000	0.000	0.000	0.000	46.585	105.643

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

Initial Spares (<i>\$ in Millions</i>)	-	0.468	-	0.471	-	0.471	0.089	0.406	0.451	0.493	Continuing	Continuing
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Hybrid Electric Drive (HED) consists of an electric motor which can be coupled to the propulsion reduction gear to provide propulsion power from the ship service gas turbine generators (SSGTGs) during low speed operations. This will permit the securing of one or more propulsion gas turbines and allow higher power loading resulting in more efficient operation of the SSGTGs, which will be generating electric power for the HED as well as ship service power. In addition to reducing fuel consumption and the associated costs, HED results in the additional benefits of increasing the ship's range, increased time on station performing its mission, and reducing the frequency of fuel replenishment.

The HED shipsets will include the propulsion motors, motor drives and the associated controls, interfaces, and mounting equipment that will be required to install the HED on DDG 51 Class Ships. This budget supports the HED for installation on two DDG 51 Class in-service ships beginning in FY17.

[P3A / TD001 - Hybrid Electric Drive]: Procure Hybrid Electric Drive (HED) for the DDG 51 Flight IIA Ships including equipment procurement, recurring equipment engineering, equipment integration, and ILS

[P3A / Equipment Modification]: Equipment Modifications will be performed to correct deficiencies and engineering change proposals.

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy								Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 1: Ship Propulsion Equipment						P-1 Line Item Number / Title: 0140 / Hybrid Electric Drive (HED)				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: 0708017N			Other Related Program Elements: 0604567N, 0204228N				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	1 / TD001 - Hybrid Electric Drive (TBD)				- / 41.744	- / 10.983	- / 6.331	- / 0.000	- / 0.000	- / 0.000
P-40	Total Gross/Weapon System Cost				- / 41.744	- / 10.983	- / 6.331	- / 0.000	- / 0.000	- / 0.000
Exhibits Schedule					FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	1 / TD001 - Hybrid Electric Drive (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 46.585	- / 105.643
P-40	Total Gross/Weapon System Cost				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 46.585	- / 105.643
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										

Justification:

This item covers HED procurement requirements for the DDG 51 Hybrid Electric Drive Backfit Program to be installed on two Flight IIA ships.

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Exhibit P-3a, Individual Modification: PB 2019 Navy						Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 1				P-1 Line Item Number / Title: 0140 / Hybrid Electric Drive (HED)				Modification Number / Title: 1 / TD001 - Hybrid Electric Drive			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	41.744	10.983	6.331	0.000	0.000	0.000	0.000	0.000	0.000	0.000	46.585	105.643
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	41.744	10.983	6.331	0.000	0.000	0.000	0.000	0.000	0.000	0.000	46.585	105.643
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	41.744	10.983	6.331	0.000	0.000	0.000	0.000	0.000	0.000	0.000	46.585	105.643
(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 Hybrid Electric Drive (HED) consists of an electric motor which can be coupled to the propulsion reduction gear to provide propulsion power from the ship service gas turbine generators (SSGTGs) during low speed operations. This will permit the securing of one or more propulsion gas turbines and allow higher power loading resulting in more efficient operation of the SSGTGs, which will be generating electric power for the HED as well as ship service power.

Administrative lead time includes receipt of funds, document development, contracts review, and vendor concurrence. Production lead times are based on contractual requirements.

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Exhibit P-3a, Individual Modification: PB 2019 Navy									Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 1				P-1 Line Item Number / Title: 0140 / Hybrid Electric Drive (HED)					Modification Number / Title: 1 / TD001 - Hybrid Electric Drive				
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: 0604567N				
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> TD001 - Hybrid Electric Drive													
B Kits													
Recurring													
1.1.1) Hybrid Electric Drive (Units) - NonOrganic ⁽¹⁾	6 / 24.724	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 46.585	6 / 71.309	
<i>Subtotal: Recurring</i>	- / 24.724	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 46.585	- / 71.309	
<i>Subtotal: TD001 - Hybrid Electric Drive</i>	6 / 24.724	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 46.585	6 / 71.309	
<i>Subtotal: Procurement, All Modification Items</i>	- / 24.724	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 46.585	- / 71.309	
Support (All Modification Items)													
2.1) Equipment Modification ⁽²⁾	- / -	- / 0.500	- / 0.510	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.010	
2.2) Engineering Services	- / 1.882	- / 5.116	- / 0.833	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 7.831	
2.3) Training Course Development Equipment ⁽³⁾	- / -	- / 0.050	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.050	
<i>Subtotal: Support</i>	- / 1.882	- / 5.666	- / 1.343	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 8.891	
Installation													
<i>Modification Item 1 of 1:</i> TD001 - Hybrid Electric Drive	- / 15.138	- / 5.317	- / 4.988	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 25.443	
<i>Subtotal: Installation</i>	- / 15.138	- / 5.317	- / 4.988	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 25.443	
Total													
Total Cost (Procurement + Support + Installation)	41.744	10.983	6.331	0.000	0.000	0.000	0.000	0.000	0.000	0.000	46.585	105.643	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 1					P-1 Line Item Number / Title: 0140 / Hybrid Electric Drive (HED)										Modification Number / Title: 1 / TD001 - Hybrid Electric Drive																
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:																					
Modification Item 1 of 1: TD001 - Hybrid Electric Drive																															
Manufacturer Information																															
Manufacturer Name: L3 Maritime Systems										Manufacturer Location: Various																					
Administrative Leadtime (in Months): 3										Production Leadtime (in Months): 12																					
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023																								
Contract Dates																															
Delivery Dates																															
Installation Information																															
Method of Implementation: Industrial:: Installation Name: Hybrid Electric Drive (Units)																															
Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total																			
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																			
Prior Years	0 / 15.138	1 / 5.317	1 / 4.988	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 0.000	6 / 25.443																			
FY 2017	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
Total	0 / 15.138	1 / 5.317	1 / 4.988	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 0.000	6 / 25.443																			
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	6
Out	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	6
Footnotes: ⁽¹⁾ HED will be installed on Flight IIA ships beginning in Q4 of FY17. Installation/DSA/AIT - Provides Planning Yard Design Services (DSA) (design, advance planning, and kitted material), Master Ship Repair (MSR) installations and Alteration Installation Team (AIT) Support. Design Services Allocation (DSA) - Planning Yard design and ship checks required for mandatory design tasks that must be completed within the year prior to the actual shipyard installations. These tasks occur over two years prior to the installation. Additionally, DSA requirements support design services during the year of installation for onsite design support.																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 1	P-1 Line Item Number / Title: 0140 / Hybrid Electric Drive (HED)	Modification Number / Title: 1 / TD001 - Hybrid Electric Drive
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
⁽²⁾ Equipment Modifications will be performed to correct deficiencies and engineering change proposals. ⁽³⁾ 2.3) Training Course Development Equipment Line provides for DDG HED INITIAL, INTERIM, AND LIFECYCLE TRAINING Requirements IAW OPNAVINST 1500.76C, & NAVEDTRA 130. Products include curriculum, instructor guides, student guides, tests, Course Identification Numbers (CIN), JQR/PQS NAVEDTRA 43705A. Other costs include Training System Installation Plan (TSIP) development, training site upgrades as required, and installation of training equipment. Training equipment costs include procurement of technical training equipment, design and construction of both training devices (mock-ups) and training unique equipment.		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy								Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 2: Generators							P-1 Line Item Number / Title: 0200 / Surface Combatant HM&E					
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	79.653	27.447	27.392	23.495	0.000	23.495	22.077	23.840	24.577	24.309	-	252.790
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	79.653	27.447	27.392	23.495	0.000	23.495	22.077	23.840	24.577	24.309	-	252.790
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	79.653	27.447	27.392	23.495	0.000	23.495	22.077	23.840	24.577	24.309	-	252.790
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	0.157	-	0.227	-	0.227	0.244	-	-	-	-	0.628
Flyaway Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Description:												
The FY 2019 funding request was reduced by \$.050 million to reflect the Department of Navy’s effort to support the Office of Management and Budget directed reforms for Efficiency and Effectiveness that include a lean, accountable, more efficient government.												
This program initiated in FY14 as a transfer of funding from BLI 5246, to allow the Navy to better align and identify Hull, Mechanical & Electrical (HM&E) requirements, shipboard upgrades and equipment in support of the in-service Surface Combatants to include Class Common Equipment to support shorter Regular Overhauls and Selected Restricted Availabilities, including Ship System Components that require long repair turn-around; CG/DDG - Machinery Control Systems (MCS) COTS Refresh; Ship Control Systems and installation in support of the Ship Control System.												
[P40A / GB001 - CG/DDG COTS Tech Refresh]: Due to Diminishing Manufacturing Sources and Material Shortages (DMSMS), Commercial Off The Shelf (COTS) equipment must be periodically refreshed to ensure supportability to the Fleet. This cost code is used to fund solutions for HM&E systems that have parts with oncoming DMSMS impacts. DMSMS solutions, including after-market manufacturing (reverse engineering), bridge-buys, life-of-type buys, modernization through replacement, modification / redesign, and reclamation are implemented to ensure that in-service ships are operational and sustainable throughout the life of the system. DMSMS issues and planned resolutions are implemented outside of standard CNO availabilities (WOO or CMAV) and are impacted by pending fact-of-life influences, including shifting availabilities, modified vendor End of Sale dates, and unforeseen material shortages.												
[P40A / GB002 - Class Common Equipment]: The CCE program is to provide Ready-For-Issue (RFI) systems and equipment in support of Surface Combatant ship industrial availabilities, and to replace major system equipment which sustains battle damage or major failure. CCE Availability Assets (AAs) ensure warfighting capability, readiness, and on-time deployment by providing RFI long lead time material (LLTM) in case of possible catastrophic damage or major failure on Aegis ships. CCE AAs are procured and stored to support backfit upgrades and emergent maintenance within brief availability windows. The ready accessibility of these assets avoids delays in availability completion caused by lengthy equipment repair turn-around time or acquisition lead time. In addition to availability assets, the CCE program also provides for Insurance Assets. These are the major long lead time HM&E equipment/systems which, due to major damage or battle damage, would prevent a ship from being able to be quickly repaired in order to accomplish its mission. The CCE program provides for both CG and DDG assets.												
[P40A / Ship Control Systems]: Funds provided support the procurement and installation of Ship Control Systems (SCS) upgrades on both cruisers and destroyers in support of the Fleet Modernization Program. Ship Control Systems provide lifecycle support for legacy and modernized engineering controls. SCS equipment and components are procured for various ship changes and engineering change proposals for in-service surface combatants and are installed outside of standard CNO availabilities. This effort includes maintaining Land Based Engineering Sites (LBES), CG / DDG system refresh, SCD design engineering, CG / DDG equipment procurement, and CG / DDG ISEA/ILS support. This cost code also provides for funding the necessary software licenses in support of the HM&E COTS systems/equipment for both CG												

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 2: Generators		P-1 Line Item Number / Title: 0200 / Surface Combatant HM&E
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		
and DDG class ships. Examples of systems requiring software licenses are: Machinery Control System components, Voyage Management System, Integrated Bridge System, Integrated Bridge and Navigation System, and Digital Video Surveillance System.		
[P40A / GB004 - Maritime Energy Initiatives (Previously Procured in BLI 0110 and BLI 0120)]: Maritime Energy Initiatives provide surface combatants with technologies/tools that reduce energy usage. This will enhance operational capabilities, allowing for longer time on-station and fewer refuelings. These initiatives will also help meet the CNO's 2020 goal of reducing the surface fleet's fuel usage by 15%. The initiatives consist of: 1) Hull and Hydrodynamics - These initiatives focus on the dynamic forces where the ship contacts the water. They include, but are not limited to hull appendages that reduce drag, thus improving speed and fuel efficiency; 2) Power Generation and Transmission Systems - These initiatives focus on, but are not limited to improving the efficiency of ships' prime movers, generators, main reduction gears, propulsion motors/drives, and shaft-line components; 3) Combat and Ship Systems Support Services - These initiatives focus on, but are not limited to improving systems that use electricity when providing support services (e.g. cooling, heating, air, lube oil) to combat machinery, or life support systems; and 4) Decision Aids - These initiatives will inform the sailor of decisions they can make to save energy and improve operational efficiency by consolidating and manipulating ship data and providing it back as actionable information.		
[P40A / Boundary Defense and Situational Awareness]: Procurement and installation of permanent HM&E cyber shipaltns on CG-47 and DDG-51 class ships to Sustain a threat-based cyber security architecture that will reduce the cost and effort required to pace the rapidly evolving cyber threat through strategically placed boundary defense capability between enclaves.		
[P3A / GB004 - Maritime Energy Initiatives (TMCS)]: The Heating, Ventilation, and Air Conditioning (HVAC) system is the largest distributed system on a Surface Combatant and typically consumes between 25% and 40% of all energy used. Surveys on several DDG-class ships indicate that average space temperatures across the ship were being maintained well below the design temperature. Thermal Management Control System (TMCS) provides centralized control and monitoring of space temperatures at design set-points for each compartment throughout the ship. This technology enables improved operational efficiency of the HVAC system, thereby lowering AC loads and reducing electrical demand.		
[P3A - 3 / GB004 - Maritime Energy Initiatives (VSD for CPS)]: The Collective Protective System (CPS) is a full time air filtration system integrated into the ship's HVAC system. The amount of outside supply air delivered to CPS zones varies with filter loading over time and is almost always higher than needed, resulting in above average HVAC loads. Variable Speed Drive (VSD) will be installed as an airflow control component to optimize supply air flow, realizing energy savings from fan motor and reduced HVAC loads.		
[P3A - 4 / GB004 - Maritime Energy Initiatives (SSL)]: Solid State Lighting (SSL) lamps consist of individual Light Emitting Diodes (LEDs), which serve as replacements for incandescent and fluorescent lighting fixtures. SSL replacements are engineered to meet military specifications. SSL replacements for incandescent and fluorescent fixtures reduce energy usage by approximately 85% and 50%, respectively. Additionally, this install will drastically reduce the electrical lighting load, maintenance actions, and the space needed for spare parts.		
[P3A - 5 / GB004 - Maritime Energy Initiatives (Shipboard Energy Dashboard FLT IIA)]: The Shipboard Energy Dashboard FLT IIA technology is a shipboard tool providing real time situational awareness of the energy demand associated with equipment lineup and mission. Technology raises operator awareness of how certain engineering plant lineups and equipment affect fuel consumption rates. Energy savings will be realized through energy usage culture change.		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy				Date: February 2018	
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 2: Generators				P-1 Line Item Number / Title: 0200 / Surface Combatant HM&E	
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Surface Combatant HM&E	P-5a			- / 46.332	- / 11.628	- / 7.522	- / 20.795	- / -	- / 20.795
P-3a	1 / GB004 - Maritime Energy Initiatives (TMCS) (TBD)				- / 16.602	- / 9.136	- / 9.341	- / 0.000	- / 0.000	- / 0.000
P-3a	3 / GB004 - Maritime Energy Initiatives (VSD for CPS) (TBD)				- / 6.434	- / 3.266	- / 4.971	- / 0.000	- / 0.000	- / 0.000
P-3a	4 / GB004 - Maritime Energy Initiatives (SSL) (TBD)				- / 9.427	- / 3.119	- / 5.384	- / 2.700	- / 0.000	- / 2.700
P-3a	5 / GB004 - Maritime Energy Initiatives (Shipboard Energy Dashboard FLT IIA) (TBD)				- / 0.858	- / 0.298	- / 0.174	- / 0.000	- / 0.000	- / 0.000
P-40	Total Gross/Weapon System Cost				- / 79.653	- / 27.447	- / 27.392	- / 23.495	- / 0.000	- / 23.495

Exhibits Schedule					FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Surface Combatant HM&E	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / GB004 - Maritime Energy Initiatives (TMCS) (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 35.079
P-3a	3 / GB004 - Maritime Energy Initiatives (VSD for CPS) (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 14.671
P-3a	4 / GB004 - Maritime Energy Initiatives (SSL) (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 20.630
P-3a	5 / GB004 - Maritime Energy Initiatives (Shipboard Energy Dashboard FLT IIA) (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 1.330
P-40	Total Gross/Weapon System Cost				- / 22.077	- / 23.840	- / 24.577	- / 24.309	- / -	- / 252.790

*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 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 2									P-1 Line Item Number / Title: 0200 / Surface Combatant HM&E						Aggregated Items Title: Surface Combatant HM&E					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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) GB001 - CG/DDG COTS Tech Refresh																				
1.1) GB001 - CG/DDG COTS Tech Refresh (1)	A		-	-	17.746	-	-	3.782	-	-	1.737	-	-	6.549	-	-	-	-	-	6.549
Subtotal: 1) GB001 - CG/DDG COTS Tech Refresh			-	-	17.746	-	-	3.782	-	-	1.737	-	-	6.549	-	-	-	-	-	6.549
2) GB002 - Class Common Equipment																				
2.1) GB002 - Class Common Equipment	A		-	-	5.915	-	-	2.382	-	-	1.398	-	-	2.426	-	-	-	-	-	2.426
Subtotal: 2) GB002 - Class Common Equipment			-	-	5.915	-	-	2.382	-	-	1.398	-	-	2.426	-	-	-	-	-	2.426
3) Ship Control Systems ⁽²⁾																				
3.1) GB003 - CG 47 Class (Installed under GB6IN 3.4) ^{(3)(†)}	A		1,302K	2	2.605	3,050K	1	3.050	1,957K	1	1.957	-	-	0.100	-	-	-	-	-	0.100
3.2) GB003 - DDG 51 Class (Installed under GB6IN 3.5) ^{(4)(†)}	A		4,112K	3	12.336	-	-	-	319,000.00	1	0.319	5,975K	1	5.975	-	-	-	5,975K	1	5.975
3.3) GB003 - Ship Control Systems Software Licenses	A		-	-	3.149	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.4) GB003 - Bridge and CIC ⁽⁵⁾	A		-	-	-	-	-	-	-	-	-	-	-	2.000	-	-	-	-	-	2.000
3.5) GB6IN - CG 47 Class Install (Procured under GB003 3.1) ⁽⁶⁾	A		-	-	-	-	-	1.681	-	-	1.760	658,000.00	1	0.658	-	-	-	658,000.00	1	0.658
3.6) GB6IN - DDG 51 Class Install (Procured under GB003 3.2) ⁽⁷⁾	A		-	-	1.803	-	-	0.733	-	-	0.351	987,000.00	1	0.987	-	-	-	987,000.00	1	0.987
Subtotal: 3) Ship Control Systems			-	-	19.893	-	-	5.464	-	-	4.387	-	-	9.720	-	-	-	-	-	9.720
4) GB004 - Maritime Energy Initiatives (Previously Procured in BLI 0110 and BLI 0120) ⁽⁸⁾																				
4.1) GB004 - Maritime Energy Initiative Install (Procured prior to transfer)	A		-	-	2.778	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 4) GB004 - Maritime Energy Initiatives (Previously Procured in BLI 0110 and BLI 0120)			-	-	2.778	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5) Boundary Defense and Situational Awareness																				

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 2							P-1 Line Item Number / Title: 0200 / Surface Combatant HM&E								Aggregated Items Title: Surface Combatant HM&E					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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)
5.1) GB005 - CG Equipment (Installed under 5.3) ⁽⁹⁾	A		-	-	-	-	-	-	-	-	-	525,000.00	1	0.525	-	-	-	525,000.00	1	0.525
5.2) GB005 - DDG Equipment (Installed under 5.4) ⁽¹⁰⁾	A		-	-	-	-	-	-	-	-	-	1,253K	1	1.253	-	-	-	1,253K	1	1.253
5.3) GB6IN - CG Installation/DSA (Procured under 5.1) ⁽¹¹⁾	A		-	-	-	-	-	-	-	-	-	-	-	0.091	-	-	-	-	-	0.091
5.4) GB6IN - DDG Installation/DSA (Procured under 5.2) ⁽¹²⁾	A		-	-	-	-	-	-	-	-	-	-	-	0.231	-	-	-	-	-	0.231
Subtotal: 5) Boundary Defense and Situational Awareness			-	-	0.000	-	-	-	-	-	-	-	-	2.100	-	-	-	-	-	2.100
Total			-	-	46.332	-	-	11.628	-	-	7.522	-	-	20.795	-	-	-	-	-	20.795

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) FY19: Indicates an increase from FY18 to purchase DMS Obsolescence Equipment and Battle Spares that were not required in FY18

(2) Procurements in cost code GB003 are dependent upon the specific alterations to be accomplished and an individual ship's configuration. Shipsets of equipment vary in quantities and types of components each fiscal year and within a fiscal year. Quantity of "1" represents the total value of multiple shipsets purchased on multiple contracts for multiple ships. Unit costs for specific alterations are not associated with cost code GB003 due to the varying degree of engineering changes required per ship (ship configuration dependent) and the installation normally occurs outside of CNO availabilities, in either a WOO or CMAV.

(3) GB003 Scheduled Procurements for CG 47 Class (To be installed under GB6IN 5.1): FY17: 15 different kits procured for 3 ships (CG 58, CG59, and CG 61) to be installed in FY18 under GB6IN; FY18: 4 kit procured for 2 ship (CG57, and CG 60) to be installed in FY19 under GB6IN FY19: Non-recurring engineering only for Integrated Ship Control software revision. FY20: 5 kits procured for 1 ship to be installed in FY21 under GB6IN. FY21: 1 kit procured for 1 ship to be installed in FY22 under GB6IN.

(4) GB003 Scheduled Procurements for DDG 51 Class (To be installed under GB6IN 5.2): FY17: No procurements. FY18: 5 different kits procured for 1 ship to be installed in FY19 under GB6IN (DDG65). FY19: 21 different kits procured for 7 ships to be installed in FY20 under GB6IN. FY20: 16 different kits procured for 5 ships to be installed in FY21 under GB6IN. FY21: 13 different kits procured for 7 ships to be installed in FY22 under GB6IN. FY22: 16 different kits procured for 7 ships to be installed in FY23 under GB6IN. FY23: 16 different kits procured for 7 ships to be installed in FY24 under GB6IN.

(5) Corrective Action based on the Surface Ship Comprehensive Review for Digital Recording for Bridge and Combat Information Center (CIC).

(6) GB6IN Scheduled Installs for CG 47 Class (Procured under GB003 3.1). FY17: 12 different kits installed on 7 ships (CG 52, CG 53, CG 55, CG 56, CG 57, CG 62 and CG 66) procured in FY16 under GB003. FY18: 15 different kits installed on 3 ships (CG58, CG59, CG60) procured in FY17 and prior under GB003. FY19: 4 kit installed on 2 ships (CG57, and CG 60) procured in FY18 under GB003. FY20: No installs, DSA only. FY21: 5 different kits installed on 1 ship procured in FY20 under GB003. FY22: 1 kit installed on 7 ship procured in FY21 under GB003.

(7) GB6IN Scheduled Installs for DDG 51 Class (Procured under GB003 3.2): FY17: 15 different kits installed on 5 ships (DDG 52, DDG 55, DDG 59 DDG 65 and DDG 111) procured in FY16 under GB003. FY18: 5 different kits installed on 2 ships (DDG 55, 69). FY19: 5 different kits installed on 1 ship (DDG 65) procured in FY18 under GB003. FY20: 21 different kits installed on 7 ships procured in FY19 under GB003. FY21: 16 different kits installed on 5 ships procured in FY20 under GB003. FY22: 13 different kits installed on 7 ships procured in FY21 under GB003. FY23: 14 different kits installed on 7 ships procured in FY22 under GB003.

(8) Maritime Energy Initiative funding transferred from BLI 0110 and BLI 0120 to BLI 0200 in FY15. FY16 installations tied to prior year procurements under different BLI's cannot be properly displayed in BLI 0200 P-3a exhibits. The purpose of this P-40a is to display this installation data. All installations tied to BLI 0200 Maritime Energy Initiative procurements are displayed on P-3a exhibits.

(9) GB005 FY19 procurement to be installed in FY20 on one ship.

(10) GB005 FY19 procurement to be installed in FY20 on one ship.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 2	P-1 Line Item Number / Title: 0200 / Surface Combatant HM&E	Aggregated Items Title: Surface Combatant HM&E
(11) GB6IN FY19 is DSA only. (12) GB6IN FY19 is DSA only.		

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Exhibit P-5a, Procurement History and Planning: PB 2019 Navy									Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 2			P-1 Line Item Number / Title: 0200 / Surface Combatant HM&E						Aggregated Items: Surface Combatant HM&E			
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
3) Ship Control Systems												
3.1) GB003 - CG 47 Class (Installed under GB6IN 3.4) ⁽³⁾		2017 ⁽¹³⁾	Various / Various	Various	NAVSSSES	Dec 2016	Dec 2017	1	3,050K	Y		
3.1) GB003 - CG 47 Class (Installed under GB6IN 3.4) ⁽³⁾		2018 ⁽¹⁴⁾	Various / Various	Various	NAVSSSES	Dec 2017	Dec 2018	1	1,957K	Y		
3.2) GB003 - DDG 51 Class (Installed under GB6IN 3.5) ⁽⁴⁾		2016 ⁽¹⁵⁾	Various / Various	Various	NAVSSSES	Dec 2015	Dec 2016	1	4,273K	Y		
3.2) GB003 - DDG 51 Class (Installed under GB6IN 3.5) ⁽⁴⁾		2018 ⁽¹⁶⁾	Various / Various	Various	NAVSSSES	Dec 2017	Dec 2018	1	319,000.00	Y		
3.2) GB003 - DDG 51 Class (Installed under GB6IN 3.5) ⁽⁴⁾		2019 ⁽¹⁷⁾	Various / Various	Various	NAVSESS	Dec 2018	Dec 2019	1	5,975K	Y		

Footnotes:

⁽¹³⁾ The unit cost accounts for 20 different kits procured for 3 ships (CG 58, CG 59 and CG 61) over multiple contracts. FY17 procurements are dependent upon the specific alterations required for each ship. Ship set costs and quantities vary based on the individual ship's configuration.

⁽¹⁴⁾ The unit cost accounts for 2 different kits procured for 1 ship (CG 60) over multiple contracts. FY18 procurements are dependent upon the specific alterations required for each ship. Ship set costs and quantities vary based on the individual ship's configuration.

⁽¹⁵⁾ The unit cost accounts for 19 different kits procured for 5 ships (DDG 52, DDG 55, DDG 59, DDG 65, and DDG 111) over multiple contracts. FY16 procurements are dependent upon the specific alterations required for each ship. Ship set costs and quantities vary based on the individual ship's configuration.

⁽¹⁶⁾ The unit cost accounts for 9 different kits procured for 4 ships (DDG 51, DDG 53, DDG 59, and DDG 68) over multiple contracts. FY18 procurements are dependent upon the specific alterations required for each ship. Ship set costs and quantities vary based on the individual ship's configuration.

⁽¹⁷⁾ The unit cost accounts for 22 different kits procured for 7 ships (DDG 55, 53, 59, 60, 61, 63, & 66) over multiple contracts. FY18 procurements are dependent upon the specific alterations required for each ship. Ship set costs and quantities vary based on the individual ship's configuration.

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 2				P-1 Line Item Number / Title: 0200 / Surface Combatant HM&E						Modification Number / Title: 1 / GB004 - Maritime Energy Initiatives (TMCS)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	16.602	9.136	9.341	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	35.079
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	16.602	9.136	9.341	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	35.079
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	16.602	9.136	9.341	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	35.079
<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 Heating, Ventilation, and Air Conditioning (HVAC) system is the largest distributed system on a Surface Combatant and typically consumes between 25% and 40% of all energy used. Surveys on several DDG-class ships indicate that average space temperatures across the ship were being maintained well below the design temperature. Thermal Management Control System (TMCS) provides centralized control and monitoring of space temperatures at design set-points for each compartment throughout the ship. This technology enables improved operational efficiency of the HVAC system, thereby lowering AC loads and reducing electrical demand. Engineering Services: It includes five (5) elements that are related to the production and delivery of a usable end-item: Production Engineering, Quality Assurance, Product Improvement, Acceptance Test and Evaluation, and Contractor Engineering and Technical Services (CETS). Five (5) elements and approximate breakdown is as follows: Production Engineering includes preparation, test and technical evaluation of engineering changes to correct deficiencies in the production items; production configuration control; review and evaluation of production design data and documentation; and logistic supportability efforts. Quality Assurance includes the preparation of procedures and the conduct of inspections, examinations and test during production that are necessary to deliver an item of the required quality as specified by the terms of the contract. Product Improvement includes improving reliability/maintainability/availability, and the correction of deficiencies exclusive of contractual specifications. Acceptance Test and Evaluation of a production item includes preparation of test plans, testing, data analysis, and data evaluation. Contractor Engineering and Technical Services (CETS) includes the furnishing of advice, instruction, and training by commercial or industrial companies.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 2				P-1 Line Item Number / Title: 0200 / Surface Combatant HM&E						Modification Number / Title: 1 / GB004 - Maritime Energy Initiatives (TMCS)			
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> GB004 - Maritime Energy Initiatives (TMCS)													
B Kits													
Recurring													
1.1.1) Thermal Management Control System Equipment - NonOrganic ⁽¹⁸⁾	8 / 7.996	2 / 1.812	2 / 1.844	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	12 / 11.652	
<i>Subtotal: Recurring</i>	- / 7.996	- / 1.812	- / 1.844	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 11.652	
<i>Subtotal: GB004 - Maritime Energy Initiatives (TMCS)</i>	8 / 7.996	2 / 1.812	2 / 1.844	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	12 / 11.652	
<i>Subtotal: Procurement, All Modification Items</i>	- / 7.996	- / 1.812	- / 1.844	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 11.652	
Support (All Modification Items)													
2.1) TMCS Engineering Services	- / 0.284	- / 0.104	- / 0.085	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.473	
<i>Subtotal: Support</i>	- / 0.284	- / 0.104	- / 0.085	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 0.473	
Installation													
<i>Modification Item 1 of 1:</i> GB004 - Maritime Energy Initiatives (TMCS)	- / 8.322	- / 7.220	- / 7.412	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 22.954	
<i>Subtotal: Installation</i>	- / 8.322	- / 7.220	- / 7.412	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 22.954	
Total													
Total Cost (Procurement + Support + Installation)	16.602	9.136	9.341	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	35.079	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 2										P-1 Line Item Number / Title: 0200 / Surface Combatant HM&E										Modification Number / Title: 1 / GB004 - Maritime Energy Initiatives (TMCS)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: GB004 - Maritime Energy Initiatives (TMCS)																															
Manufacturer Information																															
Manufacturer Name: NAG Marine															Manufacturer Location: Norfolk, VA																
Administrative Leadtime (in Months): 6															Production Leadtime (in Months): 12																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates		Dec 2016				Dec 2017																									
Delivery Dates		Dec 2017				Dec 2018																									
Installation Information																															
Method of Implementation: AIT INSTALLATION FOR TMCS:: Installation Name: Thermal Management Control System Equipment																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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 / 8.322		4 / 6.731		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		8 / 15.053							
FY 2017		- / -		0 / 0.489		2 / 3.426		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 3.915							
FY 2018		- / -		- / -		2 / 3.986		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 3.986							
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		4 / 8.322		4 / 7.220		4 / 7.412		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		12 / 22.954							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	4	-	2	2	-	-	2	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
Out	2	-	2	2	2	-	-	-	2	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
Footnotes: ⁽¹⁸⁾ Installation costs include planning support that is conducted the year prior to installation (i.e., \$0.489M installation cost in FY17 refers to the prior year planning for FY18 installation). FY19 installations will be funded with FY18, due to TMCS not being funded in FY19.																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy						Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 2				P-1 Line Item Number / Title: 0200 / Surface Combatant HM&E				Modification Number / Title: 3 / GB004 - Maritime Energy Initiatives (VSD for CPS)			

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

Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	6.434	3.266	4.971	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	14.671
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	6.434	3.266	4.971	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	14.671
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	6.434	3.266	4.971	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	14.671
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Collective Protective System (CPS) is a full time air filtration system integrated into the ship's HVAC system. The amount of outside supply air delivered to CPS zones varies with filter loading over time and is almost always higher than needed, resulting in above average HVAC loads. Variable Speed Drive (VSD) will be installed as an airflow control component to optimize supply air flow, realizing energy savings from fan motor and reduced HVAC loads.

Engineering Services:

It includes five (5) elements that are related to the production and delivery of a usable end-item: Production Engineering, Quality Assurance, Product Improvement, Acceptance Test and Evaluation, and Contractor Engineering and Technical Services (CETS).

Five (5) elements and approximate breakdown is as follows:

Production Engineering includes preparation, test and technical evaluation of engineering changes to correct deficiencies in the production items; production configuration control; review and evaluation of production design data and documentation; and logistic supportability efforts.

Quality Assurance includes the preparation of procedures and the conduct of inspections, examinations and test during production that are necessary to deliver an item of the required quality as specified by the terms of the contract.

Product Improvement includes improving reliability/maintainability/availability, and the correction of deficiencies exclusive of contractual specifications.

Acceptance Test and Evaluation of a production item includes preparation of test plans, testing, data analysis, and data evaluation.

Contractor Engineering and Technical Services (CETS) includes the furnishing of advice, instruction, and training by commercial or industrial companies.

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 2				P-1 Line Item Number / Title: 0200 / Surface Combatant HM&E						Modification Number / Title: 3 / GB004 - Maritime Energy Initiatives (VSD for CPS)			
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: GB004 - Maritime Energy Initiatives (VSD for CPS)													
B Kits													
Recurring													
1.1.1) Variable Speed Drive Equipment - NonOrganic (19)	5 / 3.765	1 / 0.743	2 / 1.514	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	8 / 6.022	
<i>Subtotal: Recurring</i>	- / 3.765	- / 0.743	- / 1.514	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 6.022	
<i>Subtotal: GB004 - Maritime Energy Initiatives (VSD for CPS)</i>	5 / 3.765	1 / 0.743	2 / 1.514	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	8 / 6.022	
<i>Subtotal: Procurement, All Modification Items</i>	- / 3.765	- / 0.743	- / 1.514	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 6.022	
Support (All Modification Items)													
2.1) Variable Speed Drive Engineering Services	- / 0.284	- / 0.105	- / 0.080	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.469	
<i>Subtotal: Support</i>	- / 0.284	- / 0.105	- / 0.080	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 0.469	
Installation													
Modification Item 1 of 1: GB004 - Maritime Energy Initiatives (VSD for CPS)	- / 2.385	- / 2.418	- / 3.377	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 8.180	
<i>Subtotal: Installation</i>	- / 2.385	- / 2.418	- / 3.377	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 8.180	
Total													
Total Cost (Procurement + Support + Installation)	6.434	3.266	4.971	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	14.671	

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 2	P-1 Line Item Number / Title: 0200 / Surface Combatant HM&E	Modification Number / Title: 3 / GB004 - Maritime Energy Initiatives (VSD for CPS)

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

Modification Item 1 of 1: GB004 - Maritime Energy Initiatives (VSD for CPS)

Manufacturer Information

Manufacturer Name: Rockwell Automation	Manufacturer Location: Cleveland, OH
Administrative Leadtime (in Months): 6	Production Leadtime (in Months): 12

Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Contract Dates	Dec 2016	Dec 2017					
Delivery Dates	Dec 2017	Dec 2018					

Installation Information

Method of Implementation: ALT:: Installation Name: Variable Speed Drive Equipment

Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	2 / 2.385	3 / 2.347	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	5 / 4.732
FY 2017	- / -	0 / 0.071	1 / 0.921	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	1 / 0.992
FY 2018	- / -	- / -	2 / 2.456	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 2.456
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	2 / 2.385	3 / 2.418	3 / 3.377	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	8 / 8.180

Installation Schedule

	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	2	-	2	1	-	-	1	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8		
Out	-	-	2	-	2	1	-	-	1	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8		

Footnotes:

⁽¹⁹⁾ Installation costs include planning support that is conducted the year prior to installation (i.e., \$0.071M installation cost in FY17 refers to the prior year planning for FY18 installation). FY19 installation will be funded with FY18, due to VSD not being funded in FY19.

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 2					P-1 Line Item Number / Title: 0200 / Surface Combatant HM&E					Modification Number / Title: 4 / GB004 - Maritime Energy Initiatives (SSL)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	9.427	3.119	5.384	2.700	0.000	2.700	0.000	0.000	0.000	0.000	0.000	20.630
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	9.427	3.119	5.384	2.700	0.000	2.700	0.000	0.000	0.000	0.000	0.000	20.630
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	9.427	3.119	5.384	2.700	0.000	2.700	0.000	0.000	0.000	0.000	0.000	20.630
<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: Solid State Lighting (SSL) lamps consist of individual Light Emitting Diodes (LEDs), which serve as replacements for incandescent and fluorescent lighting fixtures. SSL replacements are engineered to meet military specifications. SSL replacements for incandescent and fluorescent fixtures reduce energy usage by approximately 85% and 50%, respectively. Additionally, this install will drastically reduce the electrical lighting load, maintenance actions, and the space needed for spare parts. Engineering Services: It includes five (5) elements that are related to the production and delivery of a usable end-item: Production Engineering, Quality Assurance, Product Improvement, Acceptance Test and Evaluation, and Contractor Engineering and Technical Services (CETS). Five (5) elements and approximate breakdown is as follows: Production Engineering includes preparation, test and technical evaluation of engineering changes to correct deficiencies in the production items; production configuration control; review and evaluation of production design data and documentation; and logistic supportability efforts. Quality Assurance includes the preparation of procedures and the conduct of inspections, examinations and test during production that are necessary to deliver an item of the required quality as specified by the terms of the contract. Product Improvement includes improving reliability/maintainability/availability, and the correction of deficiencies exclusive of contractual specifications. Acceptance Test and Evaluation of a production item includes preparation of test plans, testing, data analysis, and data evaluation. Contractor Engineering and Technical Services (CETS) includes the furnishing of advice, instruction, and training by commercial or industrial companies.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 2				P-1 Line Item Number / Title: 0200 / Surface Combatant HM&E						Modification Number / Title: 4 / GB004 - Maritime Energy Initiatives (SSL)			
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: GB004 - Maritime Energy Initiatives (SSL)													
B Kits													
Recurring													
1.1.1) Solid State Lighting Equipment - NonOrganic	10 / 4.970	3 / 1.487	5 / 2.523	2 / 1.028	- / -	2 / 1.028	- / -	- / -	- / -	- / -	- / -	20 / 10.008	
1.1.2) Hanger Bay Solid State Lighting Equipment (SSL) - NonOrganic	- / -	- / -	2 / 0.083	4 / 0.170	- / -	4 / 0.170	- / -	- / -	- / -	- / -	- / -	6 / 0.253	
Subtotal: Recurring	- / 4.970	- / 1.487	- / 2.606	- / 1.198	- / -	- / 1.198	- / -	- / -	- / -	- / -	- / 0.000	- / 10.261	
Subtotal: GB004 - Maritime Energy Initiatives (SSL)	10 / 4.970	3 / 1.487	7 / 2.606	6 / 1.198	- / -	6 / 1.198	- / -	- / -	- / -	- / -	- / -	26 / 10.261	
Subtotal: Procurement, All Modification Items	- / 4.970	- / 1.487	- / 2.606	- / 1.198	- / -	- / 1.198	- / -	- / -	- / -	- / -	- / 0.000	- / 10.261	
Support (All Modification Items)													
2.1) Solid State Lighting Engineering Services	- / 0.132	- / 0.049	- / 0.070	- / 0.095	- / -	- / 0.095	- / -	- / -	- / -	- / -	- / -	- / 0.346	
Subtotal: Support	- / 0.132	- / 0.049	- / 0.070	- / 0.095	- / -	- / 0.095	- / -	- / -	- / -	- / -	- / 0.000	- / 0.346	
Installation													
Modification Item 1 of 1: GB004 - Maritime Energy Initiatives (SSL)	- / 4.325	- / 1.583	- / 2.708	- / 1.407	- / 0.000	- / 1.407	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 10.023	
Subtotal: Installation	- / 4.325	- / 1.583	- / 2.708	- / 1.407	- / -	- / 1.407	- / -	- / -	- / -	- / -	- / 0.000	- / 10.023	
Total													
Total Cost (Procurement + Support + Installation)	9.427	3.119	5.384	2.700	0.000	2.700	0.000	0.000	0.000	0.000	0.000	20.630	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 2										P-1 Line Item Number / Title: 0200 / Surface Combatant HM&E										Modification Number / Title: 4 / GB004 - Maritime Energy Initiatives (SSL)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: GB004 - Maritime Energy Initiatives (SSL)																															
Manufacturer Information																															
Manufacturer Name: Energy Focus Inc.															Manufacturer Location: Solon, OH																
Administrative Leadtime (in Months): 3															Production Leadtime (in Months): 6																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates		Nov 2016				Nov 2017				Nov 2018																					
Delivery Dates		May 2017				May 2018				May 2019																					
Installation Information																															
Method of Implementation: AIT:: Installation Name: Solid State Lighting Equipment																															
Installation Cost		Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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		10 / 4.325		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		10 / 4.325							
FY 2017		- / -		3 / 1.583		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		3 / 1.583							
FY 2018		- / -		- / -		5 / 2.521		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		5 / 2.521							
FY 2019		- / -		- / -		- / -		2 / 1.026		0 / 0.000		2 / 1.026		- / -		- / -		- / -		- / -		0 / 0.000		2 / 1.026							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		10 / 4.325		3 / 1.583		5 / 2.521		2 / 1.026		0 / 0.000		2 / 1.026		- / -		- / -		- / -		- / -		- / -		20 / 9.455							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	10	-	-	3	-	-	-	5	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Out	6	4	-	-	3	-	-	-	5	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 2	P-1 Line Item Number / Title: 0200 / Surface Combatant HM&E	Modification Number / Title: 4 / GB004 - Maritime Energy Initiatives (SSL)

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

Modification Item 1 of 1: GB004 - Maritime Energy Initiatives (SSL)

Installation Information

Method of Implementation: [none specified]:: Installation Name: Hanger Bay Solid State Lighting Equipment (SSL)

Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	2 / 0.187	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 0.187
FY 2019	- / -	- / -	- / -	4 / 0.381	0 / 0.000	4 / 0.381	- / -	- / -	- / -	- / -	0 / 0.000	4 / 0.381
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	2 / 0.187	4 / 0.381	0 / 0.000	4 / 0.381	- / -	- / -	- / -	- / -	0 / 0.000	6 / 0.568

Installation Schedule

	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	2	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
Out	-	-	-	-	-	-	-	-	2	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6

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Exhibit P-3a, Individual Modification: PB 2019 Navy									Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 2				P-1 Line Item Number / Title: 0200 / Surface Combatant HM&E					Modification Number / Title: 5 / GB004 - Maritime Energy Initiatives (Shipboard Energy Dashboard FLT IIA)			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	0.858	0.298	0.174	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.330
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	0.858	0.298	0.174	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.330
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	0.858	0.298	0.174	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.330
(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 Shipboard Energy Dashboard FLT IIA technology is a shipboard tool providing real time situational awareness of the energy demand associated with equipment lineup and mission. Technology raises operator awareness of how certain engineering plant lineups and equipment affect fuel consumption rates. Energy savings will be realized through energy usage culture change. Engineering Services: It includes five (5) elements that are related to the production and delivery of a usable end-item: Production Engineering, Quality Assurance, Product Improvement, Acceptance Test and Evaluation, and Contractor Engineering and Technical Services (CETS). Five (5) elements and approximate breakdown is as follows: Production Engineering includes preparation, test and technical evaluation of engineering changes to correct deficiencies in the production items; production configuration control; review and evaluation of production design data and documentation; and logistic supportability efforts. Quality Assurance includes the preparation of procedures and the conduct of inspections, examinations and test during production that are necessary to deliver an item of the required quality as specified by the terms of the contract. Product Improvement includes improving reliability/maintainability/availability, and the correction of deficiencies exclusive of contractual specifications. Acceptance Test and Evaluation of a production item includes preparation of test plans, testing, data analysis, and data evaluation. Contractor Engineering and Technical Services (CETS) includes the furnishing of advice, instruction, and training by commercial or industrial companies.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 2				P-1 Line Item Number / Title: 0200 / Surface Combatant HM&E						Modification Number / Title: 5 / GB004 - Maritime Energy Initiatives (Shipboard Energy Dashboard FLT IIA)			
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: GB004 - Maritime Energy Initiatives (Shipboard Energy Dashboard FLT IIA)													
B Kits													
Recurring													
1.1.1) Shipboard Energy Dashboard FLT IIA Equipment - NonOrganic ⁽²⁰⁾	7 / 0.288	2 / 0.086	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	9 / 0.374	
<i>Subtotal: Recurring</i>	- / 0.288	- / 0.086	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 0.374	
<i>Subtotal: GB004 - Maritime Energy Initiatives (Shipboard Energy Dashboard FLT IIA)</i>	7 / 0.288	2 / 0.086	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	9 / 0.374	
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.288	- / 0.086	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 0.374	
Support (All Modification Items)													
2.1) Shipboard Energy Dashboard FLT IIA Engineering Services	- / 0.151	- / 0.041	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.192	
<i>Subtotal: Support</i>	- / 0.151	- / 0.041	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 0.192	
Installation													
Modification Item 1 of 1: GB004 - Maritime Energy Initiatives (Shipboard Energy Dashboard FLT IIA)	- / 0.419	- / 0.171	- / 0.174	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.764	
<i>Subtotal: Installation</i>	- / 0.419	- / 0.171	- / 0.174	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 0.764	
Total													
Total Cost (Procurement + Support + Installation)	0.858	0.298	0.174	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.330	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 2										P-1 Line Item Number / Title: 0200 / Surface Combatant HM&E										Modification Number / Title: 5 / GB004 - Maritime Energy Initiatives (Shipboard Energy Dashboard FLT IIA)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: GB004 - Maritime Energy Initiatives (Shipboard Energy Dashboard FLT IIA)																															
Manufacturer Information																															
Manufacturer Name: Hoffer Flow Controls, Inc.															Manufacturer Location: Elizabeth City, NC																
Administrative Leadtime (in Months): 6															Production Leadtime (in Months): 12																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates		Feb 2017																													
Delivery Dates		Feb 2018																													
Installation Information																															
Method of Implementation: AIT:: Installation Name: Shipboard Energy Dashboard FLT IIA Equipment																															
Installation Cost		Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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		5 / 0.419		2 / 0.171		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		7 / 0.590							
FY 2017		- / -		- / -		2 / 0.174		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 0.174							
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		5 / 0.419		2 / 0.171		2 / 0.174		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		9 / 0.764							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9
Out	5	-	-	-	2	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9
Footnotes: ⁽²⁰⁾ Shipboard Energy Dashboard Flt IIA effort planned to complete in FY18.																															

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 6: Navigation Equipment							P-1 Line Item Number / Title: 0670 / Other Navigation 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	332.227	62.970	65.943	63.330	0.000	63.330	84.002	83.908	74.832	76.476	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	332.227	62.970	65.943	63.330	0.000	63.330	84.002	83.908	74.832	76.476	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	332.227	62.970	65.943	63.330	0.000	63.330	84.002	83.908	74.832	76.476	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

This program provides procurement and improvements of navigation equipment to include Inertial Navigation equipment for Ballistic Missile Defense such as gyrocompasses, speed sensors, Electronic Chart Display and Information System - Navy (ECDIS-N) and major components for other navigation systems. ECDIS-N provides Fleet-wide electronic charting capability, increases navigation and situational awareness, improves safety at sea, and eliminates reliance on paper charts. These systems provide mission critical navigation data to Ballistic Missile Defense, shipboard, combat, and gun and missile systems.

[P40A / GW013: CONVENTIONAL NAVIGATION FIELD CHANGE KITS]: Use of this Cost Element ended in FY16.

[P40A / GW029: INERTIAL NAVIGATION SYSTEMS FIELD CHANGE KITS]: Use of this Cost Element ended in FY16.

[P40A / GW038: BPS ECDIS-N/VMS FC KITS:]: Use of this Cost Element ended in FY16.

[P40A / GW051: SCALABLE ECDIS-N ECP/FIELD CHANGE KITS:]: Use of this Cost Element ended in FY16.

[P40A / GW054: NAVIGATION TRAINING EQUIPMENT]: Funds are required for the procurement of training equipment for multiple Navigation classrooms in support of Navigation System Technician pipeline training and ECDIS-N Operator Training. This includes computer upgrades and software licenses. These upgrades are critical to maintaining Fleet proficiency on operation and maintenance of navigation systems. Field Changes include ECDIS-N Operator Course Classroom Tech Refresh and additional seats and licenses and upgrade/update Mariner Skills Simulator (MSS) to support Fleet Training Requirements (Radar/Data bases/Models).

[P40A / GW056 ECDIS-N MODERNIZATION]: Use of this Cost Element ended in FY16.

[P40A / GW063: NAVIGATION CERTIFICATION]: These funds are required for conducting Navigation Certification (NAVCERT) on amphibious, surface, submarine, and carrier platforms as part of fielded upgrades and tech refresh.

[P40A / GW064: OWN SHIP SPEED (OSS) AND COURSE REPEATERS]: These funds are required for the fielding of Own Ship Speed (OSS) and Course Repeaters.

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 6: Navigation Equipment		P-1 Line Item Number / Title: 0670 / Other Navigation 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 / GW065: NAVIGATION SHORESITE EQUIPMENT]: These funds are required for the procurement and NRE/ILS/Support of navigation system shoresite equipment. Shoresite equipment does not have any associated installation costs.		
[P40A / GW066: SSBN NAVIGATION SENSOR OBSOLESCENCE]: These funds are required for Procurement and NRE/ILS/Support of replacement Navigation Sensors on SSBN Platforms.		
[P40A / GW068: NAVIGATION CERTIFICATION SUITE]: These funds are required for the procurement of hardware and software to maintain and upgrade a land-based Navigation Certification Suite lab to verify navigation equipment field changes and tech refresh interoperability with existing systems prior to shipboard installation.		
[P40A / GW830: PRODUCTION ENGINEERING]: These funds are required for the production engineering support of all navigation system hardware, software, and tech refresh procurements and system test and integration. This Cost Element includes indirect costs associated with the procurement and installation of individual field changes and upgrades. These costs would include field change and upgrade support, consolidated engineering support, Program Office support, and other costs. These costs will fluctuate with increases and decreases of overall budget, number and type of field changes and upgrades, and required support.		
[P3A / GW036: AN/WSN-7B]: These funds are required for the procurement and installation of the AN/WSN-7B Ring Laser Gyrocompass (RLG) for SSN, MCM, and LSD platforms. System peripherals include Sync Amps, BIT Cables, and installation kits. MCM ships require quantity (2) AN/WSN-7B per ship. Also, provides funding for part obsolescence solutions to maintain manufacturing capability.		
[P3A - 2 / GW051: ECDIS-N MODERNIZATION]: These funds are for the procurement and installation of ECDIS-N hardware and software Tech Refresh on amphibious, surface and carrier platforms.		
[P3A - 3 / GW053: AN/WSN-12]: These funds are for the procurement and installation of AN/WSN-12 Inertial Navigation Systems on surface and submarine platforms.		
[P3A - 4 / GW055: SPEED LOGS]: These funds are for the procurement and installation of Speed Log upgrades and Tech Refresh on amphibious, surface, submarine, and carrier platforms.		
[P3A - 5 / GW056: NAVY ECDIS]: These funds are required for the software build, procurement, and installation of Navy ECDIS hardware and software to replace legacy ECDIS-N capability on amphibious and surface platforms.		
[P3A - 6 / GW058: NAVSSI CAPSTONE]: These funds are required for the procurement, installation, and NRE/ILS/Support of NAVSSI Capstone upgrades on LHD platforms to support Ship Self Defense System (SSDS) upgrades.		
[P3A - 7 / GW059: EMERGENCY NAVIGATION LAPTOP]: Use of this Cost Element ended in FY16.		
[P3A - 8 / GW060: NEXT GENERATION FATHOMETER]: These funds are required for the procurement, installation, and NRE/ILS/support of Next Generation Fathometers to replace legacy AN/UQN-4/4A systems on amphibious, surface and carrier platforms.		
[P3A - 9 / GW061: MK 27 REPLACEMENT]: These funds are required for the procurement and installation of replacement for legacy MK27 Backup Heading Reference systems on amphibious, surface, and submarine platforms.		
[P3A - 10 / GW062: AN/WSN-7 MODERNIZATION]: These funds are required for the procurement and installation of field changes, upgrades, and Tech Refresh of AN/WSN-7 Inertial Navigation System on amphibious, surface, submarine, and carrier platforms.		
[P3A - 11 / GW067: DIGITAL DEPTH DETECTOR]: These funds are required for the procurement and installation of Digital Depth Detector to replace legacy depth detectors on submarine platforms.		
[P3A - 12 / GW069: BOUNDARY DEFENSE CABINET]: These funds are required for the procurement and installation of Boundary Defense Cabinets on surface platforms.		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 6: Navigation Equipment		P-1 Line Item Number / Title: 0670 / Other Navigation 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		
[P3A - 13 / GW070: MILITARY GPS USER EQUIPMENT (MGUE)]: This Cost Element is new from PB18 and was created to capture costs associated with the fielding of M-Code GPS capability. These funds are required for the procurement and installation of Military GPS User Equipment on submarine platforms.		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy			Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 6: Navigation Equipment			P-1 Line Item Number / Title: 0670 / Other Navigation 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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 Navigation Equipment	P-5a			- / 243.005	- / 18.852	- / 19.925	- / 18.501	- / -	- / 18.501
P-3a	1 / GW036: AN/WSN-7B (AN/WSN-7B)				- / 67.731	- / 1.325	- / 0.050	- / 0.860	- / 0.000	- / 0.860
P-3a	2 / GW051: ECDIS-N MODERNIZATION (ECDIS-N MODERNIZATION)				- / 0.000	- / 15.833	- / 4.786	- / 5.413	- / 0.000	- / 5.413
P-3a	3 / GW053: AN/WSN-12 (AN/WSN-12)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	4 / GW055: SPEED LOGS (SPEED LOGS)				- / 8.130	- / 9.695	- / 6.081	- / 11.617	- / 0.000	- / 11.617
P-3a	5 / GW056: NAVY ECDIS (NAVY ECDIS)				- / 0.000	- / 5.880	- / 18.120	- / 11.196	- / 0.000	- / 11.196
P-3a	6 / GW058: NAVSSI CAPSTONE (NAVSSI CAPSTONE)				- / 0.281	- / 2.651	- / 3.010	- / 1.702	- / 0.000	- / 1.702
P-3a	7 / GW059: EMERGENCY NAVIGATION LAPTOP (EMERGENCY NAVIGATION LAPTOP)				- / 4.095	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	8 / GW060: NEXT GENERATION FATHOMETER (NEXT GENERATION FATHOMETER)				- / 3.509	- / 3.035	- / 2.792	- / 1.864	- / 0.000	- / 1.864
P-3a	9 / GW061: MK 27 REPLACEMENT (MK 27 REPLACEMENT)				- / 2.088	- / 2.575	- / 1.355	- / 1.480	- / 0.000	- / 1.480
P-3a	10 / GW062: AN/WSN-7 MODERNIZATION (AN/WSN-7 MODERNIZATION)				- / 3.388	- / 2.349	- / 8.811	- / 9.784	- / 0.000	- / 9.784
P-3a	11 / GW067: DIGITAL DEPTH DETECTOR (DIGITAL DEPTH DETECTOR)				- / 0.000	- / 0.775	- / 1.013	- / 0.913	- / 0.000	- / 0.913
P-3a	12 / GW069: BOUNDARY DEFENSE CABINET (BOUNDARY DEFENSE CABINET)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	13 / GW070: MILITARY GPS USER EQUIPMENT (MGUE) (MILITARY GPS USER EQUIPMENT)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-40	Total Gross/Weapon System Cost				- / 332.227	- / 62.970	- / 65.943	- / 63.330	- / 0.000	- / 63.330

Exhibits Schedule					FY 2020	FY 2021	FY 2022	FY 2023	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 Navigation Equipment	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / GW036: AN/WSN-7B (AN/WSN-7B)				- / 0.655	- / 0.250	- / 0.100	- / 0.100	- / 0.000	- / 71.071
P-3a	2 / GW051: ECDIS-N MODERNIZATION (ECDIS-N MODERNIZATION)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 26.032
P-3a	3 / GW053: AN/WSN-12 (AN/WSN-12)				- / 0.000	- / 11.780	- / 17.906	- / 21.474	Continuing	Continuing
P-3a	4 / GW055: SPEED LOGS (SPEED LOGS)				- / 8.433	- / 3.015	- / 0.963	- / 0.378	- / 0.000	- / 48.312
P-3a	5 / GW056: NAVY ECDIS (NAVY ECDIS)				- / 30.070	- / 22.798	- / 26.260	- / 27.007	Continuing	Continuing
P-3a	6 / GW058: NAVSSI CAPSTONE (NAVSSI CAPSTONE)				- / 1.387	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 9.031
P-3a	7 / GW059: EMERGENCY NAVIGATION LAPTOP (EMERGENCY NAVIGATION LAPTOP)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 4.095

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy				Date: February 2018	
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 6: Navigation Equipment				P-1 Line Item Number / Title: 0670 / Other Navigation 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					FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	8 / GW060: NEXT GENERATION FATHOMETER (NEXT GENERATION FATHOMETER)				- / 1.348	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 12.548
P-3a	9 / GW061: MK 27 REPLACEMENT (MK 27 REPLACEMENT)				- / 0.870	- / 0.510	- / 0.100	- / 0.000	- / 0.000	- / 8.978
P-3a	10 / GW062: AN/WSN-7 MODERNIZATION (AN/WSN-7 MODERNIZATION)				- / 8.593	- / 7.471	- / 7.182	- / 5.103	Continuing	Continuing
P-3a	11 / GW067: DIGITAL DEPTH DETECTOR (DIGITAL DEPTH DETECTOR)				- / 0.775	- / 0.813	- / 0.238	- / 0.000	- / 0.000	- / 4.527
P-3a	12 / GW069: BOUNDARY DEFENSE CABINET (BOUNDARY DEFENSE CABINET)				- / 8.626	- / 12.569	- / 6.410	- / 6.538	Continuing	Continuing
P-3a	13 / GW070: MILITARY GPS USER EQUIPMENT (MGUE) (MILITARY GPS USER EQUIPMENT)				- / 0.000	- / 0.000	- / 0.000	- / 2.000	Continuing	Continuing
P-40	Total Gross/Weapon System Cost				- / 84.002	- / 83.908	- / 74.832	- / 76.476	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 2019 Navy																Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6									P-1 Line Item Number / Title: 0670 / Other Navigation Equipment							Aggregated Items Title: Other Navigation Equipment					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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) GW013: CONVENTIONAL NAVIGATION FIELD CHANGE KITS																					
1.1) SURFACE CONVENTIONAL NAVIGATION FC KITS	A		-	-	7.824	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1.2) SUBMARINE CONVENTIONAL NAVIGATION FC KITS	A		-	-	20.351	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Subtotal: 1) GW013: CONVENTIONAL NAVIGATION FIELD CHANGE KITS			-	-	28.175	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2) GW029: INERTIAL NAVIGATION SYSTEMS FIELD CHANGE KITS																					
2.1) SURFACE INERTIAL NAV SYS ECP/FC KITS	A		-	-	21.003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2.2) SUBMARINE INERTIAL NAV SYS ECP/FC KITS	A		-	-	38.668	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2.3) CARRIER INERTIAL NAV SYS ECP/FC KITS	A		-	-	17.020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Subtotal: 2) GW029: INERTIAL NAVIGATION SYSTEMS FIELD CHANGE KITS			-	-	76.691	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3) GW038: BPS ECDIS-N/VMS FC KITS:																					
3.1) SUBMARINE BPS ECDIS-N/VMS FC KITS:	A		-	-	44.392	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Subtotal: 3) GW038: BPS ECDIS-N/VMS FC KITS:			-	-	44.392	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
4) GW051: SCALABLE ECDIS-N ECP/FIELD CHANGE KITS:																					
4.1) SURFACE SCALABLE ECDIS-N ECP/ FIELD CHANGE KITS	A		-	-	47.562	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
4.2) CARRIER SCALABLE ECDIS-N ECP/FIELD CHANGE KITS:	A		-	-	5.831	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Subtotal: 4) GW051: SCALABLE ECDIS-N ECP/FIELD CHANGE KITS:			-	-	53.393	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
5) GW054: NAVIGATION TRAINING EQUIPMENT																					
5.1) SURFACE NAVIGATION TRAINING EQUIPMENT	A		-	-	3.006	-	-	0.601	-	-	0.612	-	-	0.624	-	-	-	-	-	0.624	

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy																Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6									P-1 Line Item Number / Title: 0670 / Other Navigation Equipment							Aggregated Items Title: Other Navigation Equipment				
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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: 5) GW054: NAVIGATION TRAINING EQUIPMENT			-	-	3.006	-	-	0.601	-	-	0.612	-	-	0.624	-	-	-	-	-	0.624
6) GW056 ECDIS-N MODERNIZATION																				
6.1) SURFACE ECDIS-N MODERNIZATION	A		-	-	4.741	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Subtotal: 6) GW056 ECDIS-N MODERNIZATION			-	-	4.741	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
7) GW063: NAVIGATION CERTIFICATION																				
7.1) AMPHIB NAVIGATION CERTIFICATION	A		-	-	1.707	-	-	1.485	-	-	0.855	-	-	0.765	-	-	-	-	-	0.765
7.2) SURFACE NAVIGATION CERTIFICATION	A		-	-	6.826	-	-	4.834	-	-	2.835	-	-	2.070	-	-	-	-	-	2.070
7.3) SUBMARINE NAVIGATION CERTIFICATION	A		-	-	-	-	-	1.350	-	-	1.080	-	-	0.675	-	-	-	-	-	0.675
7.4) CARRIER NAVIGATION CERTIFICATION	A		-	-	-	-	-	0.450	-	-	0.180	-	-	0.225	-	-	-	-	-	0.225
Subtotal: 7) GW063: NAVIGATION CERTIFICATION			-	-	8.533	-	-	8.119	-	-	4.950	-	-	3.735	-	-	-	-	-	3.735
8) GW064: OWN SHIP SPEED (OSS) AND COURSE REPEATERS																				
8.1) SURFACE OSS AND COURSE REPEATERS	A		-	-	0.200	-	-	0.135	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 8) GW064: OWN SHIP SPEED (OSS) AND COURSE REPEATERS			-	-	0.200	-	-	0.135	-	-	-	-	-	-	-	-	-	-	-	-
9) GW065: NAVIGATION SHORESITE EQUIPMENT																				
9.1) NAVIGATION SHORESITE EQUIPMENT ^(†)	A		599,000.00	4	2.396	-	-	0.360	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 9) GW065: NAVIGATION SHORESITE EQUIPMENT			-	-	2.396	-	-	0.360	-	-	-	-	-	-	-	-	-	-	-	-
10) GW066: SSBN NAVIGATION SENSOR OBSOLESCENCE																				
10.1) SSBN NAVIGATION SENSOR OBSOLESCENCE ⁽¹⁾	A		-	-	-	-	-	1.300	-	-	3.017	-	-	3.428	-	-	-	-	-	3.428
Subtotal: 10) GW066: SSBN NAVIGATION SENSOR OBSOLESCENCE			-	-	0.000	-	-	1.300	-	-	3.017	-	-	3.428	-	-	-	-	-	3.428
11) GW068: NAVIGATION CERTIFICATION SUITE																				

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6									P-1 Line Item Number / Title: 0670 / Other Navigation Equipment						Aggregated Items Title: Other Navigation Equipment					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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)
11.3) CARRIER NAVIGATION CERTIFICATION SUITE	A		-	-	-	-	-	2.034	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 11) GW068: NAVIGATION CERTIFICATION SUITE			-	-	0.000	-	-	2.034	-	-	-	-	-	-	-	-	-	-	-	-
12) GW830: PRODUCTION ENGINEERING																				
12.1) AMPHIB PRODUCTION ENGINEERING ⁽²⁾	A		-	-	-	-	-	0.915	-	-	1.608	-	-	2.068	-	-	-	-	-	2.068
12.2) SURFACE PRODUCTION ENGINEERING ⁽³⁾	A		-	-	11.002	-	-	2.769	-	-	7.228	-	-	6.133	-	-	-	-	-	6.133
12.3) SUBMARINE PRODUCTION ENGINEERING ⁽⁴⁾	A		-	-	7.133	-	-	1.656	-	-	2.245	-	-	2.141	-	-	-	-	-	2.141
12.4) CARRIER PRODUCTION ENGINEERING ⁽⁵⁾	A		-	-	3.343	-	-	0.963	-	-	0.265	-	-	0.372	-	-	-	-	-	0.372
Subtotal: 12) GW830: PRODUCTION ENGINEERING			-	-	21.478	-	-	6.303	-	-	11.346	-	-	10.714	-	-	-	-	-	10.714
Total			-	-	243.005	-	-	18.852	-	-	19.925	-	-	18.501	-	-	-	-	-	18.501
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⁾ GW066: FY17 funding is for NRE to define Field Change Kits to address navigation sensor obsolescence in support of SSBN modernization. FY18-19 funding is for procurement and installation of Field Change Kits on all 14 SSBN.																				
⁽²⁾ GW830 (Amphib): Changes in FY19-23 from OSD19 due to control reductions.																				
⁽³⁾ GW830 (Surface): Changes in FY19-23 from OSD19 due to control reductions.																				
⁽⁴⁾ GW830 (Submarine): Changes in FY19-23 from OSD19 due to control reductions.																				
⁽⁵⁾ GW830 (Carrier): Changes in FY19-23 from OSD19 due to control reductions.																				

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Exhibit P-5a, Procurement History and Planning: PB 2019 Navy								Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6			P-1 Line Item Number / Title: 0670 / Other Navigation Equipment					Aggregated Items: Other Navigation Equipment				
Item Number / Title [DODIC]	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
9) GW065: NAVIGATION SHORESITE EQUIPMENT												
9.1) NAVIGATION SHORESITE EQUIPMENT		2016	NORTHROP GRUMMAN / CHARLOTTESVILLE	SS / FFP	WASHINGTON, DC	Jan 2016	Feb 2017	4	598,899.00	Y		

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6	P-1 Line Item Number / Title: 0670 / Other Navigation Equipment	Modification Number / Title: 1 / GW036: AN/WSN-7B

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	67.731	1.325	0.050	0.860	0.000	0.860	0.655	0.250	0.100	0.100	0.000	71.071
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	67.731	1.325	0.050	0.860	0.000	0.860	0.655	0.250	0.100	0.100	0.000	71.071
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	67.731	1.325	0.050	0.860	0.000	0.860	0.655	0.250	0.100	0.100	0.000	71.071
(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:

These funds are required for the procurement and installation of the AN/WSN-7B Ring Laser Gyrocompass (RLG) for SSN, MCM, and LSD platforms. System peripherals include Sync Amps, BIT Cables, and installation kits. MCM ships require quantity (2) AN/WSN-7B per ship. Also, provides funding for part obsolescence solutions to maintain manufacturing capability.

AN/WSN-7B Field Change 1: Processor upgrade to Rev-N.

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6					P-1 Line Item Number / Title: 0670 / Other Navigation Equipment					Modification Number / Title: 1 / GW036: AN/WSN-7B			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: GW036: RING LASER GYRO NAVIGATION RING LASER GYROCOMPASS (AN/WSN-7B)					Modification Type: AN/WSN-7B					Related RDT&E PEs:			

Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2:</i> AMPHIB AN/WSN-7B												
B Kits												
Recurring												
1.1.1) AMPHIB AN/WSN-7B PROCUREMENT - NonOrganic ⁽⁶⁾	91 / 38.092	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	91 / 38.092
<i>Subtotal: Recurring</i>	- / 38.092	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 38.092
<i>Subtotal: AMPHIB AN/WSN-7B</i>	91 / 38.092	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	91 / 38.092
<i>Modification Item 2 of 2:</i> SUBMARINE AN/WSN-7B												
B Kits												
Recurring												
2.1.1) SUBMARINE AN/WSN-7B FIELD CHANGE 1 - NonOrganic ⁽⁷⁾	- / -	- / -	1 / 0.050	1 / 0.050	- / -	1 / 0.050	5 / 0.250	5 / 0.250	2 / 0.100	2 / 0.100	- / -	16 / 0.800
<i>Subtotal: Recurring</i>	- / 0.000	- / -	- / 0.050	- / 0.050	- / -	- / 0.050	- / 0.250	- / 0.250	- / 0.100	- / 0.100	- / 0.000	- / 0.800
<i>Subtotal: SUBMARINE AN/WSN-7B</i>	- / -	- / -	1 / 0.050	1 / 0.050	- / -	1 / 0.050	5 / 0.250	5 / 0.250	2 / 0.100	2 / 0.100	- / -	16 / 0.800
<i>Subtotal: Procurement, All Modification Items</i>	- / 38.092	- / -	- / 0.050	- / 0.050	- / -	- / 0.050	- / 0.250	- / 0.250	- / 0.100	- / 0.100	- / 0.000	- / 38.892
Installation												
<i>Modification Item 1 of 2:</i> AMPHIB AN/WSN-7B	- / 29.639	- / 1.325	- / 0.000	- / 0.810	- / 0.000	- / 0.810	- / 0.405	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 32.179
<i>Modification Item 2 of 2:</i> SUBMARINE AN/WSN-7B	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
<i>Subtotal: Installation</i>	- / 29.639	- / 1.325	- / -	- / 0.810	- / -	- / 0.810	- / 0.405	- / -	- / -	- / -	- / 0.000	- / 32.179
Total												
Total Cost (Procurement + Support + Installation)	67.731	1.325	0.050	0.860	0.000	0.860	0.655	0.250	0.100	0.100	0.000	71.071

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6					P-1 Line Item Number / Title: 0670 / Other Navigation Equipment										Modification Number / Title: 1 / GW036: AN/WSN-7B																
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:																					
Modification Item 1 of 2: AMPHIB AN/WSN-7B																															
Manufacturer Information																															
Manufacturer Name: NORTHROP GRUMMAN SYSTEMS CORP.												Manufacturer Location: CHARLOTTESVILLE, VA																			
Administrative Leadtime (in Months): 0												Production Leadtime (in Months): 0																			
Dates	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023						
Contract Dates																															
Delivery Dates																															
Installation Information																															
Method of Implementation: AIT:: Installation Name: AMPHIB AN/WSN-7B PROCUREMENT																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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		86 / 29.639	2 / 1.325	- / -	2 / 0.810	0 / 0.000	2 / 0.810	1 / 0.405	- / -	- / -	- / -	0 / 0.000	91 / 32.179																		
FY 2017		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		86 / 29.639	2 / 1.325	- / -	2 / 0.810	0 / 0.000	2 / 0.810	1 / 0.405	- / -	- / -	- / -	0 / 0.000	91 / 32.179																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	86	-	-	-	2	-	-	-	-	-	-	-	2	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	91
Out	86	-	-	-	2	-	-	-	-	-	-	-	2	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	91

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Exhibit P-3a, Individual Modification: PB 2019 Navy											Date: February 2018																				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6										P-1 Line Item Number / Title: 0670 / Other Navigation Equipment										Modification Number / Title: 1 / GW036: AN/WSN-7B											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 2 of 2: SUBMARINE AN/WSN-7B																															
Manufacturer Information																															
Manufacturer Name: NORTHROP GRUMMAN SYSTEMS CORP.															Manufacturer Location: CHARLOTTESVILLE, VA																
Administrative Leadtime (in Months): 3															Production Leadtime (in Months): 3																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates						Dec 2017				Dec 2018				Dec 2019				Dec 2020				Dec 2021				Dec 2022					
Delivery Dates						Mar 2018				Mar 2019				Mar 2020				Mar 2021				Mar 2022				Mar 2023					
Installation Information																															
Method of Implementation: AIT:: Installation Name: SUBMARINE AN/WSN-7B FIELD CHANGE 1																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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 2017		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2018		- / -		- / -		1 / 0.000		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		1 / -					
FY 2019		- / -		- / -		- / -		1 / 0.000		0 / 0.000		1 / 0.000		- / -		- / -		- / -		- / -		- / -		0 / 0.000		1 / -					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		5 / 0.000		- / -		- / -		- / -		- / -		0 / 0.000		5 / -					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		5 / 0.000		- / -		- / -		- / -		0 / 0.000		5 / -					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		2 / 0.000		- / -		- / -		0 / 0.000		2 / -					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		2 / 0.000		0 / 0.000		2 / -					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
Total		- / -		- / -		1 / 0.000		1 / 0.000		0 / 0.000		1 / 0.000		5 / 0.000		5 / 0.000		2 / 0.000		2 / 0.000		0 / 0.000		16 / -							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	-	-	-	5	-	-	-	5	-	-	-	2	-	-	-	2	-	
Out	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	5	-	-	-	5	-	-	-	2	-	-	-	2	-	
Footnotes: ⁽⁶⁾ AMPHIB AN/WSN-7 PROCUREMENT: Systems procured in prior years as Economic Ordering Quantities based on previous fielding plans. Fielding plan aligns with SSDS modernization on LSD platforms and results in later installation of systems that were procured in prior years. ⁽⁷⁾ SUBMARINE AN/WSN-7B FIELD CHANGE 1: Field Change consists of reprogramming existing circuit cards and involves installation costs of less than \$1,000. Installation costs are included in procurement costs.																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6				P-1 Line Item Number / Title: 0670 / Other Navigation Equipment						Modification Number / Title: 2 / GW051: ECDIS-N MODERNIZATION		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	15.833	4.786	5.413	0.000	5.413	0.000	0.000	0.000	0.000	0.000	26.032
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	15.833	4.786	5.413	0.000	5.413	0.000	0.000	0.000	0.000	0.000	26.032
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	15.833	4.786	5.413	0.000	5.413	0.000	0.000	0.000	0.000	0.000	26.032
<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: These funds are for the procurement and installation of ECDIS-N hardware and software Tech Refresh on amphibious, surface and carrier platforms.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy								Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6				P-1 Line Item Number / Title: 0670 / Other Navigation Equipment				Modification Number / Title: 2 / GW051: ECDIS-N MODERNIZATION					
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: GW051: ECDIS-N MODERNIZATION			Modification Type: ECDIS-N MODERNIZATION					Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 3: AMPHIB ECDIS-N FIELD CHANGES													
B Kits													
Recurring													
1.1.1) AMPHIB SCALABLE ECDIS-N HARDWARE/ SOFTWARE - NonOrganic ⁽⁸⁾	- / -	12 / 3.715	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	12 / 3.715	
1.1.2) AMPHIB SCALABLE ECDIS-N SOFTWARE - NonOrganic ⁽⁹⁾	6 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 0.000	
Subtotal: Recurring	- / 0.000	- / 3.715	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 3.715	
Subtotal: AMPHIB ECDIS-N FIELD CHANGES	6 / 0.000	12 / 3.715	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	18 / 3.715	
Modification Item 2 of 3: SURFACE ECDIS-N FIELD CHANGES													
B Kits													
Recurring													
2.1.1) SURFACE INTEGRATED BRIDGE SYSTEM (IBS) HARDWARE/SOFTWARE - NonOrganic ⁽¹⁰⁾	- / -	3 / 3.121	- / -	3 / 3.184	- / -	3 / 3.184	- / -	- / -	- / -	- / -	- / -	6 / 6.305	
2.1.2) SURFACE SCALABLE ECDIS-N HARDWARE/ SOFTWARE - NonOrganic ⁽¹¹⁾	- / -	12 / 3.698	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	12 / 3.698	
2.1.3) SURFACE SCALABLE ECDIS-N SOFTWARE - NonOrganic ⁽¹²⁾	31 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	31 / 0.000	
Subtotal: Recurring	- / 0.000	- / 6.819	- / -	- / 3.184	- / -	- / 3.184	- / -	- / -	- / -	- / -	- / 0.000	- / 10.003	
Subtotal: SURFACE ECDIS-N FIELD CHANGES	31 / 0.000	15 / 6.819	- / -	3 / 3.184	- / -	3 / 3.184	- / -	- / -	- / -	- / -	- / -	49 / 10.003	
Modification Item 3 of 3: CARRIER ECDIS-N FIELD CHANGES													
B Kits													
Recurring													
3.1.1) CARRIER SCALABLE ECDIS-N HARDWARE/ SOFTWARE - NonOrganic ⁽¹³⁾	- / -	3 / 0.918	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 0.918	
3.1.2) CARRIER SCALABLE ECDIS-N SOFTWARE - NonOrganic ⁽¹⁴⁾	7 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	7 / 0.000	
Subtotal: Recurring	- / 0.000	- / 0.918	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 0.918	
Subtotal: CARRIER ECDIS-N FIELD CHANGES	7 / 0.000	3 / 0.918	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 0.918	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6					P-1 Line Item Number / Title: 0670 / Other Navigation Equipment					Modification Number / Title: 2 / GW051: ECDIS-N MODERNIZATION			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: GW051: ECDIS-N MODERNIZATION				Modification Type: ECDIS-N MODERNIZATION				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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>Subtotal: Procurement, All Modification Items</i>													
Installation													
<i>Modification Item 1 of 3: AMPHIB ECDIS-N FIELD CHANGES</i>	- / 0.000	- / 1.112	- / 1.551	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 2.663	
<i>Modification Item 2 of 3: SURFACE ECDIS-N FIELD CHANGES</i>	- / 0.000	- / 2.366	- / 3.235	- / 2.229	- / 0.000	- / 2.229	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 7.830	
<i>Modification Item 3 of 3: CARRIER ECDIS-N FIELD CHANGES</i>	- / 0.000	- / 0.903	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.903	
<i>Subtotal: Installation</i>	- / 0.000	- / 4.381	- / 4.786	- / 2.229	- / -	- / 2.229	- / -	- / -	- / -	- / -	- / 0.000	- / 11.396	
Total													
Total Cost (Procurement + Support + Installation)	0.000	15.833	4.786	5.413	0.000	5.413	0.000	0.000	0.000	0.000	0.000	26.032	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6										P-1 Line Item Number / Title: 0670 / Other Navigation Equipment										Modification Number / Title: 2 / GW051: ECDIS-N MODERNIZATION											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 3: AMPHIB ECDIS-N FIELD CHANGES																															
Manufacturer Information																															
Manufacturer Name: NORTHROP GRUMMAN SYSTEMS CORP.															Manufacturer Location: CHARLOTTESVILLE, VA																
Administrative Leadtime (in Months): 3															Production Leadtime (in Months): 6																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates		Dec 2016																													
Delivery Dates		Jun 2017																													
Manufacturer Name: NORTHROP GRUMMAN SYSTEMS CORP.															Manufacturer Location: CHARLOTTESVILLE, VA																
Administrative Leadtime (in Months): 0															Production Leadtime (in Months): 0																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates																															
Delivery Dates																															
Installation Information																															
Method of Implementation: AIT:: Installation Name: AMPHIB SCALABLE ECDIS-N HARDWARE/SOFTWARE																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017		- / -	5 / 1.020	7 / 1.457	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	12 / 2.477																		
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		- / -	5 / 1.020	7 / 1.457	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	12 / 2.477																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	-	-	-	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
Out	-	-	-	-	5	-	-	-	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6					P-1 Line Item Number / Title: 0670 / Other Navigation Equipment										Modification Number / Title: 2 / GW051: ECDIS-N MODERNIZATION																
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 3: AMPHIB ECDIS-N FIELD CHANGES																															
Installation Information																															
Method of Implementation: AIT:: Installation Name: AMPHIB SCALABLE ECDIS-N SOFTWARE																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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		- / -	3 / 0.092	3 / 0.094	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	6 / 0.186																		
FY 2017		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		- / -	3 / 0.092	3 / 0.094	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	6 / 0.186																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
Out	-	-	-	-	3	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy							Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6				P-1 Line Item Number / Title: 0670 / Other Navigation Equipment				Modification Number / Title: 2 / GW051: ECDIS-N MODERNIZATION				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Modification Item 2 of 3: SURFACE ECDIS-N FIELD CHANGES												
Manufacturer Information												
Manufacturer Name: NORTHROP GRUMMAN SYSTEMS CORP.							Manufacturer Location: CHARLOTTESVILLE, VA					
Administrative Leadtime (in Months): 3							Production Leadtime (in Months): 6					
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023					
Contract Dates	Dec 2016											
Delivery Dates	Jun 2017											
Manufacturer Name: NORTHROP GRUMMAN SYSTEMS CORP.							Manufacturer Location: CHARLOTTESVILLE, VA					
Administrative Leadtime (in Months): 3							Production Leadtime (in Months): 6					
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023					
Contract Dates	Dec 2016		Dec 2018									
Delivery Dates	Jun 2017		Jun 2019									
Manufacturer Name: NORTHROP GRUMMAN SYSTEMS CORP.							Manufacturer Location: CHARLOTTESVILLE, VA					
Administrative Leadtime (in Months): 0							Production Leadtime (in Months): 0					
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023					
Contract Dates												
Delivery Dates												
Installation Information												
Method of Implementation: AIT:: Installation Name: SURFACE INTEGRATED BRIDGE SYSTEM (IBS) HARDWARE/SOFTWARE												
Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017	- / -	- / -	3 / 2.185	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 2.185
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	3 / 2.229	0 / 0.000	3 / 2.229	- / -	- / -	- / -	- / -	0 / 0.000	3 / 2.229
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	3 / 2.185	3 / 2.229	0 / 0.000	3 / 2.229	- / -	- / -	- / -	- / -	0 / 0.000	6 / 4.414

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy																							Date: February 2018								
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6										P-1 Line Item Number / Title: 0670 / Other Navigation Equipment										Modification Number / Title: 2 / GW051: ECDIS-N MODERNIZATION											
ID Code (A=Service Ready, B=Not Service Ready) :																	MDAP/MAIS Code:														
Modification Item 2 of 3: SURFACE ECDIS-N FIELD CHANGES																															
Installation Information																															
Method of Implementation: AIT:: Installation Name: SURFACE INTEGRATED BRIDGE SYSTEM (IBS) HARDWARE/SOFTWARE																															
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
In	-	-	-	-	-	3	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	
Out	-	-	-	-	-	3	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	
Method of Implementation: AIT:: Installation Name: SURFACE SCALABLE ECDIS-N HARDWARE/SOFTWARE																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017		- / -	8 / 1.632	4 / 0.832	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	12 / 2.464																		
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		- / -	8 / 1.632	4 / 0.832	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	12 / 2.464																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
In	-	-	-	-	8	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12		
Out	-	-	-	-	8	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12		
Method of Implementation: AIT:: Installation Name: SURFACE SCALABLE ECDIS-N SOFTWARE																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total																		
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																		
Prior Years		- / -	24 / 0.734	7 / 0.218	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	31 / 0.952																		

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6										P-1 Line Item Number / Title: 0670 / Other Navigation Equipment										Modification Number / Title: 2 / GW051: ECDIS-N MODERNIZATION											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 2 of 3: SURFACE ECDIS-N FIELD CHANGES																															
Installation Information																															
Method of Implementation: AIT:: Installation Name: SURFACE SCALABLE ECDIS-N SOFTWARE																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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>																	
FY 2017		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		- / -	24 / 0.734	7 / 0.218	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	31 / 0.952																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	24	-	-	-	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31
Out	-	-	-	-	24	-	-	-	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6										P-1 Line Item Number / Title: 0670 / Other Navigation Equipment										Modification Number / Title: 2 / GW051: ECDIS-N MODERNIZATION											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 3 of 3: CARRIER ECDIS-N FIELD CHANGES																															
Manufacturer Information																															
Manufacturer Name: NORTHROP GRUMMAN SYSTEMS CORP.															Manufacturer Location: CHARLOTTESVILLE, VA																
Administrative Leadtime (in Months): 3															Production Leadtime (in Months): 6																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates		Dec 2016																													
Delivery Dates		Jun 2017																													
Manufacturer Name: NORTHROP GRUMMAN SYSTEMS CORP.															Manufacturer Location: CHARLOTTESVILLE, VA																
Administrative Leadtime (in Months): 0															Production Leadtime (in Months): 0																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates																															
Delivery Dates																															
Installation Information																															
Method of Implementation: AIT:: Installation Name: CARRIER SCALABLE ECDIS-N HARDWARE/SOFTWARE																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017		- / -	3 / 0.689	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 0.689																		
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		- / -	3 / 0.689	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 0.689																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
Out	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6										P-1 Line Item Number / Title: 0670 / Other Navigation Equipment										Modification Number / Title: 2 / GW051: ECDIS-N MODERNIZATION											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 3 of 3: CARRIER ECDIS-N FIELD CHANGES																															
Installation Information																															
Method of Implementation: AIT:: Installation Name: CARRIER SCALABLE ECDIS-N SOFTWARE																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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		- / -	7 / 0.214	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	7 / 0.214																		
FY 2017		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		- / -	7 / 0.214	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	7 / 0.214																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7
Out	-	-	-	-	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7
Footnotes: ⁽⁸⁾ AMPHIB SCALABLE ECDIS-N HARDWARE/SOFTWARE: Systems procured in FY17 as Economic Ordering Quantities and to maintain shipboard configuration for installation in FY17 and FY18. ⁽⁹⁾ AMPHIB SCALABLE ECDIS-N SOFTWARE: Prior year software licenses procured as Economic Ordering Quantities and funded under P40A Cost Element GW051. ⁽¹⁰⁾ SURFACE INTEGRATED BRIDGE SYSTEM (IBS) HARDWARE/SOFTWARE: Systems procured/delivered in FY17 to undergo land-based integration testing prior to installation in FY18. IBS is a full ECDIS-N system that is interfaced with ship control and other ship systems and consists of additional hardware as compared to scalable systems (items 1.1, 2.2, and 3.1). ⁽¹¹⁾ SURFACE SCALABLE ECDIS-N HARDWARE/SOFTWARE: Systems procured in FY17 as Economic Ordering Quantities and to maintain shipboard configuration for installation in FY17 and FY18. ⁽¹²⁾ SURFACE SCALABLE ECDIS-N SOFTWARE: Prior year software licenses procured as Economic Ordering Quantities and funded under P40A Cost Element GW051. ⁽¹³⁾ CARRIER SCALABLE ECDIS-N HARDWARE/SOFTWARE: Systems procured in FY17 as Economic Ordering Quantities and to maintain shipboard configuration for installation in FY17. ⁽¹⁴⁾ CARRIER SCALABLE ECDIS-N SOFTWARE: Prior year software licenses procured as Economic Ordering Quantities and funded under P40A Cost Element GW051.																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy							Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6				P-1 Line Item Number / Title: 0670 / Other Navigation Equipment				Modification Number / Title: 3 / GW053: AN/WSN-12			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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	0.000	11.780	17.906	21.474	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	0.000	11.780	17.906	21.474	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	0.000	11.780	17.906	21.474	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:

These funds are for the procurement and installation of AN/WSN-12 Inertial Navigation Systems on surface and submarine platforms.

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Exhibit P-3a, Individual Modification: PB 2019 Navy								Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6				P-1 Line Item Number / Title: 0670 / Other Navigation Equipment					Modification Number / Title: 3 / GW053: AN/WSN-12				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: GW053: AN/WSN-12			Modification Type: AN/WSN-12					Related RDT&E PEs: 0204228N					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: GW053: AN/WSN-12													
B Kits													
Recurring													
1.1.1) SURFACE AN/WSN-12 PROCUREMENT - NonOrganic ⁽¹⁵⁾		- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 11.780	4 / 12.016	4 / 12.256	Continuing	Continuing
1.1.2) SUBMARINE AN/WSN-12 PROCUREMENT - NonOrganic ⁽¹⁶⁾		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 5.890	2 / 6.010	Continuing	Continuing
Subtotal: Recurring		- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / 11.780	- / 17.906	- / 18.266	Continuing	Continuing
Subtotal: GW053: AN/WSN-12		- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 11.780	6 / 17.906	6 / 18.266	Continuing	Continuing
Subtotal: Procurement, All Modification Items		- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / 11.780	- / 17.906	- / 18.266	Continuing	Continuing
Installation													
Modification Item 1 of 1: GW053: AN/WSN-12		- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 3.208	Continuing	Continuing
Subtotal: Installation		- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 3.208	Continuing	Continuing
Total													
Total Cost (Procurement + Support + Installation)		0.000	0.000	0.000	0.000	0.000	0.000	0.000	11.780	17.906	21.474	Continuing	Continuing

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6										P-1 Line Item Number / Title: 0670 / Other Navigation Equipment										Modification Number / Title: 3 / GW053: AN/WSN-12												
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																	
Modification Item 1 of 1: GW053: AN/WSN-12																																
Manufacturer Information																																
Manufacturer Name: TBD															Manufacturer Location: TBD																	
Administrative Leadtime (in Months): 3															Production Leadtime (in Months): 17																	
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023						
Contract Dates																		Dec 2020				Dec 2021				Dec 2022						
Delivery Dates																		May 2022				May 2023				May 2024						
Manufacturer Name: TBD															Manufacturer Location: TBD																	
Administrative Leadtime (in Months): 3															Production Leadtime (in Months): 17																	
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023						
Contract Dates																						Dec 2021				Dec 2022						
Delivery Dates																						May 2023				May 2024						
Installation Information																																
Method of Implementation: AIT:: Installation Name: SURFACE AN/WSN-12 PROCUREMENT																																
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing																			
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 3.208	Continuing	Continuing																			
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing																			
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing																			
Total		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 3.208	Continuing	Continuing																			
Installation Schedule																																
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	Cont.	Cont.
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	Cont.	Cont.

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6										P-1 Line Item Number / Title: 0670 / Other Navigation Equipment										Modification Number / Title: 3 / GW053: AN/WSN-12											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: GW053: AN/WSN-12																															
Installation Information																															
Method of Implementation: AIT:: Installation Name: SUBMARINE AN/WSN-12 PROCUREMENT																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 1.650	2 / 1.650																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing																		
Total		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Cont.	Cont.
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Cont.	Cont.
Footnotes: ⁽¹⁵⁾ SURFACE AN/WSN-12 PROCUREMENT: Production leadtime of 17 months does not include integration testing to be conducted by the ISEA prior to delivery to ship for installation. Overall leadtime from contract award to delivery to ship for installation is no less than 20 months. ⁽¹⁶⁾ SUBMARINE AN/WSN-12 PROCUREMENT: Production leadtime of 17 months does not include integration testing to be conducted by the ISEA prior to delivery to ship for installation. Overall leadtime from contract award to delivery to ship for installation is no less than 20 months.																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy						Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6				P-1 Line Item Number / Title: 0670 / Other Navigation Equipment				Modification Number / Title: 4 / GW055: SPEED LOGS			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	8.130	9.695	6.081	11.617	0.000	11.617	8.433	3.015	0.963	0.378	0.000	48.312
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	8.130	9.695	6.081	11.617	0.000	11.617	8.433	3.015	0.963	0.378	0.000	48.312
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	8.130	9.695	6.081	11.617	0.000	11.617	8.433	3.015	0.963	0.378	0.000	48.312
(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:

These funds are for the procurement and installation of Speed Log upgrades and Tech Refresh on amphibious, surface, submarine, and carrier platforms.

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Exhibit P-3a, Individual Modification: PB 2019 Navy								Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6				P-1 Line Item Number / Title: 0670 / Other Navigation Equipment				Modification Number / Title: 4 / GW055: SPEED LOGS					
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: GW055: SPEED LOGS				Modification Type: SPEED LOGS				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: AMPHIB SPEED LOG													
B Kits													
Recurring													
1.1.1) AMPHIB AN/WSN-9 PROCUREMENT - NonOrganic ⁽¹⁷⁾		16 / 4.939	- / -	2 / 0.388	5 / 0.970	- / -	5 / 0.970	2 / 0.388	- / -	- / -	- / -	- / -	25 / 6.685
1.1.2) AMPHIB SWITCHBOARD - NonOrganic ⁽¹⁸⁾		- / -	7 / 0.350	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	7 / 0.350
Subtotal: Recurring		- / 4.939	- / 0.350	- / 0.388	- / 0.970	- / -	- / 0.970	- / 0.388	- / -	- / -	- / -	- / 0.000	- / 7.035
Subtotal: AMPHIB SPEED LOG		16 / 4.939	7 / 0.350	2 / 0.388	5 / 0.970	- / -	5 / 0.970	2 / 0.388	- / -	- / -	- / -	- / -	32 / 7.035
Modification Item 2 of 4: SURFACE SPEED LOG													
B Kits													
Recurring													
2.1.1) SURFACE AN/WSN-9 PROCUREMENT - NonOrganic		6 / 0.707	31 / 6.014	- / -	17 / 3.298	- / -	17 / 3.298	4 / 0.776	- / -	- / -	- / -	- / -	58 / 10.795
Subtotal: Recurring		- / 0.707	- / 6.014	- / -	- / 3.298	- / -	- / 3.298	- / 0.776	- / -	- / -	- / -	- / 0.000	- / 10.795
Subtotal: SURFACE SPEED LOG		6 / 0.707	31 / 6.014	- / -	17 / 3.298	- / -	17 / 3.298	4 / 0.776	- / -	- / -	- / -	- / -	58 / 10.795
Modification Item 3 of 4: SUBMARINE SPEED LOG													
B Kits													
Recurring													
3.1.1) SUBMARINE AN/WSN-9 PROCUREMENT (SSBN) - NonOrganic ⁽¹⁹⁾		2 / 0.000	3 / 0.300	3 / 0.300	2 / 0.200	- / -	2 / 0.200	3 / 0.300	1 / 0.100	- / -	- / -	- / -	14 / 1.200
3.1.2) SUBMARINE AN/WSN-9 PROCUREMENT (SSN) - NonOrganic ⁽²⁰⁾		3 / 0.148	- / -	4 / 0.620	8 / 1.240	- / -	8 / 1.240	4 / 0.620	2 / 0.310	1 / 0.155	- / -	- / -	22 / 3.093
Subtotal: Recurring		- / 0.148	- / 0.300	- / 0.920	- / 1.440	- / -	- / 1.440	- / 0.920	- / 0.410	- / 0.155	- / -	- / 0.000	- / 4.293
Subtotal: SUBMARINE SPEED LOG		5 / 0.148	3 / 0.300	7 / 0.920	10 / 1.440	- / -	10 / 1.440	7 / 0.920	3 / 0.410	1 / 0.155	- / -	- / -	36 / 4.293
Modification Item 4 of 4: CARRIER SPEED LOG													
B Kits													
Recurring													
4.1.1) CARRIER AN/WSN-9 PROCUREMENT - NonOrganic ⁽²¹⁾		1 / 0.000	- / -	- / -	1 / 0.194	- / -	1 / 0.194	- / -	- / -	1 / 0.194	- / -	- / -	3 / 0.388
4.1.2) CARRIER AN/WSN-8 TECH REFRESH - NonOrganic ⁽²²⁾		- / -	4 / 0.776	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 0.776
Subtotal: Recurring		- / 0.000	- / 0.776	- / -	- / 0.194	- / -	- / 0.194	- / -	- / -	- / 0.194	- / -	- / 0.000	- / 1.164

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6					P-1 Line Item Number / Title: 0670 / Other Navigation Equipment					Modification Number / Title: 4 / GW055: SPEED LOGS			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: GW055: SPEED LOGS				Modification Type: SPEED LOGS				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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>Subtotal: CARRIER SPEED LOG</i>	<i>1 / 0.000</i>	<i>4 / 0.776</i>	<i>- / -</i>	<i>1 / 0.194</i>	<i>- / -</i>	<i>1 / 0.194</i>	<i>- / -</i>	<i>- / -</i>	<i>1 / 0.194</i>	<i>- / -</i>	<i>- / -</i>	<i>7 / 1.164</i>	
<i>Subtotal: Procurement, All Modification Items</i>	<i>- / 5.794</i>	<i>- / 7.440</i>	<i>- / 1.308</i>	<i>- / 5.902</i>	<i>- / -</i>	<i>- / 5.902</i>	<i>- / 2.084</i>	<i>- / 0.410</i>	<i>- / 0.349</i>	<i>- / -</i>	<i>- / 0.000</i>	<i>- / 23.287</i>	
Installation													
<i>Modification Item 1 of 4: AMPHIB SPEED LOG</i>	<i>- / 1.513</i>	<i>- / 0.000</i>	<i>- / 0.760</i>	<i>- / 1.140</i>	<i>- / 0.000</i>	<i>- / 1.140</i>	<i>- / 0.950</i>	<i>- / 0.380</i>	<i>- / 0.000</i>	<i>- / 0.000</i>	<i>- / 0.000</i>	<i>- / 4.743</i>	
<i>Modification Item 2 of 4: SURFACE SPEED LOG</i>	<i>- / 0.438</i>	<i>- / 1.140</i>	<i>- / 3.040</i>	<i>- / 2.850</i>	<i>- / 0.000</i>	<i>- / 2.850</i>	<i>- / 3.230</i>	<i>- / 0.760</i>	<i>- / 0.000</i>	<i>- / 0.000</i>	<i>- / 0.000</i>	<i>- / 11.458</i>	
<i>Modification Item 3 of 4: SUBMARINE SPEED LOG</i>	<i>- / 0.385</i>	<i>- / 0.665</i>	<i>- / 0.713</i>	<i>- / 1.465</i>	<i>- / 0.000</i>	<i>- / 1.465</i>	<i>- / 1.979</i>	<i>- / 1.465</i>	<i>- / 0.614</i>	<i>- / 0.188</i>	<i>- / 0.000</i>	<i>- / 7.474</i>	
<i>Modification Item 4 of 4: CARRIER SPEED LOG</i>	<i>- / 0.000</i>	<i>- / 0.450</i>	<i>- / 0.260</i>	<i>- / 0.260</i>	<i>- / 0.000</i>	<i>- / 0.260</i>	<i>- / 0.190</i>	<i>- / 0.000</i>	<i>- / 0.000</i>	<i>- / 0.190</i>	<i>- / 0.000</i>	<i>- / 1.350</i>	
<i>Subtotal: Installation</i>	<i>- / 2.336</i>	<i>- / 2.255</i>	<i>- / 4.773</i>	<i>- / 5.715</i>	<i>- / -</i>	<i>- / 5.715</i>	<i>- / 6.349</i>	<i>- / 2.605</i>	<i>- / 0.614</i>	<i>- / 0.378</i>	<i>- / 0.000</i>	<i>- / 25.025</i>	
Total													
Total Cost (Procurement + Support + Installation)	8.130	9.695	6.081	11.617	0.000	11.617	8.433	3.015	0.963	0.378	0.000	48.312	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6										P-1 Line Item Number / Title: 0670 / Other Navigation Equipment										Modification Number / Title: 4 / GW055: SPEED LOGS											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 4: AMPHIB SPEED LOG																															
Manufacturer Information																															
Manufacturer Name: WR Systems.															Manufacturer Location: Norfolk, VA																
Administrative Leadtime (in Months): 3															Production Leadtime (in Months): 8																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates						Dec 2017				Dec 2018				Dec 2019																	
Delivery Dates						Aug 2018				Aug 2019				Aug 2020																	
Manufacturer Name: TBD															Manufacturer Location: TBD																
Administrative Leadtime (in Months): 0															Production Leadtime (in Months): 0																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates																															
Delivery Dates																															
Installation Information																															
Method of Implementation: AIT:: Installation Name: AMPHIB AN/WSN-9 PROCUREMENT																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total																		
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																		
Prior Years		8 / 1.513	- / -	4 / 0.760	4 / 0.760	0 / 0.000	4 / 0.760	- / -	- / -	- / -	- / -	0 / 0.000	16 / 3.033																		
FY 2017		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2018		- / -	- / -	- / -	2 / 0.380	0 / 0.000	2 / 0.380	- / -	- / -	- / -	- / -	0 / 0.000	2 / 0.380																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.950	- / -	- / -	- / -	0 / 0.000	5 / 0.950																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.380	- / -	- / -	0 / 0.000	2 / 0.380																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		8 / 1.513	- / -	4 / 0.760	6 / 1.140	0 / 0.000	6 / 1.140	5 / 0.950	2 / 0.380	- / -	- / -	0 / 0.000	25 / 4.743																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	-	-	-	-	4	-	-	-	6	-	-	-	5	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	25
Out	8	-	-	-	-	4	-	-	-	6	-	-	-	5	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	25

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6										P-1 Line Item Number / Title: 0670 / Other Navigation Equipment										Modification Number / Title: 4 / GW055: SPEED LOGS											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 4: AMPHIB SPEED LOG																															
Installation Information																															
Method of Implementation: AIT:: Installation Name: AMPHIB SWITCHBOARD																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017		- / -	6 / 0.000	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	7 / -																		
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		- / -	6 / 0.000	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	7 / -																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	6	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7
Out	-	-	-	-	6	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6										P-1 Line Item Number / Title: 0670 / Other Navigation Equipment										Modification Number / Title: 4 / GW055: SPEED LOGS											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 2 of 4: SURFACE SPEED LOG																															
Manufacturer Information																															
Manufacturer Name: WR Systems															Manufacturer Location: Norfolk, VA																
Administrative Leadtime (in Months): 3															Production Leadtime (in Months): 8																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates		Dec 2016								Dec 2018				Dec 2019																	
Delivery Dates		Aug 2017								Aug 2019				Aug 2020																	
Installation Information																															
Method of Implementation: AIT:: Installation Name: SURFACE AN/WSN-9 PROCUREMENT																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		0 / 0.438		6 / 1.140		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		6 / 1.578							
FY 2017		- / -		- / -		16 / 3.040		15 / 2.850		0 / 0.000		15 / 2.850		- / -		- / -		- / -		- / -		0 / 0.000		31 / 5.890							
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		17 / 3.230		- / -		- / -		- / -		0 / 0.000		17 / 3.230							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		4 / 0.760		- / -		- / -		0 / 0.000		4 / 0.760							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		0 / 0.438		6 / 1.140		16 / 3.040		15 / 2.850		0 / 0.000		15 / 2.850		17 / 3.230		4 / 0.760		- / -		- / -		0 / 0.000		58 / 11.458							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	16	-	-	-	15	-	-	-	17	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	58
Out	-	-	-	3	3	16	-	-	-	15	-	-	-	17	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	58

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6					P-1 Line Item Number / Title: 0670 / Other Navigation Equipment										Modification Number / Title: 4 / GW055: SPEED LOGS																
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:																					
Modification Item 3 of 4: SUBMARINE SPEED LOG																															
Manufacturer Information																															
Manufacturer Name: WR Systems										Manufacturer Location: Norfolk, VA																					
Administrative Leadtime (in Months): 3										Production Leadtime (in Months): 8																					
Dates		FY 2017			FY 2018			FY 2019			FY 2020			FY 2021			FY 2022			FY 2023											
Contract Dates		Dec 2016			Dec 2017			Dec 2018			Dec 2019			Dec 2020																	
Delivery Dates		Aug 2017			Aug 2018			Aug 2019			Aug 2020			Aug 2021																	
Manufacturer Name: WR Systems										Manufacturer Location: Norfolk, VA																					
Administrative Leadtime (in Months): 3										Production Leadtime (in Months): 8																					
Dates		FY 2017			FY 2018			FY 2019			FY 2020			FY 2021			FY 2022			FY 2023											
Contract Dates					Dec 2017			Dec 2018			Dec 2019			Dec 2020			Dec 2021														
Delivery Dates					Aug 2018			Aug 2019			Aug 2020			Aug 2021			Aug 2022														
Installation Information																															
Method of Implementation: AIT:: Installation Name: SUBMARINE AN/WSN-9 PROCUREMENT (SSBN)																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total																		
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																		
Prior Years		- / -	2 / 0.475	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 0.475																		
FY 2017		- / -	- / -	3 / 0.713	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 0.713																		
FY 2018		- / -	- / -	- / -	3 / 0.713	0 / 0.000	3 / 0.713	- / -	- / -	- / -	- / -	0 / 0.000	3 / 0.713																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.475	- / -	- / -	- / -	0 / 0.000	2 / 0.475																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 0.713	- / -	- / -	0 / 0.000	3 / 0.713																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.238	- / -	0 / 0.000	1 / 0.238																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		- / -	2 / 0.475	3 / 0.713	3 / 0.713	0 / 0.000	3 / 0.713	2 / 0.475	3 / 0.713	1 / 0.238	- / -	0 / 0.000	14 / 3.327																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	-	-	-	3	-	-	-	1	-	-	-	-	-	-	-	-	14
Out	-	2	-	-	-	3	-	-	-	3	-	-	-	2	-	-	-	3	-	-	-	1	-	-	-	-	-	-	-	-	14

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6										P-1 Line Item Number / Title: 0670 / Other Navigation Equipment										Modification Number / Title: 4 / GW055: SPEED LOGS											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 3 of 4: SUBMARINE SPEED LOG																															
Installation Information																															
Method of Implementation: AIT:: Installation Name: SUBMARINE AN/WSN-9 PROCUREMENT (SSN)																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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		2 / 0.385	1 / 0.190	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 0.575																		
FY 2017		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2018		- / -	- / -	- / -	4 / 0.752	0 / 0.000	4 / 0.752	- / -	- / -	- / -	- / -	0 / 0.000	4 / 0.752																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	8 / 1.504	- / -	- / -	- / -	0 / 0.000	8 / 1.504																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 0.752	- / -	- / -	0 / 0.000	4 / 0.752																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.376	- / -	0 / 0.000	2 / 0.376																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.188	0 / 0.000	1 / 0.188																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		2 / 0.385	1 / 0.190	- / -	4 / 0.752	0 / 0.000	4 / 0.752	8 / 1.504	4 / 0.752	2 / 0.376	1 / 0.188	0 / 0.000	22 / 4.147																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	-	-	-	-	4	-	-	-	8	-	-	-	4	-	-	-	2	-	-	-	1	-	-	-	-	22
Out	2	-	-	-	1	-	-	-	-	4	-	-	-	8	-	-	-	4	-	-	-	2	-	-	-	1	-	-	-	-	22

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6										P-1 Line Item Number / Title: 0670 / Other Navigation Equipment										Modification Number / Title: 4 / GW055: SPEED LOGS											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 4 of 4: CARRIER SPEED LOG																															
Manufacturer Information																															
Manufacturer Name: WR Systems															Manufacturer Location: Norfolk, VA																
Administrative Leadtime (in Months): 3															Production Leadtime (in Months): 8																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates		Dec 2016																													
Delivery Dates		Aug 2017																													
Manufacturer Name: WR Systems															Manufacturer Location: Norfolk, VA																
Administrative Leadtime (in Months): 3															Production Leadtime (in Months): 8																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates										Dec 2018												Dec 2021									
Delivery Dates										Aug 2019												Aug 2022									
Installation Information																															
Method of Implementation: AIT:: Installation Name: CARRIER AN/WSN-9 PROCUREMENT																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total																		
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																	
Prior Years		- / -	1 / 0.190	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	1 / 0.190																		
FY 2017		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.190	- / -	- / -	- / -	- / -	0 / 0.000																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.190	0 / 0.000	1 / 0.190																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		- / -	1 / 0.190	- / -	- / -	- / -	- / -	1 / 0.190	- / -	- / -	1 / 0.190	0 / 0.000	3 / 0.570																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	3
Out	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	3

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6										P-1 Line Item Number / Title: 0670 / Other Navigation Equipment										Modification Number / Title: 4 / GW055: SPEED LOGS											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 4 of 4: CARRIER SPEED LOG																															
Installation Information																															
Method of Implementation: AIT:: Installation Name: CARRIER AN/WSN-8 TECH REFRESH																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017		- / -	0 / 0.260	2 / 0.260	2 / 0.260	0 / 0.000	2 / 0.260	- / -	- / -	- / -	- / -	0 / 0.000	4 / 0.780																		
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		- / -	0 / 0.260	2 / 0.260	2 / 0.260	0 / 0.000	2 / 0.260	- / -	- / -	- / -	- / -	0 / 0.000	4 / 0.780																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	2	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	
Out	-	-	-	-	-	2	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	
Footnotes: ⁽¹⁷⁾ AMPHIB AN/WSN-9 PROCUREMENT: Systems procured in FY16 as Economic Ordering Quantities and to maintain shipboard configuration for installation in FY16-19. ⁽¹⁸⁾ AMPHIB SWITCHBOARD: Hardware procured in FY17 as Economic Ordering Quantities for installation in FY17 and FY18. Installation costs included in procurement costs. ⁽¹⁹⁾ SUBMARINE AN/WSN-9 PROCUREMENT (SSBN): Prior year systems procured and funded under P40A Cost Element GW013. ⁽²⁰⁾ SUBMARINE AN/WSN-9 PROCUREMENT (SSN): Prior year systems procured and funded under P40A Cost Element GW013. ⁽²¹⁾ CARRIER AN/WSN-9 PROCUREMENT: Prior year systems procured and funded under P40A Cost Element GW013. ⁽²²⁾ CARRIER AN/WSN-8 TECH REFRESH: Systems procured in FY17 as Economic Ordering Quantities and to maintain shipboard configuration for installation in FY18 and FY19.																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6				P-1 Line Item Number / Title: 0670 / Other Navigation Equipment						Modification Number / Title: 5 / GW056: NAVY ECDIS		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	5.880	18.120	11.196	0.000	11.196	30.070	22.798	26.260	27.007	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	5.880	18.120	11.196	0.000	11.196	30.070	22.798	26.260	27.007	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	5.880	18.120	11.196	0.000	11.196	30.070	22.798	26.260	27.007	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: These funds are required for the software build, procurement, and installation of Navy ECDIS hardware and software to replace legacy ECDIS-N capability on amphibious and surface platforms.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy								Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6				P-1 Line Item Number / Title: 0670 / Other Navigation Equipment				Modification Number / Title: 5 / GW056: NAVY ECDIS					
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: GW056: NAVY ECDIS				Modification Type: NAVY ECDIS				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2: NAVY ECDIS NON-RECURRING													
B Kits													
Non-Recurring													
1.1.1) NAVY ECDIS ACQUISITION DOCUMENTATION - Organic ⁽²³⁾	- / -	- / 5.880	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing	
Subtotal: Non-Recurring	- / 0.000	- / 5.880	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing	
Subtotal: NAVY ECDIS NON-RECURRING	- / -	- / 5.880	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing	
Modification Item 2 of 2: NAVY ECDIS PROCUREMENT													
B Kits													
Recurring													
2.1.1) NAVY ECDIS SOFTWARE PRODUCTION - Organic ⁽²⁴⁾	- / -	- / -	- / 16.620	- / 8.136	- / -	- / 8.136	- / 0.566	- / 8.542	- / 0.420	- / 8.887	Continuing	Continuing	
2.1.2) AMPHIB NAVY ECDIS HARDWARE - NonOrganic ⁽²⁵⁾	- / -	- / -	- / -	- / -	- / -	- / -	8 / 8.320	4 / 4.248	8 / 8.664	4 / 4.419	Continuing	Continuing	
2.1.3) SURFACE NAVY ECDIS HARDWARE - NonOrganic ⁽²⁶⁾	- / -	- / -	1 / 1.000	2 / 2.040	- / -	2 / 2.040	11 / 11.456	5 / 5.310	8 / 8.664	7 / 7.732	Continuing	Continuing	
Subtotal: Recurring	- / 0.000	- / -	- / 17.620	- / 10.176	- / -	- / 10.176	- / 20.342	- / 18.100	- / 17.748	- / 21.038	Continuing	Continuing	
Subtotal: NAVY ECDIS PROCUREMENT	- / -	- / -	1 / 17.620	2 / 10.176	- / -	2 / 10.176	19 / 20.342	9 / 18.100	16 / 17.748	11 / 21.038	Continuing	Continuing	
Subtotal: Procurement, All Modification Items	- / 0.000	- / 5.880	- / 17.620	- / 10.176	- / -	- / 10.176	- / 20.342	- / 18.100	- / 17.748	- / 21.038	Continuing	Continuing	
Installation													
Modification Item 2 of 2: NAVY ECDIS PROCUREMENT	- / 0.000	- / 0.000	- / 0.500	- / 1.020	- / 0.000	- / 1.020	- / 9.728	- / 4.698	- / 8.512	- / 5.969	Continuing	Continuing	
Subtotal: Installation	- / 0.000	- / -	- / 0.500	- / 1.020	- / -	- / 1.020	- / 9.728	- / 4.698	- / 8.512	- / 5.969	Continuing	Continuing	
Total													
Total Cost (Procurement + Support + Installation)	0.000	5.880	18.120	11.196	0.000	11.196	30.070	22.798	26.260	27.007	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6	P-1 Line Item Number / Title: 0670 / Other Navigation Equipment	Modification Number / Title: 5 / GW056: NAVY ECDIS
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
Modification Item 1 of 2: NAVY ECDIS NON-RECURRING		

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6										P-1 Line Item Number / Title: 0670 / Other Navigation Equipment										Modification Number / Title: 5 / GW056: NAVY ECDIS											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 2 of 2: NAVY ECDIS PROCUREMENT																															
Manufacturer Information																															
Manufacturer Name: TBD															Manufacturer Location: TBD																
Administrative Leadtime (in Months): 0															Production Leadtime (in Months): 0																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates						Dec 2017				Dec 2018				Dec 2019				Dec 2020				Dec 2021				Dec 2022					
Delivery Dates						Jul 2018				Jul 2019				Jul 2020				Jul 2021				Jul 2022				Jul 2023					
Manufacturer Name: TBD															Manufacturer Location: TBD																
Administrative Leadtime (in Months): 0															Production Leadtime (in Months): 0																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates										Dec 2018				Dec 2019				Dec 2020				Dec 2021				Dec 2022					
Delivery Dates										Jul 2019				Jul 2020				Jul 2021				Jul 2022				Jul 2023					
Installation Information																															
Method of Implementation: AIT:: Installation Name: AMPHIB NAVY ECDIS HARDWARE																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	8 / 4.096	- / -	- / -	- / -	0 / 0.000	8 / 4.096																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 2.088	- / -	- / -	0 / 0.000	4 / 2.088																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	8 / 4.256	- / -	0 / 0.000	8 / 4.256																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 2.171	0 / 0.000	4 / 2.171																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing																		
Total		- / -	- / -	- / -	- / -	- / -	- / -	8 / 4.096	4 / 2.088	8 / 4.256	4 / 2.171	Continuing	Continuing																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	-	-	-	4	-	-	-	8	-	-	-	4	Cont.	Cont.
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	4	-	-	-	8	-	-	-	4	Cont.	Cont.

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																								
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6										P-1 Line Item Number / Title: 0670 / Other Navigation Equipment										Modification Number / Title: 5 / GW056: NAVY ECDIS														
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																			
Modification Item 2 of 2: NAVY ECDIS PROCUREMENT																																		
Installation Information																																		
Method of Implementation: AIT:: Installation Name: SURFACE NAVY ECDIS HARDWARE																																		
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																					
FY 2018		- / -	- / -	1 / 0.500	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	1 / 0.500																					
FY 2019		- / -	- / -	- / -	2 / 1.020	0 / 0.000	2 / 1.020	- / -	- / -	- / -	- / -	0 / 0.000	2 / 1.020																					
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	11 / 5.632	- / -	- / -	- / -	0 / 0.000	11 / 5.632																					
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 2.610	- / -	- / -	0 / 0.000	5 / 2.610																					
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	8 / 4.256	- / -	0 / 0.000	8 / 4.256																					
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	7 / 3.798	0 / 0.000	7 / 3.798																					
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing																					
Total		- / -	- / -	1 / 0.500	2 / 1.020	0 / 0.000	2 / 1.020	11 / 5.632	5 / 2.610	8 / 4.256	7 / 3.798	Continuing	Continuing																					
Installation Schedule																																		
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4					
In	-	-	-	-	-	-	-	-	1	-	-	-	2	-	-	-	11	-	-	-	5	-	-	-	8	-	-	-	7	Cont.	Cont.			
Out	-	-	-	-	-	-	-	-	1	-	-	-	2	-	-	-	11	-	-	-	5	-	-	-	8	-	-	-	7	Cont.	Cont.			
Method of Implementation (Organic): NAVY ECDIS SOFTWARE PRODUCTION - Not Installed																														Installation Quantity: 0				
Footnotes: ⁽²³⁾ NAVY ECDIS ACQUISITION DOCUMENTATION: Support funding required for the execution of new software to replace legacy ECDIS-N Voyage Management Software (VMS). Funding supports generation of Navy ECDIS ACAT III Program Acquisition Documentation to support award of software production contract in FY18 (item 2.1). ⁽²⁴⁾ NAVY ECDIS SOFTWARE PRODUCTION: Funding is for initial Navy ECDIS software production build and follow-on Navy ECDIS software builds on a two-year cycle. ⁽²⁵⁾ AMPHIB NAVY ECDIS HARDWARE: Funds provide for the procurement and installation of hardware upgrades to replace legacy ECDIS-N capability on amphibious platforms. ⁽²⁶⁾ SURFACE NAVY ECDIS HARDWARE: Funds provide for the procurement and installation of hardware upgrades to replace legacy ECDIS-N capability on surface platforms.																																		

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6					P-1 Line Item Number / Title: 0670 / Other Navigation Equipment					Modification Number / Title: 6 / GW058: NAVSSI CAPSTONE		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.281	2.651	3.010	1.702	0.000	1.702	1.387	0.000	0.000	0.000	0.000	9.031
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.281	2.651	3.010	1.702	0.000	1.702	1.387	0.000	0.000	0.000	0.000	9.031
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.281	2.651	3.010	1.702	0.000	1.702	1.387	0.000	0.000	0.000	0.000	9.031
<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: These funds are required for the procurement, installation, and NRE/ILS/Support of NAVSSI Capstone upgrades on LHD platforms to support Ship Self Defense System (SSDS) upgrades.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy								Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6				P-1 Line Item Number / Title: 0670 / Other Navigation Equipment				Modification Number / Title: 6 / GW058: NAVSSI CAPSTONE					
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: GW058: NAVSSI CAPSTONE				Modification Type: NAVSSI CAPSTONE				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> GW058: NAVSSI CAPSTONE													
B Kits													
Recurring													
1.1.1) AMPHIB NAVSSI CAPSTONE - NonOrganic	- / 0.060	1 / 1.338	1 / 1.449	1 / 1.475	- / -	1 / 1.475	- / -	- / -	- / -	- / -	- / -	3 / 4.322	
<i>Subtotal: Recurring</i>	- / 0.060	- / 1.338	- / 1.449	- / 1.475	- / -	- / 1.475	- / -	- / -	- / -	- / -	- / 0.000	- / 4.322	
<i>Subtotal: GW058: NAVSSI CAPSTONE</i>	- / 0.060	1 / 1.338	1 / 1.449	1 / 1.475	- / -	1 / 1.475	- / -	- / -	- / -	- / -	- / -	3 / 4.322	
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.060	- / 1.338	- / 1.449	- / 1.475	- / -	- / 1.475	- / -	- / -	- / -	- / -	- / 0.000	- / 4.322	
Installation													
<i>Modification Item 1 of 1:</i> GW058: NAVSSI CAPSTONE	- / 0.221	- / 1.313	- / 1.561	- / 0.227	- / 0.000	- / 0.227	- / 1.387	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 4.709	
<i>Subtotal: Installation</i>	- / 0.221	- / 1.313	- / 1.561	- / 0.227	- / -	- / 0.227	- / 1.387	- / -	- / -	- / -	- / 0.000	- / 4.709	
Total													
Total Cost (Procurement + Support + Installation)	0.281	2.651	3.010	1.702	0.000	1.702	1.387	0.000	0.000	0.000	0.000	9.031	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6										P-1 Line Item Number / Title: 0670 / Other Navigation Equipment										Modification Number / Title: 6 / GW058: NAVSSI CAPSTONE												
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																	
Modification Item 1 of 1: GW058: NAVSSI CAPSTONE																																
Manufacturer Information																																
Manufacturer Name: TBD															Manufacturer Location: TBD																	
Administrative Leadtime <i>(in Months)</i> : 3															Production Leadtime <i>(in Months)</i> : 8																	
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023						
Contract Dates						Dec 2017				Dec 2018																						
Delivery Dates						Aug 2018				Aug 2019																						
Installation Information																																
Method of Implementation: AIT:: Installation Name: AMPHIB NAVSSI CAPSTONE																																
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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 2017		0 / 0.221		1 / 1.313		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		1 / 1.534						
FY 2018		- / -		- / -		1 / 1.561		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		1 / 1.561						
FY 2019		- / -		- / -		- / -		0 / 0.227		0 / 0.000		0 / 0.227		1 / 1.387		- / -		- / -		- / -		- / -		0 / 0.000		1 / 1.614						
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
Total		0 / 0.221		1 / 1.313		1 / 1.561		0 / 0.227		0 / 0.000		0 / 0.227		1 / 1.387		- / -		- / -		- / -		- / -		0 / 0.000		3 / 4.709						
Installation Schedule																																
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot	
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
In	-	-	-	-	1	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
Out	-	-	-	-	1	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3

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Exhibit P-3a, Individual Modification: PB 2019 Navy						Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6				P-1 Line Item Number / Title: 0670 / Other Navigation Equipment				Modification Number / Title: 7 / GW059: EMERGENCY NAVIGATION LAPTOP			

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

Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	4.095	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.095
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	4.095	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.095
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	4.095	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.095
(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:

These funds are required for the procurement and installation of Emergency Navigation Laptops (ENL) on amphibious, surface and carrier platforms.

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6					P-1 Line Item Number / Title: 0670 / Other Navigation Equipment					Modification Number / Title: 7 / GW059: EMERGENCY NAVIGATION LAPTOP			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: GW059: EMERGENCY NAVIGATION LAPTOP					Modification Type: EMERGENCY NAVIGATION LAPTOP					Related RDT&E PEs:			
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> GW059: EMERGENCY NAVIGATION LAPTOP													
B Kits													
Recurring													
1.1.1) AMPHIB EMERGENCY NAVIGATION LAPTOP - NonOrganic	51 / 0.686	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	51 / 0.686	
1.1.2) SURFACE EMERGENCY NAVIGATION LAPTOP - NonOrganic	189 / 2.544	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	189 / 2.544	
1.1.3) CARRIER EMERGENCY NAVIGATION LAPTOP - NonOrganic	10 / 0.135	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 0.135	
<i>Subtotal: Recurring</i>	<i>- / 3.365</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 0.000</i>	<i>- / 3.365</i>	
<i>Subtotal: GW059: EMERGENCY NAVIGATION LAPTOP</i>	<i>250 / 3.365</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>250 / 3.365</i>	
<i>Subtotal: Procurement, All Modification Items</i>	<i>- / 3.365</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 0.000</i>	<i>- / 3.365</i>	
Installation													
<i>Modification Item 1 of 1:</i> GW059: EMERGENCY NAVIGATION LAPTOP													
<i>Subtotal: Installation</i>	<i>- / 0.730</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 0.000</i>	<i>- / 0.730</i>	
Total													
Total Cost (Procurement + Support + Installation)	4.095	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.095	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6					P-1 Line Item Number / Title: 0670 / Other Navigation Equipment					Modification Number / Title: 7 / GW059: EMERGENCY NAVIGATION LAPTOP		
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:				
Modification Item 1 of 1: GW059: EMERGENCY NAVIGATION LAPTOP												
Manufacturer Information												
Manufacturer Name: Multiple Vendors						Manufacturer Location: Various						
Administrative Leadtime (in Months): 4						Production Leadtime (in Months): 6						
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023					
Contract Dates												
Delivery Dates												
Manufacturer Name: Multiple Vendors						Manufacturer Location: Various						
Administrative Leadtime (in Months): 4						Production Leadtime (in Months): 6						
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023					
Contract Dates												
Delivery Dates												
Manufacturer Name: Multiple Vendors						Manufacturer Location: Various						
Administrative Leadtime (in Months): 4						Production Leadtime (in Months): 6						
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023					
Contract Dates												
Delivery Dates												
Installation Information												
Method of Implementation: AIT:: Installation Name: AMPHIB EMERGENCY NAVIGATION LAPTOP												
Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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	51 / 0.449	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	51 / 0.449
FY 2017	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	51 / 0.449	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	51 / 0.449

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6	P-1 Line Item Number / Title: 0670 / Other Navigation Equipment	Modification Number / Title: 7 / GW059: EMERGENCY NAVIGATION LAPTOP

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

Modification Item 1 of 1: GW059: EMERGENCY NAVIGATION LAPTOP

Installation Information

Method of Implementation: AIT:: Installation Name: AMPHIB EMERGENCY NAVIGATION LAPTOP

Installation Schedule

	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	12	13	13	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	51
Out	-	12	13	13	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	51

Method of Implementation: AIT:: Installation Name: SURFACE EMERGENCY NAVIGATION LAPTOP

Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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	189 / 0.189	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	189 / 0.189
FY 2017	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	189 / 0.189	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	189 / 0.189

Installation Schedule

	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	47	47	47	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	189
Out	-	47	47	47	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	189

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6	P-1 Line Item Number / Title: 0670 / Other Navigation Equipment	Modification Number / Title: 7 / GW059: EMERGENCY NAVIGATION LAPTOP

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

Modification Item 1 of 1: GW059: EMERGENCY NAVIGATION LAPTOP

Installation Information

Method of Implementation: AIT:: Installation Name: CARRIER EMERGENCY NAVIGATION LAPTOP

Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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	10 / 0.092	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	10 / 0.092
FY 2017	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	10 / 0.092	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	10 / 0.092

Installation Schedule

	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10
Out	-	2	2	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6				P-1 Line Item Number / Title: 0670 / Other Navigation Equipment						Modification Number / Title: 8 / GW060: NEXT GENERATION FATHOMETER		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	3.509	3.035	2.792	1.864	0.000	1.864	1.348	0.000	0.000	0.000	0.000	12.548
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	3.509	3.035	2.792	1.864	0.000	1.864	1.348	0.000	0.000	0.000	0.000	12.548
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	3.509	3.035	2.792	1.864	0.000	1.864	1.348	0.000	0.000	0.000	0.000	12.548
<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: These funds are required for the procurement, installation, and NRE/ILS/support of Next Generation Fathometers to replace legacy AN/UQN-4/4A systems on amphibious, surface and carrier platforms.												

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6					P-1 Line Item Number / Title: 0670 / Other Navigation Equipment					Modification Number / Title: 8 / GW060: NEXT GENERATION FATHOMETER			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: GW060: NEXT GENERATION FATHOMETER				Modification Type: NEXT GENERATION FATHOMETER				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> GW060: NEXT GENERATION FATHOMETER													
B Kits													
Recurring													
1.1.1) AMPHIB NEXT GENERATION FATHOMETER - NonOrganic	5 / 0.604	8 / 0.720	11 / 1.010	6 / 0.562	- / -	6 / 0.562	4 / 0.382	- / -	- / -	- / -	- / -	34 / 3.278	
1.1.2) SURFACE NEXT GENERATION FATHOMETER - NonOrganic	10 / 1.207	19 / 1.710	12 / 1.102	8 / 0.749	- / -	8 / 0.749	3 / 0.287	- / -	- / -	- / -	- / -	52 / 5.055	
1.1.3) CARRIER NEXT GENERATION FATHOMETER - NonOrganic	1 / 0.108	- / -	3 / 0.281	3 / 0.287	- / -	3 / 0.287	5 / 0.487	- / -	- / -	- / -	- / -	12 / 1.163	
<i>Subtotal: Recurring</i>	- / 1.919	- / 2.430	- / 2.393	- / 1.598	- / -	- / 1.598	- / 1.156	- / -	- / -	- / -	- / 0.000	- / 9.496	
<i>Subtotal: GW060: NEXT GENERATION FATHOMETER</i>	16 / 1.919	27 / 2.430	26 / 2.393	17 / 1.598	- / -	17 / 1.598	12 / 1.156	- / -	- / -	- / -	- / -	98 / 9.496	
<i>Subtotal: Procurement, All Modification Items</i>	- / 1.919	- / 2.430	- / 2.393	- / 1.598	- / -	- / 1.598	- / 1.156	- / -	- / -	- / -	- / 0.000	- / 9.496	
Installation													
<i>Modification Item 1 of 1:</i> GW060: NEXT GENERATION FATHOMETER	- / 1.590	- / 0.605	- / 0.399	- / 0.266	- / 0.000	- / 0.266	- / 0.192	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 3.052	
<i>Subtotal: Installation</i>	- / 1.590	- / 0.605	- / 0.399	- / 0.266	- / -	- / 0.266	- / 0.192	- / -	- / -	- / -	- / 0.000	- / 3.052	
Total													
Total Cost (Procurement + Support + Installation)	3.509	3.035	2.792	1.864	0.000	1.864	1.348	0.000	0.000	0.000	0.000	12.548	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy								Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6				P-1 Line Item Number / Title: 0670 / Other Navigation Equipment				Modification Number / Title: 8 / GW060: NEXT GENERATION FATHOMETER				
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:				
Modification Item 1 of 1: GW060: NEXT GENERATION FATHOMETER												
Manufacturer Information												
Manufacturer Name: Knudsen						Manufacturer Location: Ogdensburg, NY						
Administrative Leadtime (in Months): 3						Production Leadtime (in Months): 3						
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023					
Contract Dates	Dec 2016	Dec 2017	Dec 2018	Dec 2019								
Delivery Dates	Mar 2017	Mar 2018	Mar 2019	Mar 2020								
Manufacturer Name: Knudsen						Manufacturer Location: Ogdensburg, NY						
Administrative Leadtime (in Months): 3						Production Leadtime (in Months): 3						
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023					
Contract Dates		Dec 2017	Dec 2018	Dec 2019								
Delivery Dates		Mar 2018	Mar 2019	Mar 2020								
Manufacturer Name: Knudsen						Manufacturer Location: Ogdensburg, NY						
Administrative Leadtime (in Months): 3						Production Leadtime (in Months): 3						
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023					
Contract Dates	Dec 2016	Dec 2017	Dec 2018	Dec 2019								
Delivery Dates	Mar 2017	Mar 2018	Mar 2019	Mar 2020								
Installation Information												
Method of Implementation: AIT:: Installation Name: AMPHIB NEXT GENERATION FATHOMETER												
Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	5 / 0.569	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	5 / 0.569
FY 2017	- / -	8 / 0.120	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	8 / 0.120
FY 2018	- / -	- / -	11 / 0.168	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	11 / 0.168
FY 2019	- / -	- / -	- / -	6 / 0.094	0 / 0.000	6 / 0.094	- / -	- / -	- / -	- / -	0 / 0.000	6 / 0.094
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	4 / 0.064	- / -	- / -	- / -	0 / 0.000	4 / 0.064
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	5 / 0.569	8 / 0.120	11 / 0.168	6 / 0.094	0 / 0.000	6 / 0.094	4 / 0.064	- / -	- / -	- / -	0 / 0.000	34 / 1.015

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy																							Date: February 2018								
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6										P-1 Line Item Number / Title: 0670 / Other Navigation Equipment										Modification Number / Title: 8 / GW060: NEXT GENERATION FATHOMETER											
ID Code (A=Service Ready, B=Not Service Ready) :																	MDAP/MAIS Code:														
Modification Item 1 of 1: GW060: NEXT GENERATION FATHOMETER																															
Installation Information																															
Method of Implementation: AIT:: Installation Name: AMPHIB NEXT GENERATION FATHOMETER																															
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	5	-	-	4	4	-	-	6	5	-	-	3	3	-	-	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	34
Out	5	-	-	4	4	-	-	6	5	-	-	3	3	-	-	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	34
Method of Implementation: AIT:: Installation Name: SURFACE NEXT GENERATION FATHOMETER																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total																		
		<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>																	
Prior Years		10 / 1.021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	10 / 1.021																		
FY 2017		- / -	19 / 0.285	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	19 / 0.285																		
FY 2018		- / -	- / -	12 / 0.184	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	12 / 0.184																		
FY 2019		- / -	- / -	- / -	8 / 0.125	0 / 0.000	8 / 0.125	- / -	- / -	- / -	- / -	0 / 0.000	8 / 0.125																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	3 / 0.048	- / -	- / -	- / -	0 / 0.000	3 / 0.048																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		10 / 1.021	19 / 0.285	12 / 0.184	8 / 0.125	0 / 0.000	8 / 0.125	3 / 0.048	- / -	- / -	- / -	0 / 0.000	52 / 1.663																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	10	-	-	10	9	-	-	6	6	-	-	4	4	-	-	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	52
Out	10	-	-	10	9	-	-	6	6	-	-	4	4	-	-	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	52

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6	P-1 Line Item Number / Title: 0670 / Other Navigation Equipment	Modification Number / Title: 8 / GW060: NEXT GENERATION FATHOMETER

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

Modification Item 1 of 1: GW060: NEXT GENERATION FATHOMETER

Installation Information

Method of Implementation: AIT:: Installation Name: CARRIER NEXT GENERATION FATHOMETER

Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	1 / 0.200	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	1 / 0.200
FY 2017	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	3 / 0.047	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 0.047
FY 2019	- / -	- / -	- / -	3 / 0.047	0 / 0.000	3 / 0.047	- / -	- / -	- / -	- / -	0 / 0.000	3 / 0.047
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.080	- / -	- / -	- / -	0 / 0.000	5 / 0.080
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	1 / 0.200	3 / 0.047	3 / 0.047	0 / 0.000	3 / 0.047	5 / 0.080	- / -	- / -	- / -	0 / 0.000	12 / 0.374

Installation Schedule

	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	1	-	-	-	3	-	-	-	3	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	12
Out	-	-	-	-	1	-	-	-	3	-	-	-	3	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	12

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6				P-1 Line Item Number / Title: 0670 / Other Navigation Equipment						Modification Number / Title: 9 / GW061: MK 27 REPLACEMENT		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	2.088	2.575	1.355	1.480	0.000	1.480	0.870	0.510	0.100	0.000	0.000	8.978
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	2.088	2.575	1.355	1.480	0.000	1.480	0.870	0.510	0.100	0.000	0.000	8.978
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	2.088	2.575	1.355	1.480	0.000	1.480	0.870	0.510	0.100	0.000	0.000	8.978
<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: These funds are required for the procurement and installation of replacement for legacy MK27 Backup Heading Reference systems on amphibious, surface, and submarine platforms.												

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy									Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6				P-1 Line Item Number / Title: 0670 / Other Navigation Equipment					Modification Number / Title: 9 / GW061: MK 27 REPLACEMENT				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: GW061: MK 27 REPLACEMENT				Modification Type: MK 27 REPLACEMENT				Related RDT&E PEs: 0204228N					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> GW061: MK 27 REPLACEMENT													
B Kits													
Recurring													
1.1.1) AMPHIB AN/WSN-11 PROCUREMENT - NonOrganic ⁽²⁷⁾	5 / 0.619	7 / 0.875	- / -	- / -	- / -	- / -	1 / 0.125	- / -	- / -	- / -	- / -	13 / 1.619	
1.1.2) SURFACE AN/WSN-11 PROCUREMENT - NonOrganic ⁽²⁸⁾	6 / 0.650	9 / 1.125	- / -	2 / 0.250	- / -	2 / 0.250	- / -	- / -	- / -	- / -	- / -	17 / 2.025	
1.1.3) SUBMARINE AN/WSN-11 PROCUREMENT - NonOrganic ⁽²⁹⁾	2 / 0.000	3 / 0.375	3 / 0.375	2 / 0.250	- / -	2 / 0.250	3 / 0.375	1 / 0.125	- / -	- / -	- / -	14 / 1.500	
<i>Subtotal: Recurring</i>	- / 1.269	- / 2.375	- / 0.375	- / 0.500	- / -	- / 0.500	- / 0.500	- / 0.125	- / -	- / -	- / 0.000	- / 5.144	
<i>Subtotal: GW061: MK 27 REPLACEMENT</i>	13 / 1.269	19 / 2.375	3 / 0.375	4 / 0.500	- / -	4 / 0.500	4 / 0.500	1 / 0.125	- / -	- / -	- / -	44 / 5.144	
<i>Subtotal: Procurement, All Modification Items</i>	- / 1.269	- / 2.375	- / 0.375	- / 0.500	- / -	- / 0.500	- / 0.500	- / 0.125	- / -	- / -	- / 0.000	- / 5.144	
Installation													
<i>Modification Item 1 of 1:</i> GW061: MK 27 REPLACEMENT													
<i>Subtotal: Installation</i>	- / 0.819	- / 0.200	- / 0.980	- / 0.980	- / 0.000	- / 0.980	- / 0.370	- / 0.385	- / 0.100	- / 0.000	- / 0.000	- / 3.834	
Total													
Total Cost (Procurement + Support + Installation)	2.088	2.575	1.355	1.480	0.000	1.480	0.870	0.510	0.100	0.000	0.000	8.978	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy							Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6				P-1 Line Item Number / Title: 0670 / Other Navigation Equipment				Modification Number / Title: 9 / GW061: MK 27 REPLACEMENT				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Modification Item 1 of 1: GW061: MK 27 REPLACEMENT												
Manufacturer Information												
Manufacturer Name: WR Systems							Manufacturer Location: Norfolk, VA					
Administrative Leadtime (in Months): 3							Production Leadtime (in Months): 6					
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023					
Contract Dates	Mar 2017			Mar 2020								
Delivery Dates	Sep 2017			Sep 2020								
Manufacturer Name: WR Systems							Manufacturer Location: Norfolk, VA					
Administrative Leadtime (in Months): 3							Production Leadtime (in Months): 6					
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023					
Contract Dates	Mar 2017		Mar 2019									
Delivery Dates	Sep 2017		Sep 2019									
Manufacturer Name: WR Systems							Manufacturer Location: Norfolk, VA					
Administrative Leadtime (in Months): 3							Production Leadtime (in Months): 6					
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023					
Contract Dates	Dec 2016	Dec 2017	Dec 2018	Dec 2019	Dec 2020							
Delivery Dates	Jun 2017	Jun 2018	Jun 2019	Jun 2020	Jun 2021							
Installation Information												
Method of Implementation: AIT:: Installation Name: AMPHIB AN/WSN-11 PROCUREMENT												
Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	5 / 0.375	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	5 / 0.375
FY 2017	- / -	- / -	4 / 0.340	3 / 0.255	0 / 0.000	3 / 0.255	- / -	- / -	- / -	- / -	0 / 0.000	7 / 0.595
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.085	- / -	- / -	0 / 0.000	1 / 0.085
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	5 / 0.375	- / -	4 / 0.340	3 / 0.255	0 / 0.000	3 / 0.255	- / -	1 / 0.085	- / -	- / -	0 / 0.000	13 / 1.055

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy																								Date: February 2018							
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6												P-1 Line Item Number / Title: 0670 / Other Navigation Equipment												Modification Number / Title: 9 / GW061: MK 27 REPLACEMENT							
ID Code (A=Service Ready, B=Not Service Ready) :																		MDAP/MAIS Code:													
Modification Item 1 of 1: GW061: MK 27 REPLACEMENT																															
Installation Information																															
Method of Implementation: AIT:: Installation Name: AMPHIB AN/WSN-11 PROCUREMENT																															
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	5	-	-	-	-	4	-	-	-	3	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Out	5	-	-	-	-	4	-	-	-	3	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Method of Implementation: AIT:: Installation Name: SURFACE AN/WSN-11 PROCUREMENT																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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		6 / 0.444	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	6 / 0.444																		
FY 2017		- / -	- / -	4 / 0.340	5 / 0.425	0 / 0.000	5 / 0.425	- / -	- / -	- / -	- / -	0 / 0.000	9 / 0.765																		
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.170	- / -	- / -	- / -	0 / 0.000	2 / 0.170																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		6 / 0.444	- / -	4 / 0.340	5 / 0.425	0 / 0.000	5 / 0.425	2 / 0.170	- / -	- / -	- / -	0 / 0.000	17 / 1.379																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	6	-	-	-	-	4	-	-	-	5	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Out	6	-	-	-	-	4	-	-	-	5	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Method of Implementation: AIT:: Installation Name: SUBMARINE AN/WSN-11 PROCUREMENT																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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		- / -	2 / 0.200	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 0.200																		

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6										P-1 Line Item Number / Title: 0670 / Other Navigation Equipment										Modification Number / Title: 9 / GW061: MK 27 REPLACEMENT											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: GW061: MK 27 REPLACEMENT																															
Installation Information																															
Method of Implementation: AIT:: Installation Name: SUBMARINE AN/WSN-11 PROCUREMENT																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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>																	
FY 2017		- / -	- / -	3 / 0.300	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 0.300																		
FY 2018		- / -	- / -	- / -	3 / 0.300	0 / 0.000	3 / 0.300	- / -	- / -	- / -	- / -	0 / 0.000	3 / 0.300																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.200	- / -	- / -	- / -	0 / 0.000	2 / 0.200																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 0.300	- / -	- / -	0 / 0.000	3 / 0.300																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.100	- / -	0 / 0.000	1 / 0.100																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		- / -	2 / 0.200	3 / 0.300	3 / 0.300	0 / 0.000	3 / 0.300	2 / 0.200	3 / 0.300	1 / 0.100	- / -	0 / 0.000	14 / 1.400																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	-	-	-	3	-	-	-	1	-	-	-	-	-	-	-	-	14
Out	-	2	-	-	-	3	-	-	-	3	-	-	-	2	-	-	-	3	-	-	-	1	-	-	-	-	-	-	-	-	14
Footnotes: ⁽²⁷⁾ AMPHIB AN/WSN-11 PROCUREMENT: Systems procured in FY17 as Economic Ordering Quantities and to maintain shipboard configuration for installation in FY18 and FY19. ⁽²⁸⁾ SURFACE AN/WSN-11 PROCUREMENT: Systems procured in FY17 as Economic Ordering Quantities and to maintain shipboard configuration for installation in FY18 and FY19. ⁽²⁹⁾ SUBMARINE AN/WSN-11 PROCUREMENT: Prior year systems procured and funded under P40A Cost Element GW013.																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6					P-1 Line Item Number / Title: 0670 / Other Navigation Equipment					Modification Number / Title: 10 / GW062: AN/WSN-7 MODERNIZATION		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	3.388	2.349	8.811	9.784	0.000	9.784	8.593	7.471	7.182	5.103	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	3.388	2.349	8.811	9.784	0.000	9.784	8.593	7.471	7.182	5.103	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	3.388	2.349	8.811	9.784	0.000	9.784	8.593	7.471	7.182	5.103	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: These funds are required for the procurement and installation of field changes, upgrades, and Tech Refresh of AN/WSN-7 Inertial Navigation System on amphibious, surface, submarine, and carrier platforms. Field Change 21: Technical Insertion (TI-14). Upgrades include SAASM GPS Receivers, improved health monitoring, Bathymetric fixes, enhanced networked sensor interfaces, TI-14 IA compliance, and SWFTS Display Standards and Conventions compliance. Field Change 22: Upgrades include AN/WSN-7 NAV processor firmware Rev-AG and I/O processor firmware Rev-AC. Field Change 23: Technical Insertion (TI-16). Improvements include transition from CORBA to AMQP. Field Change 24: Technical Insertion (TI-18) Bathymetric Fix Update. Field Change 26: Technical Insertion (TI-20) to be defined in FY20. Field Change 28: Technical Insertion (TI-22) to be defined in FY22. Submarine Shipalt 4507: Mounting baseplate modification. Submarine ECI 14-006 VA: ECDU Shock Mount Mod VME Pin Replacement Submarine ECI (TI-10/12/14): ECDU GVRC, RTP, and WINP firmware upgrades Submarine ECI (TI-16/APB-17): ECDU Time Monitoring Submarine ECI (TI-18/APB-19): To be defined in FY19. Submarine ECI (TI-20/APB-21): To be defined in FY21. Submarine TRID TBD (TI-22): To be defined in FY22. ECI installation costs may be combined with procurement costs.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy									Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6				P-1 Line Item Number / Title: 0670 / Other Navigation Equipment					Modification Number / Title: 10 / GW062: AN/WSN-7 MODERNIZATION				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: GW062: AN/WSN-7 MODERNIZATION				Modification Type: AN/WSN-7 MODERNIZATION				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: AMPHIB FIELD CHANGES													
B Kits													
Recurring													
1.1.1) AMPHIB AN/WSN-7 FIELD CHANGE 22 - NonOrganic		- / -	2 / 0.024	2 / 0.024	2 / 0.024	- / -	2 / 0.024	8 / 0.096	3 / 0.036	- / -	- / -	- / -	17 / 0.204
1.1.2) AMPHIB AN/WSN-7 CDU TECH REFRESH - NonOrganic ⁽³⁰⁾		- / -	- / -	4 / 0.560	7 / 0.980	- / -	7 / 0.980	4 / 0.560	1 / 0.140	4 / 0.560	3 / 0.428	Continuing	Continuing
Subtotal: Recurring		- / 0.000	- / 0.024	- / 0.584	- / 1.004	- / -	- / 1.004	- / 0.656	- / 0.176	- / 0.560	- / 0.428	Continuing	Continuing
Subtotal: AMPHIB FIELD CHANGES		- / -	2 / 0.024	6 / 0.584	9 / 1.004	- / -	9 / 1.004	12 / 0.656	4 / 0.176	4 / 0.560	3 / 0.428	Continuing	Continuing
Modification Item 2 of 4: SURFACE FIELD CHANGES													
B Kits													
Recurring													
2.1.1) SURFACE AN/WSN-7 FIELD CHANGE 22 - NonOrganic		- / -	12 / 0.144	16 / 0.192	13 / 0.156	- / -	13 / 0.156	8 / 0.096	9 / 0.108	6 / 0.072	- / -	- / -	64 / 0.768
2.1.2) SURFACE AN/WSN-7 CDU TECH REFRESH EQT - Organic ⁽³¹⁾		- / 0.475	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.475
2.1.3) SURFACE AN/WSN-7 CDU TECH FRESH - NonOrganic ⁽³²⁾		15 / 2.123	- / -	16 / 2.240	13 / 1.820	- / -	13 / 1.820	15 / 2.100	14 / 1.960	9 / 1.350	9 / 1.377	Continuing	Continuing
Subtotal: Recurring		- / 2.598	- / 0.144	- / 2.432	- / 1.976	- / -	- / 1.976	- / 2.196	- / 2.068	- / 1.422	- / 1.377	Continuing	Continuing
Subtotal: SURFACE FIELD CHANGES		15 / 2.598	12 / 0.144	32 / 2.432	26 / 1.976	- / -	26 / 1.976	23 / 2.196	23 / 2.068	15 / 1.422	9 / 1.377	Continuing	Continuing
Modification Item 3 of 4: SUBMARINE FIELD CHANGES													
B Kits													
Recurring													
3.1.1) SUBMARINE SHIPALT 4507 - NonOrganic		1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000
3.1.2) SUBMARINE ECI 14-006-VA - NonOrganic ⁽³³⁾		- / -	1 / 0.005	2 / 0.010	1 / 0.005	- / -	1 / 0.005	- / -	- / -	- / -	- / -	- / -	4 / 0.020
3.1.3) SUBMARINE ECI (TI-10/12/14) - NonOrganic ⁽³⁴⁾		- / -	27 / 0.675	13 / 0.325	4 / 0.100	- / -	4 / 0.100	- / -	- / -	- / -	- / -	- / -	44 / 1.100
3.1.4) SUBMARINE AN/WSN-7 FIELD CHANGE 21 - NonOrganic		- / -	- / -	6 / 0.360	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 0.360
3.1.5) SUBMARINE AN/WSN-7 FIELD CHANGE 22 - NonOrganic		- / -	- / -	6 / 0.360	- / -	- / -	- / -	- / -	1 / 0.060	- / -	- / -	- / -	7 / 0.420

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Exhibit P-3a, Individual Modification: PB 2019 Navy									Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6				P-1 Line Item Number / Title: 0670 / Other Navigation Equipment					Modification Number / Title: 10 / GW062: AN/WSN-7 MODERNIZATION				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: GW062: AN/WSN-7 MODERNIZATION			Modification Type: AN/WSN-7 MODERNIZATION					Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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)	
3.1.6) SUBMARINE AN/WSN-7 FIELD CHANGE 23 - NonOrganic ⁽³⁵⁾	3 / 0.000	- / -	4 / 0.688	5 / 0.860	- / -	5 / 0.860	- / -	- / -	- / -	- / -	- / -	12 / 1.548	
3.1.7) SUBMARINE AN/WSN-7 FIELD CHANGE 24 - NonOrganic	- / -	- / -	3 / 0.537	12 / 2.148	- / -	12 / 2.148	6 / 1.074	- / -	- / -	- / -	- / -	21 / 3.759	
3.1.8) SUBMARINE AN/WSN-7 FIELD CHANGE 26 - NonOrganic	- / -	- / -	- / -	2 / 0.372	- / -	2 / 0.372	2 / 0.372	12 / 2.232	5 / 0.930	- / -	- / -	21 / 3.906	
3.1.9) SUBMARINE AN/WSN-7 FIELD CHANGE 28 - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 1.140	- / -	Continuing	Continuing	
3.1.10) SUBMARINE AN/WSN-7 ECI (TI-16/APB-17) - NonOrganic ⁽³⁶⁾	- / -	- / -	2 / 0.070	6 / 0.210	- / -	6 / 0.210	2 / 0.070	2 / 0.070	- / -	- / -	- / -	12 / 0.420	
3.1.11) SUBMARINE AN/WSN-7 ECI (TI-18/APB-19) - NonOrganic ⁽³⁷⁾	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.070	8 / 0.280	6 / 0.210	1 / 0.035	Continuing	Continuing	
3.1.12) SUBMARINE AN/WSN-7 ECI (TI-20/APB-21) - NonOrganic ⁽³⁸⁾	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 0.160	2 / 0.080	Continuing	Continuing	
3.1.13) SUBMARINE AN/WSN-7 TRID TBD (TI-22) - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 0.600	7 / 1.400	Continuing	Continuing	
Subtotal: Recurring	- / 0.000	- / 0.680	- / 2.350	- / 3.695	- / -	- / 3.695	- / 1.586	- / 2.642	- / 3.040	- / 1.515	Continuing	Continuing	
Subtotal: SUBMARINE FIELD CHANGES	4 / 0.000	28 / 0.680	36 / 2.350	30 / 3.695	- / -	30 / 3.695	12 / 1.586	23 / 2.642	24 / 3.040	10 / 1.515	Continuing	Continuing	
Modification Item 4 of 4: CARRIER FIELD CHANGES													
B Kits													
Recurring													
4.1.1) CARRIER AN/WSN-7 FIELD CHANGE 22 - NonOrganic	- / -	3 / 0.036	- / -	2 / 0.024	- / -	2 / 0.024	5 / 0.060	1 / 0.012	- / -	- / -	- / -	11 / 0.132	
4.1.2) CARRIER AN/WSN-7 CDU TECH REFRESH - NonOrganic ⁽³⁹⁾	4 / 0.000	- / -	3 / 0.420	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	7 / 0.420	
Subtotal: Recurring	- / 0.000	- / 0.036	- / 0.420	- / 0.024	- / -	- / 0.024	- / 0.060	- / 0.012	- / -	- / -	- / 0.000	- / 0.552	
Subtotal: CARRIER FIELD CHANGES	4 / 0.000	3 / 0.036	3 / 0.420	2 / 0.024	- / -	2 / 0.024	5 / 0.060	1 / 0.012	- / -	- / -	- / -	18 / 0.552	
Subtotal: Procurement, All Modification Items	- / 2.598	- / 0.884	- / 5.786	- / 6.699	- / -	- / 6.699	- / 4.498	- / 4.898	- / 5.022	- / 3.320	Continuing	Continuing	
Installation													
Modification Item 1 of 4: AMPHIB FIELD CHANGES	- / 0.000	- / 0.150	- / 0.150	- / 0.350	- / 0.000	- / 0.350	- / 0.950	- / 0.425	- / 0.050	- / 0.204	Continuing	Continuing	
Modification Item 2 of 4: SURFACE FIELD CHANGES	- / 0.750	- / 0.950	- / 2.050	- / 1.875	- / 0.000	- / 1.875	- / 1.250	- / 1.425	- / 1.150	- / 0.459	Continuing	Continuing	
Modification Item 3 of 4: SUBMARINE FIELD CHANGES	- / 0.040	- / 0.240	- / 0.525	- / 0.560	- / 0.000	- / 0.560	- / 1.520	- / 0.648	- / 0.960	- / 1.120	Continuing	Continuing	
Modification Item 4 of 4: CARRIER FIELD CHANGES	- / 0.000	- / 0.125	- / 0.300	- / 0.300	- / 0.000	- / 0.300	- / 0.375	- / 0.075	- / 0.000	- / 0.000	- / 0.000	- / 1.175	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6				P-1 Line Item Number / Title: 0670 / Other Navigation Equipment						Modification Number / Title: 10 / GW062: AN/WSN-7 MODERNIZATION			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: GW062: AN/WSN-7 MODERNIZATION				Modification Type: AN/WSN-7 MODERNIZATION				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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>Subtotal: Installation</i>	- / 0.790	- / 1.465	- / 3.025	- / 3.085	- / -	- / 3.085	- / 4.095	- / 2.573	- / 2.160	- / 1.783	Continuing	Continuing	
Total													
Total Cost (Procurement + Support + Installation)	3.388	2.349	8.811	9.784	0.000	9.784	8.593	7.471	7.182	5.103	Continuing	Continuing	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6					P-1 Line Item Number / Title: 0670 / Other Navigation Equipment					Modification Number / Title: 10 / GW062: AN/WSN-7 MODERNIZATION		
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:				
Modification Item 1 of 4: AMPHIB FIELD CHANGES												
Manufacturer Information												
Manufacturer Name: NORTHROP GRUMMAN SYSTEMS CORP.						Manufacturer Location: CHARLOTTESVILLE, VA						
Administrative Leadtime (in Months): 3						Production Leadtime (in Months): 6						
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023					
Contract Dates	Dec 2016	Dec 2017	Dec 2018	Dec 2019	Dec 2020							
Delivery Dates	Jun 2017	Jun 2018	Jun 2019	Jun 2020	Jun 2021							
Manufacturer Name: WR Systems						Manufacturer Location: Norfolk, VA						
Administrative Leadtime (in Months): 3						Production Leadtime (in Months): 6						
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023					
Contract Dates		Mar 2018	Mar 2019	Mar 2020	Mar 2021	Mar 2022	Mar 2023					
Delivery Dates		Sep 2018	Sep 2019	Sep 2020	Sep 2021	Sep 2022	Sep 2023					
Installation Information												
Method of Implementation: AIT:: Installation Name: AMPHIB AN/WSN-7 FIELD CHANGE 22												
Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017	- / -	2 / 0.150	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 0.150
FY 2018	- / -	- / -	2 / 0.150	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 0.150
FY 2019	- / -	- / -	- / -	2 / 0.150	0 / 0.000	2 / 0.150	- / -	- / -	- / -	- / -	0 / 0.000	2 / 0.150
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	8 / 0.600	- / -	- / -	- / -	0 / 0.000	8 / 0.600
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 0.225	- / -	- / -	0 / 0.000	3 / 0.225
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	2 / 0.150	2 / 0.150	2 / 0.150	0 / 0.000	2 / 0.150	8 / 0.600	3 / 0.225	- / -	- / -	0 / 0.000	17 / 1.275

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Exhibit P-3a, Individual Modification: PB 2019 Navy																							Date: February 2018								
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6										P-1 Line Item Number / Title: 0670 / Other Navigation Equipment										Modification Number / Title: 10 / GW062: AN/WSN-7 MODERNIZATION											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 4: AMPHIB FIELD CHANGES																															
Installation Information																															
Method of Implementation: AIT:: Installation Name: AMPHIB AN/WSN-7 FIELD CHANGE 22																															
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	-	-	-	-	2	-	-	-	2	-	-	-	2	-	-	-	8	-	-	-	3	-	-	-	-	-	-	-	-	-	17
Out	-	-	-	-	2	-	-	-	2	-	-	-	2	-	-	-	8	-	-	-	3	-	-	-	-	-	-	-	-	-	17
Method of Implementation: AIT:: Installation Name: AMPHIB AN/WSN-7 CDU TECH REFRESH																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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 2017		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2018		- / -		- / -		- / -		4 / 0.200		0 / 0.000		4 / 0.200		- / -		- / -		- / -		- / -		- / -		0 / 0.000		4 / 0.200					
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		7 / 0.350		- / -		- / -		- / -		- / -		0 / 0.000		7 / 0.350					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		4 / 0.200		- / -		- / -		- / -		0 / 0.000		4 / 0.200					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 0.050		- / -		- / -		0 / 0.000		1 / 0.050					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		4 / 0.204		0 / 0.000		4 / 0.204					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		Continuing		Continuing					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		Continuing		Continuing					
Total		- / -		- / -		- / -		4 / 0.200		0 / 0.000		4 / 0.200		7 / 0.350		4 / 0.200		1 / 0.050		4 / 0.204		Continuing		Continuing		Continuing					
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	-	-	-	-	-	-	-	-	-	4	-	-	-	7	-	-	-	4	-	-	-	1	-	-	-	4	-	-	-	Cont.	Cont.
Out	-	-	-	-	-	-	-	-	-	4	-	-	-	7	-	-	-	4	-	-	-	1	-	-	-	4	-	-	-	Cont.	Cont.

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy								Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6				P-1 Line Item Number / Title: 0670 / Other Navigation Equipment				Modification Number / Title: 10 / GW062: AN/WSN-7 MODERNIZATION				
ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Modification Item 2 of 4: SURFACE FIELD CHANGES												
Manufacturer Information												
Manufacturer Name: NORTHROP GRUMMAN SYSTEMS CORP.						Manufacturer Location: CHARLOTTESVILLE, VA						
Administrative Leadtime (in Months): 3						Production Leadtime (in Months): 6						
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023					
Contract Dates	Dec 2016	Dec 2017	Dec 2018	Dec 2019	Dec 2020	Dec 2021						
Delivery Dates	Jun 2017	Jun 2018	Jun 2019	Jun 2020	Jun 2021	Jun 2022						
Manufacturer Name: WR Systems						Manufacturer Location: Norfolk, VA						
Administrative Leadtime (in Months): 3						Production Leadtime (in Months): 6						
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023					
Contract Dates		Mar 2018	Mar 2019	Mar 2020	Mar 2021	Mar 2022	Mar 2023					
Delivery Dates		Sep 2018	Sep 2019	Sep 2020	Sep 2021	Sep 2022	Sep 2023					
Installation Information												
Method of Implementation: AIT:: Installation Name: SURFACE AN/WSN-7 FIELD CHANGE 22												
Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017	- / -	12 / 0.900	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	12 / 0.900
FY 2018	- / -	- / -	16 / 1.200	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	16 / 1.200
FY 2019	- / -	- / -	- / -	13 / 0.975	0 / 0.000	13 / 0.975	- / -	- / -	- / -	- / -	0 / 0.000	13 / 0.975
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	8 / 0.600	- / -	- / -	- / -	0 / 0.000	8 / 0.600
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	9 / 0.675	- / -	- / -	0 / 0.000	9 / 0.675
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 0.450	- / -	0 / 0.000	6 / 0.450
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	12 / 0.900	16 / 1.200	13 / 0.975	0 / 0.000	13 / 0.975	8 / 0.600	9 / 0.675	6 / 0.450	- / -	0 / 0.000	64 / 4.800

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Exhibit P-3a, Individual Modification: PB 2019 Navy																								Date: February 2018							
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6												P-1 Line Item Number / Title: 0670 / Other Navigation Equipment												Modification Number / Title: 10 / GW062: AN/WSN-7 MODERNIZATION							
ID Code (A=Service Ready, B=Not Service Ready) :																		MDAP/MAIS Code:													
Modification Item 2 of 4: SURFACE FIELD CHANGES																															
Installation Information																															
Method of Implementation: AIT:: Installation Name: SURFACE AN/WSN-7 FIELD CHANGE 22																															
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	-	-	-	-	12	-	-	-	16	-	-	-	13	-	-	-	8	-	-	-	9	-	-	-	6	-	-	-	-	-	64
Out	-	-	-	-	12	-	-	-	16	-	-	-	13	-	-	-	8	-	-	-	9	-	-	-	6	-	-	-	-	-	64
Method of Implementation: AIT:: Installation Name: SURFACE AN/WSN-7 CDU TECH FRESH																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		0 / 0.750		0 / 0.050		13 / 0.850		2 / 0.100		0 / 0.000		2 / 0.100		- / -		- / -		- / -		- / -		0 / 0.000		15 / 1.750							
FY 2017		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2018		- / -		- / -		- / -		16 / 0.800		0 / 0.000		16 / 0.800		- / -		- / -		- / -		- / -		0 / 0.000		16 / 0.800							
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		13 / 0.650		- / -		- / -		- / -		0 / 0.000		13 / 0.650							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		15 / 0.750		- / -		- / -		0 / 0.000		15 / 0.750							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		14 / 0.700		- / -		0 / 0.000		14 / 0.700							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		9 / 0.459		0 / 0.000		9 / 0.459							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		Continuing							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		Continuing							
Total		0 / 0.750		0 / 0.050		13 / 0.850		18 / 0.900		0 / 0.000		18 / 0.900		13 / 0.650		15 / 0.750		14 / 0.700		9 / 0.459		Continuing		Continuing							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	-	-	-	-	-	13	-	-	-	18	-	-	-	13	-	-	-	15	-	-	-	14	-	-	-	9	-	-	-	Cont.	Cont.
Out	-	-	-	-	-	13	-	-	-	18	-	-	-	13	-	-	-	15	-	-	-	14	-	-	-	9	-	-	-	Cont.	Cont.

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy						Date: February 2018	
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6			P-1 Line Item Number / Title: 0670 / Other Navigation Equipment			Modification Number / Title: 10 / GW062: AN/WSN-7 MODERNIZATION	
ID Code (A=Service Ready, B=Not Service Ready) :					MDAP/MAIS Code:		
Modification Item 3 of 4: SUBMARINE FIELD CHANGES							
Manufacturer Information							
Manufacturer Name: TBD				Manufacturer Location: TBD			
Administrative Leadtime (<i>in Months</i>): 0				Production Leadtime (<i>in Months</i>): 0			
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Contract Dates							
Delivery Dates							
Manufacturer Name: TBD				Manufacturer Location: TBD			
Administrative Leadtime (<i>in Months</i>): 0				Production Leadtime (<i>in Months</i>): 0			
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Contract Dates							
Delivery Dates							
Manufacturer Name: TBD				Manufacturer Location: TBD			
Administrative Leadtime (<i>in Months</i>): 0				Production Leadtime (<i>in Months</i>): 0			
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Contract Dates							
Delivery Dates							
Manufacturer Name: NORTHROP GRUMMAN SYSTEMS CORP.				Manufacturer Location: CHARLOTTESVILLE, VA			
Administrative Leadtime (<i>in Months</i>): 3				Production Leadtime (<i>in Months</i>): 9			
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Contract Dates			Dec 2018	Dec 2019	Dec 2020	Dec 2021	
Delivery Dates			Sep 2019	Sep 2020	Sep 2021	Sep 2022	
Manufacturer Name: NORTHROP GRUMMAN SYSTEMS CORP.				Manufacturer Location: CHARLOTTESVILLE, VA			
Administrative Leadtime (<i>in Months</i>): 3				Production Leadtime (<i>in Months</i>): 9			
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Contract Dates						Dec 2021	
Delivery Dates						Sep 2022	
Manufacturer Name: TBD				Manufacturer Location: TBD			
Administrative Leadtime (<i>in Months</i>): 0				Production Leadtime (<i>in Months</i>): 0			
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Contract Dates							

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy						Date: February 2018	
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6			P-1 Line Item Number / Title: 0670 / Other Navigation Equipment			Modification Number / Title: 10 / GW062: AN/WSN-7 MODERNIZATION	
ID Code (A=Service Ready, B=Not Service Ready) :					MDAP/MAIS Code:		
Modification Item 3 of 4: SUBMARINE FIELD CHANGES							
Manufacturer Information							
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Delivery Dates							
Manufacturer Name: NORTHROP GRUMMAN SYSTEMS CORP.				Manufacturer Location: CHARLOTTESVILLE, VA			
Administrative Leadtime (<i>in Months</i>): 0				Production Leadtime (<i>in Months</i>): 0			
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Contract Dates							
Delivery Dates							
Manufacturer Name: NORTHROP GRUMMAN SYSTEMS CORP.				Manufacturer Location: CHARLOTTESVILLE, VA			
Administrative Leadtime (<i>in Months</i>): 3				Production Leadtime (<i>in Months</i>): 6			
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Contract Dates		Dec 2017			Dec 2020		
Delivery Dates		Jun 2018			Jun 2021		
Manufacturer Name: NORTHROP GRUMMAN SYSTEMS CORP.				Manufacturer Location: CHARLOTTESVILLE, VA			
Administrative Leadtime (<i>in Months</i>): 3				Production Leadtime (<i>in Months</i>): 6			
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Contract Dates	Dec 2016	Dec 2017	Dec 2018				
Delivery Dates	Jun 2017	Jun 2018	Jun 2019				
Manufacturer Name: NORTHROP GRUMMAN SYSTEMS CORP.				Manufacturer Location: CHARLOTTESVILLE, VA			
Administrative Leadtime (<i>in Months</i>): 3				Production Leadtime (<i>in Months</i>): 6			
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Contract Dates	Dec 2016	Dec 2017	Dec 2018				
Delivery Dates	Jun 2017	Jun 2018	Jun 2019				
Manufacturer Name: NORTHROP GRUMMAN SYSTEMS CORP.				Manufacturer Location: CHARLOTTESVILLE, VA			
Administrative Leadtime (<i>in Months</i>): 3				Production Leadtime (<i>in Months</i>): 9			
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Contract Dates		Dec 2017	Dec 2018	Dec 2019			
Delivery Dates		Sep 2018	Sep 2019	Sep 2020			
Manufacturer Name: NORTHROP GRUMMAN SYSTEMS CORP.				Manufacturer Location: CHARLOTTESVILLE, VA			
Administrative Leadtime (<i>in Months</i>): 3				Production Leadtime (<i>in Months</i>): 6			

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6										P-1 Line Item Number / Title: 0670 / Other Navigation Equipment										Modification Number / Title: 10 / GW062: AN/WSN-7 MODERNIZATION											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 3 of 4: SUBMARINE FIELD CHANGES																															
Manufacturer Information																															
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates						Dec 2017																									
Delivery Dates						Jun 2018																									
Manufacturer Name: NORTHROP GRUMMAN SYSTEMS CORP.															Manufacturer Location: CHARLOTTESVILLE, VA																
Administrative Leadtime (in Months): 3															Production Leadtime (in Months): 9																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates						Dec 2017				Dec 2018																					
Delivery Dates						Sep 2018				Sep 2019																					
Installation Information																															
Method of Implementation: AIT:: Installation Name: SUBMARINE SHIPALT 4507																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total																		
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																	
Prior Years		1 / 0.040	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	1 / 0.040																		
FY 2017		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		1 / 0.040	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	1 / 0.040																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Out	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6	P-1 Line Item Number / Title: 0670 / Other Navigation Equipment	Modification Number / Title: 10 / GW062: AN/WSN-7 MODERNIZATION

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

Modification Item 3 of 4: SUBMARINE FIELD CHANGES

Installation Information

Method of Implementation: AIT:: Installation Name: SUBMARINE ECI 14-006-VA

Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017	- / -	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	1 / -
FY 2018	- / -	- / -	2 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / -
FY 2019	- / -	- / -	- / -	1 / 0.000	0 / 0.000	1 / 0.000	- / -	- / -	- / -	- / -	0 / 0.000	1 / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	1 / 0.000	2 / 0.000	1 / 0.000	0 / 0.000	1 / 0.000	- / -	- / -	- / -	- / -	0 / 0.000	4 / -

Installation Schedule

	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	1	-	-	-	2	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Out	-	-	-	-	1	-	-	-	2	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4

Method of Implementation: AIT:: Installation Name: SUBMARINE ECI (TI-10/12/14)

Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017	- / -	27 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	27 / -
FY 2018	- / -	- / -	13 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	13 / -
FY 2019	- / -	- / -	- / -	4 / 0.000	0 / 0.000	4 / 0.000	- / -	- / -	- / -	- / -	0 / 0.000	4 / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6	P-1 Line Item Number / Title: 0670 / Other Navigation Equipment	Modification Number / Title: 10 / GW062: AN/WSN-7 MODERNIZATION

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

Modification Item 3 of 4: SUBMARINE FIELD CHANGES

Installation Information

Method of Implementation: AIT:: Installation Name: SUBMARINE ECI (TI-10/12/14)

Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	27 / 0.000	13 / 0.000	4 / 0.000	0 / 0.000	4 / 0.000	- / -	- / -	- / -	- / -	0 / 0.000	44 / -

Installation Schedule

	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	-	-	-	-	27	-	-	-	13	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44
Out	-	-	-	-	27	-	-	-	13	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44

Method of Implementation: AIT:: Installation Name: SUBMARINE AN/WSN-7 FIELD CHANGE 21

Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	6 / 0.480	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	6 / 0.480
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	6 / 0.480	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	6 / 0.480

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6	P-1 Line Item Number / Title: 0670 / Other Navigation Equipment	Modification Number / Title: 10 / GW062: AN/WSN-7 MODERNIZATION

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

Modification Item 3 of 4: SUBMARINE FIELD CHANGES

Installation Information

Method of Implementation: AIT:: Installation Name: SUBMARINE AN/WSN-7 FIELD CHANGE 21

Installation Schedule

	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
Out	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6

Method of Implementation: AIT:: Installation Name: SUBMARINE AN/WSN-7 FIELD CHANGE 22

Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	6 / 0.045	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	6 / 0.045
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.008	- / -	- / -	0 / 0.000	1 / 0.008
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	6 / 0.045	- / -	- / -	- / -	- / -	1 / 0.008	- / -	- / -	0 / 0.000	7 / 0.053

Installation Schedule

	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	7
Out	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	7

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6	P-1 Line Item Number / Title: 0670 / Other Navigation Equipment	Modification Number / Title: 10 / GW062: AN/WSN-7 MODERNIZATION

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

Modification Item 3 of 4: SUBMARINE FIELD CHANGES

Installation Information

Method of Implementation: AIT:: Installation Name: SUBMARINE AN/WSN-7 FIELD CHANGE 23

Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	3 / 0.240	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 0.240
FY 2017	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	4 / 0.320	0 / 0.000	4 / 0.320	- / -	- / -	- / -	- / -	0 / 0.000	4 / 0.320
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.400	- / -	- / -	- / -	0 / 0.000	5 / 0.400
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	3 / 0.240	- / -	4 / 0.320	0 / 0.000	4 / 0.320	5 / 0.400	- / -	- / -	- / -	0 / 0.000	12 / 0.960

Installation Schedule

	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	3	-	-	-	-	-	-	-	4	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
Out	-	3	-	-	-	-	-	-	-	4	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12

Method of Implementation: AIT:: Installation Name: SUBMARINE AN/WSN-7 FIELD CHANGE 24

Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	3 / 0.240	0 / 0.000	3 / 0.240	- / -	- / -	- / -	- / -	0 / 0.000	3 / 0.240
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	12 / 0.960	- / -	- / -	- / -	0 / 0.000	12 / 0.960
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 0.480	- / -	- / -	0 / 0.000	6 / 0.480
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6	P-1 Line Item Number / Title: 0670 / Other Navigation Equipment	Modification Number / Title: 10 / GW062: AN/WSN-7 MODERNIZATION

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

Modification Item 3 of 4: SUBMARINE FIELD CHANGES

Installation Information

Method of Implementation: AIT:: Installation Name: SUBMARINE AN/WSN-7 FIELD CHANGE 24

Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	- / -	3 / 0.240	0 / 0.000	3 / 0.240	12 / 0.960	6 / 0.480	- / -	- / -	0 / 0.000	21 / 1.680

Installation Schedule

	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	-	-	-	12	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	21
Out	-	-	-	-	-	-	-	-	-	3	-	-	-	12	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	21

Method of Implementation: AIT:: Installation Name: SUBMARINE AN/WSN-7 FIELD CHANGE 26

Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.160	- / -	- / -	- / -	0 / 0.000	2 / 0.160
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.160	- / -	- / -	0 / 0.000	2 / 0.160
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	12 / 0.960	- / -	0 / 0.000	12 / 0.960
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.400	0 / 0.000	5 / 0.400
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.160	2 / 0.160	12 / 0.960	5 / 0.400	0 / 0.000	21 / 1.680

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6	P-1 Line Item Number / Title: 0670 / Other Navigation Equipment	Modification Number / Title: 10 / GW062: AN/WSN-7 MODERNIZATION

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

Modification Item 3 of 4: SUBMARINE FIELD CHANGES

Installation Information

Method of Implementation: AIT:: Installation Name: SUBMARINE AN/WSN-7 FIELD CHANGE 26

Installation Schedule

	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	-	-	-	12	-	-	-	5	-	-	-	-	21
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2	-	-	-	12	-	-	-	5	-	-	-	-	21

Method of Implementation: AIT:: Installation Name: SUBMARINE AN/WSN-7 FIELD CHANGE 28

Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 0.480	0 / 0.000	6 / 0.480
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 0.480	Continuing	Continuing

Installation Schedule

	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	Cont.	Cont.	
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	Cont.	Cont.	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6	P-1 Line Item Number / Title: 0670 / Other Navigation Equipment	Modification Number / Title: 10 / GW062: AN/WSN-7 MODERNIZATION

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

Modification Item 3 of 4: SUBMARINE FIELD CHANGES

Installation Information

Method of Implementation: AIT:: Installation Name: SUBMARINE AN/WSN-7 ECI (TI-16/APB-17)

Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	2 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / -
FY 2019	- / -	- / -	- / -	6 / 0.000	0 / 0.000	6 / 0.000	- / -	- / -	- / -	- / -	0 / 0.000	6 / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.000	- / -	- / -	- / -	0 / 0.000	2 / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.000	- / -	- / -	0 / 0.000	2 / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	2 / 0.000	6 / 0.000	0 / 0.000	6 / 0.000	2 / 0.000	2 / 0.000	- / -	- / -	0 / 0.000	12 / -

Installation Schedule

	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	-	-	-	6	-	-	-	2	-	-	-	2	-	-	-	-	-	-	-	-	-	12
Out	-	-	-	-	-	-	-	-	2	-	-	-	6	-	-	-	2	-	-	-	2	-	-	-	-	-	-	-	-	-	12

Method of Implementation: AIT:: Installation Name: SUBMARINE AN/WSN-7 ECI (TI-18/APB-19)

Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.000	- / -	- / -	- / -	0 / 0.000	2 / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	8 / 0.000	- / -	- / -	0 / 0.000	8 / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 0.000	- / -	0 / 0.000	6 / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000	0 / 0.000	1 / -

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6	P-1 Line Item Number / Title: 0670 / Other Navigation Equipment	Modification Number / Title: 10 / GW062: AN/WSN-7 MODERNIZATION

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

Modification Item 3 of 4: SUBMARINE FIELD CHANGES

Installation Information

Method of Implementation: AIT:: Installation Name: SUBMARINE AN/WSN-7 ECI (TI-18/APB-19)

Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.000	8 / 0.000	6 / 0.000	1 / 0.000	Continuing	Continuing

Installation Schedule

	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	-	-	-	8	-	-	-	6	-	-	-	1	Cont.	Cont.
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	8	-	-	-	6	-	-	-	1	Cont.	Cont.

Method of Implementation: AIT:: Installation Name: SUBMARINE AN/WSN-7 ECI (TI-20/APB-21)

Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 0.000	- / -	0 / 0.000	4 / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.000	0 / 0.000	2 / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing
Total	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 0.000	2 / 0.000	Continuing	Continuing

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy																							Date: February 2018								
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6											P-1 Line Item Number / Title: 0670 / Other Navigation Equipment											Modification Number / Title: 10 / GW062: AN/WSN-7 MODERNIZATION									
ID Code (A=Service Ready, B=Not Service Ready) :																	MDAP/MAIS Code:														
Modification Item 3 of 4: SUBMARINE FIELD CHANGES																															
Installation Information																															
Method of Implementation: AIT:: Installation Name: SUBMARINE AN/WSN-7 ECI (TI-20/APB-21)																															
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	2	Cont.	Cont.
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	2	Cont.	Cont.
Method of Implementation: AIT:: Installation Name: SUBMARINE AN/WSN-7 TRID TBD (TI-22)																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 0.240	0 / 0.000	3 / 0.240																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	7 / 0.560	7 / 0.560																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	Continuing	Continuing																		
Total		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 0.240	Continuing	Continuing																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	-	-	-	Cont.	Cont.
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	Cont.	Cont.

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy								Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6				P-1 Line Item Number / Title: 0670 / Other Navigation Equipment				Modification Number / Title: 10 / GW062: AN/WSN-7 MODERNIZATION				
ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Modification Item 4 of 4: CARRIER FIELD CHANGES												
Manufacturer Information												
Manufacturer Name: NORTHROP GRUMMAN SYSTEMS CORP.						Manufacturer Location: CHARLOTTESVILLE, VA						
Administrative Leadtime (in Months): 3						Production Leadtime (in Months): 6						
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023					
Contract Dates		Mar 2018										
Delivery Dates		Sep 2018										
Manufacturer Name: NORTHROP GRUMMAN SYSTEMS CORP.						Manufacturer Location: CHARLOTTESVILLE, VA						
Administrative Leadtime (in Months): 3						Production Leadtime (in Months): 6						
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023					
Contract Dates	Dec 2016		Dec 2018	Dec 2019	Dec 2020							
Delivery Dates	Jun 2017		Jun 2019	Jun 2020	Jun 2021							
Installation Information												
Method of Implementation: AIT:: Installation Name: CARRIER AN/WSN-7 FIELD CHANGE 22												
Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017	- / -	1 / 0.075	2 / 0.150	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 0.225
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	2 / 0.150	0 / 0.000	2 / 0.150	- / -	- / -	- / -	- / -	0 / 0.000	2 / 0.150
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.375	- / -	- / -	- / -	0 / 0.000	5 / 0.375
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.075	- / -	- / -	0 / 0.000	1 / 0.075
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	1 / 0.075	2 / 0.150	2 / 0.150	0 / 0.000	2 / 0.150	5 / 0.375	1 / 0.075	- / -	- / -	0 / 0.000	11 / 0.825

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Exhibit P-3a, Individual Modification: PB 2019 Navy																								Date: February 2018							
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6												P-1 Line Item Number / Title: 0670 / Other Navigation Equipment												Modification Number / Title: 10 / GW062: AN/WSN-7 MODERNIZATION							
ID Code (A=Service Ready, B=Not Service Ready) :																		MDAP/MAIS Code:													
Modification Item 4 of 4: CARRIER FIELD CHANGES																															
Installation Information																															
Method of Implementation: AIT:: Installation Name: CARRIER AN/WSN-7 FIELD CHANGE 22																															
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
In	-	-	-	-	1	-	-	-	2	-	-	-	2	-	-	-	5	-	-	-	1	-	-	-	-	-	-	-	-	-	11
Out	-	-	-	-	1	-	-	-	2	-	-	-	2	-	-	-	5	-	-	-	1	-	-	-	-	-	-	-	-	-	11
Method of Implementation: AIT:: Installation Name: CARRIER AN/WSN-7 CDU TECH REFRESH																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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		- / -		1 / 0.050		3 / 0.150		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		4 / 0.200							
FY 2017		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2018		- / -		- / -		- / -		3 / 0.150		0 / 0.000		3 / 0.150		- / -		- / -		- / -		- / -		0 / 0.000		3 / 0.150							
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		- / -		1 / 0.050		3 / 0.150		3 / 0.150		0 / 0.000		3 / 0.150		- / -		- / -		- / -		- / -		0 / 0.000		7 / 0.350							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
In	-	-	-	-	1	-	-	-	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7		
Out	-	-	-	-	1	-	-	-	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7		
Footnotes:																															
⁽³⁰⁾ AMPHIB AN/WSN-7 CDU TECH REFRESH: Prior year systems procured and funded under P40A Cost Element GW029.																															
⁽³¹⁾ Funds are for the Environmental Qualification Testing of the AN/WSN-7 CDU Tech Refresh. No system procurements under this item.																															

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6	P-1 Line Item Number / Title: 0670 / Other Navigation Equipment	Modification Number / Title: 10 / GW062: AN/WSN-7 MODERNIZATION
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
(32) SURFACE AN/WSN-7 CDU TECH REFRESH: Systems procured in FY16 as Economic Ordering Quantities and to maintain shipboard configuration for installation in FY17, FY18, and FY19. (33) SUBMARINE ECI 14-006-VA: Installation costs included in procurement costs. (34) SUBMARINE ECI (TI-10/12/14): Installation costs included in procurement costs. (35) SUBMARINE AN/WSN-7 FIELD CHANGE 23: Prior year systems procured and funded under P40A Cost Element GW029 for integration testing prior to installation in FY17. (36) SUBMARINE AN/WSN-7 ECI (TI-16/APB-17): Installation costs included in procurement costs. (37) SUBMARINE AN/WSN-7 ECI (TI-18/APB-19): Installation costs included in procurement costs. (38) SUBMARINE AN/WSN-7 ECI (TI-20/APB-21): Installation costs included in procurement costs. (39) CARRIER AN/WSN-7 CDU TECH REFRESH: Prior year systems procured and funded under P40A Cost Element GW029. Delays in testing and changes in platform availabilities have resulted in later installation.		

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6					P-1 Line Item Number / Title: 0670 / Other Navigation Equipment					Modification Number / Title: 11 / GW067: DIGITAL DEPTH DETECTOR		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	0.000	0.775	1.013	0.913	0.000	0.913	0.775	0.813	0.238	0.000	0.000	4.527
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	0.000	0.775	1.013	0.913	0.000	0.913	0.775	0.813	0.238	0.000	0.000	4.527
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	0.000	0.775	1.013	0.913	0.000	0.913	0.775	0.813	0.238	0.000	0.000	4.527
(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: These funds are required for the procurement and installation of Digital Depth Detector to replace legacy depth detectors on submarine platforms.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy									Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6				P-1 Line Item Number / Title: 0670 / Other Navigation Equipment					Modification Number / Title: 11 / GW067: DIGITAL DEPTH DETECTOR				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: GW067: DIGITAL DEPTH DETECTOR				Modification Type: DIGITAL DEPTH DETECTOR				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> GW067: DIGITAL DEPTH DETECTOR													
B Kits													
Recurring													
1.1.1) SUBMARINE DIGITAL DEPTH DETECTOR PROCUREMENT - NonOrganic ⁽⁴⁰⁾	2 / 0.000	3 / 0.300	3 / 0.300	2 / 0.200	- / -	2 / 0.200	3 / 0.300	1 / 0.100	- / -	- / -	- / -	14 / 1.200	
<i>Subtotal: Recurring</i>	- / 0.000	- / 0.300	- / 0.300	- / 0.200	- / -	- / 0.200	- / 0.300	- / 0.100	- / -	- / -	- / 0.000	- / 1.200	
<i>Subtotal: GW067: DIGITAL DEPTH DETECTOR</i>	2 / 0.000	3 / 0.300	3 / 0.300	2 / 0.200	- / -	2 / 0.200	3 / 0.300	1 / 0.100	- / -	- / -	- / -	14 / 1.200	
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.000	- / 0.300	- / 0.300	- / 0.200	- / -	- / 0.200	- / 0.300	- / 0.100	- / -	- / -	- / 0.000	- / 1.200	
Installation													
<i>Modification Item 1 of 1:</i> GW067: DIGITAL DEPTH DETECTOR	- / 0.000	- / 0.475	- / 0.713	- / 0.713	- / 0.000	- / 0.713	- / 0.475	- / 0.713	- / 0.238	- / 0.000	- / 0.000	- / 3.327	
<i>Subtotal: Installation</i>	- / 0.000	- / 0.475	- / 0.713	- / 0.713	- / -	- / 0.713	- / 0.475	- / 0.713	- / 0.238	- / -	- / 0.000	- / 3.327	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.775	1.013	0.913	0.000	0.913	0.775	0.813	0.238	0.000	0.000	4.527	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6										P-1 Line Item Number / Title: 0670 / Other Navigation Equipment										Modification Number / Title: 11 / GW067: DIGITAL DEPTH DETECTOR											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: GW067: DIGITAL DEPTH DETECTOR																															
Manufacturer Information																															
Manufacturer Name: WR Systems															Manufacturer Location: Norfolk, VA																
Administrative Leadtime <i>(in Months)</i> : 3															Production Leadtime <i>(in Months)</i> : 6																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates		Mar 2017				Mar 2018				Mar 2019				Mar 2020				Mar 2021													
Delivery Dates		Sep 2017				Sep 2018				Sep 2019				Sep 2020				Sep 2021													
Installation Information																															
Method of Implementation: AIT:: Installation Name: SUBMARINE DIGITAL DEPTH DETECTOR PROCUREMENT																															
Installation Cost		Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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		- / -	2 / 0.475		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 0.475								
FY 2017		- / -	- / -		3 / 0.713		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		3 / 0.713								
FY 2018		- / -	- / -		- / -		3 / 0.713		0 / 0.000		3 / 0.713		- / -		- / -		- / -		- / -		0 / 0.000		3 / 0.713								
FY 2019		- / -	- / -		- / -		- / -		- / -		- / -		2 / 0.475		- / -		- / -		- / -		0 / 0.000		2 / 0.475								
FY 2020		- / -	- / -		- / -		- / -		- / -		- / -		- / -		3 / 0.713		- / -		- / -		0 / 0.000		3 / 0.713								
FY 2021		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 0.238		- / -		0 / 0.000		1 / 0.238								
FY 2022		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2023		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
To Complete		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
Total		- / -	2 / 0.475		3 / 0.713		3 / 0.713		0 / 0.000		3 / 0.713		2 / 0.475		3 / 0.713		1 / 0.238		- / -		0 / 0.000		14 / 3.327								
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	-	-	-	3	-	-	-	1	-	-	-	-	-	-	-	-	14
Out	-	-	-	-	2	3	-	-	-	3	-	-	-	2	-	-	-	3	-	-	-	1	-	-	-	-	-	-	-	-	14
Footnotes: ⁽⁴⁰⁾ SUBMARINE DIGITAL DEPTH DETECTOR: Prior year systems procured and funded under P40A Cost Element GW013.																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6					P-1 Line Item Number / Title: 0670 / Other Navigation Equipment					Modification Number / Title: 12 / GW069: BOUNDARY DEFENSE CABINET		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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	8.626	12.569	6.410	6.538	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	8.626	12.569	6.410	6.538	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	8.626	12.569	6.410	6.538	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: These funds are required for the procurement and installation of Boundary Defense Cabinets on surface platforms.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy								Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6				P-1 Line Item Number / Title: 0670 / Other Navigation Equipment				Modification Number / Title: 12 / GW069: BOUNDARY DEFENSE CABINET					
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: GW069: BOUNDARY DEFENSE CABINET				Modification Type: BOUNDARY DEFENSE CABINET				Related RDT&E PEs: 0204228N					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: GW069: BOUNDARY DEFENSE CABINET													
B Kits													
Recurring													
1.1.1) SURFACE BOUNDARY DEFENSE CABINET - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	7 / 4.177	10 / 6.087	5 / 3.104	5 / 3.166	Continuing	Continuing	
Subtotal: Recurring	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / 4.177	- / 6.087	- / 3.104	- / 3.166	Continuing	Continuing	
Subtotal: GW069: BOUNDARY DEFENSE CABINET	- / -	- / -	- / -	- / -	- / -	- / -	7 / 4.177	10 / 6.087	5 / 3.104	5 / 3.166	Continuing	Continuing	
Subtotal: Procurement, All Modification Items	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / 4.177	- / 6.087	- / 3.104	- / 3.166	Continuing	Continuing	
Installation													
Modification Item 1 of 1: GW069: BOUNDARY DEFENSE CABINET	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 4.449	- / 6.482	- / 3.306	- / 3.372	Continuing	Continuing	
Subtotal: Installation	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / 4.449	- / 6.482	- / 3.306	- / 3.372	Continuing	Continuing	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	0.000	0.000	0.000	0.000	8.626	12.569	6.410	6.538	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6										P-1 Line Item Number / Title: 0670 / Other Navigation Equipment										Modification Number / Title: 12 / GW069: BOUNDARY DEFENSE CABINET											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: GW069: BOUNDARY DEFENSE CABINET																															
Manufacturer Information																															
Manufacturer Name: TBD															Manufacturer Location: TBD																
Administrative Leadtime (in Months): 3															Production Leadtime (in Months): 7																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates										Dec 2018				Dec 2019				Dec 2020				Dec 2021				Dec 2022					
Delivery Dates										Jul 2019				Jul 2020				Jul 2021				Jul 2022				Jul 2023					
Installation Information																															
Method of Implementation: AIT:: Installation Name: SURFACE BOUNDARY DEFENSE CABINET																															
Installation Cost		Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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 2017		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2018		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2019		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2020		- / -	- / -		- / -		- / -		- / -		- / -		7 / 4.449		- / -		- / -		- / -		0 / 0.000		7 / 4.449								
FY 2021		- / -	- / -		- / -		- / -		- / -		- / -		- / -		10 / 6.482		- / -		- / -		0 / 0.000		10 / 6.482								
FY 2022		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		5 / 3.306		- / -		0 / 0.000		5 / 3.306								
FY 2023		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		5 / 3.372		0 / 0.000		5 / 3.372								
To Complete		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		Continuing		Continuing								
Total		- / -	- / -		- / -		- / -		- / -		- / -		7 / 4.449		10 / 6.482		5 / 3.306		5 / 3.372		Continuing		Continuing								
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	-	-	-	10	-	-	-	5	-	-	-	5	Cont.	Cont.
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	-	-	10	-	-	-	5	-	-	-	5	Cont.	Cont.

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6				P-1 Line Item Number / Title: 0670 / Other Navigation Equipment						Modification Number / Title: 13 / GW070: MILITARY GPS USER EQUIPMENT (MGUE)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.000	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.000	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.000	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: These funds are required for the procurement and installation of Military GPS User Equipment on submarine platforms.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6					P-1 Line Item Number / Title: 0670 / Other Navigation Equipment					Modification Number / Title: 13 / GW070: MILITARY GPS USER EQUIPMENT (MGUE)			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: GW070: MILITARY GPS USER EQUIPMENT					Modification Type: MILITARY GPS USER EQUIPMENT					Related RDT&E PEs: 0204228N			
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: GW070: MILITARY GPS USER EQUIPMENT (MGUE)													
B Kits													
Recurring													
1.1.1) SUBMARINE MGUE - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 2.000	- / -	6 / 2.000	
<i>Subtotal: Recurring</i>	<i>- / 0.000</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 2.000</i>	<i>- / 0.000</i>	<i>- / 2.000</i>	
<i>Subtotal: GW070: MILITARY GPS USER EQUIPMENT (MGUE)</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>6 / 2.000</i>	<i>- / -</i>	<i>6 / 2.000</i>	
<i>Subtotal: Procurement, All Modification Items</i>	<i>- / 0.000</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 2.000</i>	<i>- / 0.000</i>	<i>- / 2.000</i>	
Installation													
Modification Item 1 of 1: GW070: MILITARY GPS USER EQUIPMENT (MGUE)	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	Continuing	Continuing	
<i>Subtotal: Installation</i>	<i>- / 0.000</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>Continuing</i>	<i>Continuing</i>	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.000	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 6										P-1 Line Item Number / Title: 0670 / Other Navigation Equipment										Modification Number / Title: 13 / GW070: MILITARY GPS USER EQUIPMENT (MGUE)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: GW070: MILITARY GPS USER EQUIPMENT (MGUE)																															
Manufacturer Information																															
Manufacturer Name: TBD															Manufacturer Location: TBD																
Administrative Leadtime <i>(in Months)</i> : 3															Production Leadtime <i>(in Months)</i> : 6																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates																						Jan 2023									
Delivery Dates																						Jul 2023									
Installation Information																															
Method of Implementation: AIT:: Installation Name: SUBMARINE MGUE																															
Installation Cost		Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		To Complete		Total								
		<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>								
Prior Years		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2017		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2018		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2019		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2020		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2021		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2022		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2023		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		Continuing								
To Complete		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		Continuing								
Total		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		Continuing								
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	6
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	6

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment							P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog					
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	151.963	151.240	178.421	0.000	178.421	199.590	224.643	215.012	255.918	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	151.963	151.240	178.421	0.000	178.421	199.590	224.643	215.012	255.918	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	151.963	151.240	178.421	0.000	178.421	199.590	224.643	215.012	255.918	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	2.377	5.665	7.138	-	7.138	10.112	5.781	10.800	3.308	Continuing	Continuing
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: The Submarine Periscope, Imaging and Support Equipment program provides critical electromagnetic systems to all classes of submarine platforms. Systems include Electronic Warfare systems, Imaging systems, and RADAR systems which provide navigation safety and collision avoidance, particularly in high intensity littoral operations so that surveillance and weapons systems can be effectively employed. The approximately \$27M increase from FY18 to FY19 is primarily driven by the procurement of (2) additional Low Profile Photonics Masts (LPPM) to meet tactical requirements for VIRGINIA deployments, (2) Multifunction Modular Mast (MMM) antenna improvement subsystems to increase reliability and reduce operational and maintenance costs for VIRGINIA modernizations, and the increased obligation to address obsolescence issues faced by the BPS RADAR system to ensure reliable safety of ship navigation and PATRIOT RADAR system to maintain tactical awareness in littoral operations. IMAGING: The Submarine Periscopes and Imaging Equipment Program procures the Type 18 and Type 8 periscope upgrades; all variants of Photonics Mast (PM), including Low Profile Photonics Mast (LPPM) and Task Oriented Technology Insertion Mast (TOTIM) 360 degree imaging capability and incorporates it in the Integrated Submarine Imaging System (ISIS), and VIRGINIA Class imaging upgrades and Photonics and LPPM land based spares. Commander Naval Submarine Force (CNSF), Operations Review Group (ORG) selected the Periscope Acquisition, Tracking, and Ranging with Improved Observation Techniques (PATRIOT) Type 18 Periscope Rangefinder and the Night Owl Type 8 Infra-Red (IR) Periscope as high priority tactical control technologies to field. By OPNAV Ltr Ser. N77/3U629209, 12 June 2003, OPNAV N87 established the ISIS to rapidly field these systems and integrate existing periscope imagery systems into a single system for installation on board submarines. An ISIS capability development document (CDD) was approved 22 Dec 2011. The CDD is used to fully integrate the ISIS program of record into the submarine force's rapid insertion technology process and to incorporate Fleet-endorsed requirements such as LPPM. ISIS supports high intensity operations in the littorals, providing the submarine force with the tactical imaging systems necessary to safely and effectively employ its surveillance and weapons capabilities. The IR imaging capability improves imaging at night and in low visibility conditions. The PATRIOT Automated Range Finder provides a 360 degree search independent of the visual search, enhanced situational awareness and provides a collision avoidance capability. Tactical Imagery Technology Insertion includes the common control and displays hardware and software on all platforms regardless of imaging sensors, an integrated imaging system that provides for operator alerts, imaging enhancement tools and contact analysis tools, and a fully Submarine Warfare Federated Tactical Systems (SWFTS) integrated system providing "any display anywhere." Funding improves submarine imaging capability in the areas of: ship safety, Intelligence, Surveillance and Reconnaissance (ISR), tactical control (contact management in the littorals) to provide high quality imaging 24 hours a day, 7 days a week in all weather conditions to support submarine operations worldwide. ISIS provides for the modernization of imaging systems to improve imaging capabilities for the submarine force in support of ISR requirements. This includes the integration of new capabilities, both outboard, inboard hardware and software, into the Type 18 and Type 8 Periscopes for LOS ANGELES Class and SEAWOLF Class submarines, the Photonics Mast Variant (PMV) for SSGN, Photonics Mast upgrades to the Virginia Class AN/BVY-1 ISIS capability, LPPM and TOTIM.												

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment		P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog
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		
PL010 - Imaging ISIS Technical Insertions - Continuing in FY19 funding procures Imaging systems and Technical Insertion kits, Design Services Allocation (DSA) installation support, and spares to upgrade ISIS systems on LOS ANGELES, SEAWOLF, VA and OHIO Class SSGN/SSBN platforms to allow for Capability Insertion and obsolescence avoidance. FY16 and later procurements also adds funding for improved copper-fiber optic diploops and hull penetrators required to support advanced Imaging and Early Warning capabilities included in Low Profile Photonics Mast and TOTIM. PL011 - Imaging Block Upgrades - FY19 funding continues procurement of Periscopes and Imaging Equipment reliability, capability, and maintainability upgrades, e.g., Eyepiece Box, periscope mechanical hoisting mechanism upgrades, inboard electronic processing hardware and associated Integrated Logistics Support (ILS), Robust Surveillance Program, Certification of regional repair centers for Imaging System maintenance and technical data. Variable quantities and types are bought in each fiscal year. PL012 - Funds procure replacements in support of Special Support Equipment (SSE) for each maintenance level to ensure systems are maintained in a state of operational readiness. Equipment includes Q-Band Test Equipment, Mast Dynamic Collimator, Eyebow/Mast Test Set, and Antenna/Outer Head Simulator required due to obsolescence of existing imaging systems SSE. PL015 - Funding is for Interim Contract Support provided by the periscope manufacturer. The majority of the funding is for Type 18 service life extension, depot repair and upgrades for all configurations of Photonics Masts including LPPM. It also funds all levels of repairs for all types of tactical submarine imaging systems. PL016 - Funding is for imaging systems training requirements to include curriculum development, training materials, and initial factory training pilot course conduct, Navy Training Plans, and instructor advisory services. PL025 - Funding is for the procurement, support and technical insertion of VIRGINIA Class low profile imaging masts (including LPPM and TOTIM) production modules and land based spare masts and associated components. The spares will be used for replacement Imaging Masts on VIRGINIA Class Submarines. Quantity of spares will increase with VIRGINIA submarine procurements. PL830 - Production Engineering funds provide the following functions: value engineering; review and evaluation of production design data and documentation; production configuration control; maintenance engineering efforts designed and incorporated into the production manufacturing process, and other related engineering functions that are integral to all of the Imaging Systems and ancillary components. PL900 - Imaging Systems engineering, technical and maintenance services funds provide the following functions: In-Service engineering and technical support to deployed Periscope and Imaging Equipment, imaging system installation and integration planning, SHIPALT and TEMPALT technical data preparation, production hardware design review, engineering/technical support for installations, training materials development, field engineering and technical problem resolution, block upgrade installation planning, configuration management, and maintenance planning including inventory, management, repair, and restoration scheduling. PL927 - Funding is for the installation of Fleet Modernization Program Equipment. PL4M7 - Funding is for the installation of non-Fleet Modernization Program Equipment. (U) ELECTRONIC WARFARE: The Submarine Support Equipment Program (SSEP) was established to develop and support systems which provide the capability to exploit signal intercepts for tactical support and early warning of threat sensors. Capability Development Document (CDD) 907-97-16 dated 27 September 2016 directs PEOSUBS to provide a modern Electronic Warfare (EW) capability to LOS ANGELES, SEAWOLF, VIRGINIA and SSGN Class submarines. Funds procure AN/BLQ-10(V) Non-Recurring Engineering (NRE), new technology integration, and augmentation systems for EW Modernization upgrades for all submarine platforms. Funds also procure modification kits for the AN/ BLQ-10(V) EW System, Reliability & Maintainability, obsolescence and Operational Field Change Kits for the legacy AN/WLR-8(V)2 ESM system, and the legacy AN/BRD-7 direction finding system. Funds buy Fleet directed unique equipment in limited quantities that are maintained in a TEMPALT pool and rotated among attack submarines as dictated by scheduled operations and to provide specific capability improvements to major SSN sensor systems. ML003 - SSEP special support equipment allows the procurement of special purpose test equipment utilized by the Type Commander Groom Teams. Exact quantities vary from year to year based on Fleet requirements.		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment		P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog
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		
ML007 - Procures the Improved Communications Acquisition and Direction Finding (ICADF) system below deck units for installation on LOS ANGELES, SEAWOLF and VIRGINIA Class submarines.		
ML008 - Procures the ICADF Multi-Function Modular Mast (MMM) Antenna and subsystems for installation on LOS ANGELES and VIRGINIA Class submarines and advanced EW collection masts for future modernization.		
ML010 - Procures Technical Insertions (TI) for installation on LOS ANGELES, SSGN, SEAWOLF, and VIRGINIA Class submarines that provide updates to the AN/BLQ-10(V) configuration baseline which incorporate current Commercial off the Shelf (COTS) processing technology and software to account for obsolescence avoidance, and Reliability, Maintainability and Availability (RMA), installation support and associated Integrated Logistics Support (ILS) and technical data. Hardware builds include supporting platform level Submarine Warfare Federated Tactical Systems (SWFTS) interfaces. TI upgrade kits are procured under various configurations in each fiscal year including required NRE for all future planned Technical Insertions in accordance with the SWFTS schedule. Funding also provides engineering for the capabilities inserted into the Advanced Processor Build (APB) process overseen by PEO Integrated Warfare Systems (IWS). The cost of digital upgrades for modernizations captured in ML020 is combined into the ML010 line starting in FY20. In FY21, all funding for digital upgrades in ML020 for future TIs is combined with ML010. This is being done in order to provide spiral improvements toward fully digital capabilities via the TI/APB process.		
ML014 - FY19 continues legacy Submarine Electronic Surveillance Measures (SubESM) procurement including AN/BRD-7 and AN/WLR-8 Reliability and Maintainability (R&M) obsolescence and operational Field Change Kits and other materials for Obsolescence Mitigation, e.g., Digital Display Unit (DDU) obsolescence upgrade, Solid State Memory, Heat Dissipation improvement, related H,M&E sail components, Analog relay replacement, antenna cabling replacement, related Hull, Mechanical & Electrical (H,M&E) sail components and associated Integrated Logistics Support (ILS), and technical data.		
ML015 - Procures the AN/BLQ-10(V)2/3/4 EW System for installation on LOS ANGELES, SEAWOLF, VIRGINIA and SSGN Class submarines.		
ML017 - Procures AN/BLQ-10(V) and ICADF subsystem Product Improvement Field Change Kits including: emergent Engineering Changes, SIGINT carry-on equipment racks, SWFTS upgrades and associated Integrated Logistics Support (ILS) and technical data. Provides AN/BLQ-10 intermediate level repairs, changes and maintenance activities and associated materials that improve the overall Reliability, Maintainability and Availability of fielded EW systems. Procures sustainment efforts for AN/BLQ-10 active, deploying fleet assets. Provides funding for Submarine Launched Decoy Buoy to reduce risk of counter-detection for operating submarines. Provides funding for procurement of MMM Payload to support submarine Fleet required improved Unmanned Aerial System (UAS) communications/Tactical Data Link (TDL)/ Electronic Attack (EA) capability.		
ML018 - Funds procure EW Modernization upgrades to the VIRGINIA Class AN/BLQ-10(V)1 EW System including Photonics ES Product Improvement (PEPI-3), PATRIOT Phase B radar.		
ML020: Funds procure AN/BLQ-10(V) Non-Recurring Engineering (NRE) and modernization kits for EW Modernization upgrades on all SSN/SSGN platforms. The AN/BLQ-10(V) efforts augment the current AN/BLQ-10(V) system for the rapid fielding of required capabilities to address changing and emerging threats in the Radio Frequency (RF) spectrum. In addition, each procurement aligns with hardware builds supporting platform level Submarine Warfare Federated Tactical Systems (SWFTS). The cost of digital upgrades for modernizations captured in ML020 is combined into the ML010 line starting in FY20. In FY21, all funding for digital upgrades in ML020 for future TIs is combined with ML010.		
ML021 - Submarine RADAR funds provide BPS 15/16 Reliability, Maintainability and Availability (RMA), Field Change Kits and material procurements for obsolescence mitigation. Provides in-service and systems engineering, logistics, material, configuration management, quality assurance, installation and test certification support only for the Submarine Surface Navigation (AN/BPS-15/16) Radar. Provides for interface with the conjoined Voyage Management System (VMS) and Electronic Chart & Display Information System - Navy (ECDIS-N). Funding addresses sustainability of PATRIOT Phase B radar including repair/refurbishment, in-service engineering, and modernization. In addition, each procurement aligns with hardware builds supporting platform level Submarine Warfare Federated Tactical Systems (SWFTS).		
ML830 - Production Engineering funds provide the following functions: value engineering; review and evaluation of production design data and documentation; production configuration control; maintenance engineering efforts designed and incorporated into the production manufacturing process, and other related engineering functions that are integral to all production EW Systems and upgrades.		
ML927 - Provides for the Installation of Equipment including Fleet Modernization Program Installations for shipboard systems.		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment		P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog
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		
ML4M7 - Provides for the Installation of non-Fleet Modernization Program Equipment.		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy							Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment					P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog					
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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 PERISCOPES & IMAGING EQUIPMENT				- / 0.000	- / 15.958	- / 14.948	- / 16.169	- / -	- / 16.169
P-40a	Submarine Supt Equip Prog				- / 0.000	- / 5.338	- / 5.232	- / 13.793	- / -	- / 13.793
P-3a	1 / PL010 - Imaging ISIS Technical Insertion (SWFTS) (ORDALT)				- / 0.000	- / 61.364	- / 45.311	- / 36.985	- / 0.000	- / 36.985
P-3a	2 / PL011 Imaging Upgrades/Technical Insertions Imaging: Type 8/ Type 18 (ORDALT)				- / 0.000	- / 0.369	- / 0.376	- / 0.384	- / 0.000	- / 0.384
P-3a	3 / PL025 Low Profile Imaging Mast (SHIPALT)				- / 0.000	- / 0.000	- / 5.994	- / 18.047	- / 0.000	- / 18.047
P-3a	4 / ML007 ICADF (SHIPALT (ES SYSTEM COMMS DF))				- / 0.000	- / 1.245	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	5 / ML008 ICADF MMM ANTENNA (SHIPALT)				- / 0.000	- / 1.159	- / 0.000	- / 8.852	- / 0.000	- / 8.852
P-3a	6 / ML010 TECHNICAL INSERTION (SWFTS) (SHIPALT)				- / 0.000	- / 19.230	- / 23.730	- / 28.895	- / 0.000	- / 28.895
P-3a	7 / ML015 AN/BLQ-10(V) SSN ES SYSTEM (SHIPALT)				- / 0.000	- / 1.380	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	8 / ML017 ANBLQ-10(V) FIELD CHANGE KITS (ORDALT)				- / 0.000	- / 7.404	- / 17.663	- / 23.092	- / 0.000	- / 23.092
P-3a	9 / ML018 VA CLASS ES MODERNIZATION PATRIOT (SHIPALT)				- / 0.000	- / 2.726	- / 2.955	- / 0.360	- / 0.000	- / 0.360
P-3a	10 / ML020 AN/BLQ-10(V) (SHIPALT)				- / 0.000	- / 35.790	- / 35.031	- / 31.844	- / 0.000	- / 31.844
P-40	Total Gross/Weapon System Cost				- / 0.000	- / 151.963	- / 151.240	- / 178.421	- / 0.000	- / 178.421
Exhibits Schedule					FY 2020	FY 2021	FY 2022	FY 2023	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 PERISCOPES & IMAGING EQUIPMENT				- / -	- / -	- / -	- / -	- / -	- / -
P-40a	Submarine Supt Equip Prog				- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / PL010 - Imaging ISIS Technical Insertion (SWFTS) (ORDALT)				- / 33.738	- / 70.018	- / 41.780	- / 30.471	Continuing	Continuing
P-3a	2 / PL011 Imaging Upgrades/Technical Insertions Imaging: Type 8/ Type 18 (ORDALT)				- / 0.391	- / 0.399	- / 0.407	- / 0.416	Continuing	Continuing
P-3a	3 / PL025 Low Profile Imaging Mast (SHIPALT)				- / 27.525	- / 9.359	- / 38.777	- / 70.828	Continuing	Continuing
P-3a	4 / ML007 ICADF (SHIPALT (ES SYSTEM COMMS DF))				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 1.245
P-3a	5 / ML008 ICADF MMM ANTENNA (SHIPALT)				- / 0.000	- / 2.506	- / 0.000	- / 0.000	- / 0.000	- / 12.517
P-3a	6 / ML010 TECHNICAL INSERTION (SWFTS) (SHIPALT)				- / 65.756	- / 87.528	- / 80.526	- / 100.043	Continuing	Continuing
P-3a	7 / ML015 AN/BLQ-10(V) SSN ES SYSTEM (SHIPALT)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 1.380
P-3a	8 / ML017 ANBLQ-10(V) FIELD CHANGE KITS (ORDALT)				- / 25.008	- / 23.541	- / 25.427	- / 25.935	Continuing	Continuing
P-3a	9 / ML018 VA CLASS ES MODERNIZATION PATRIOT (SHIPALT)				- / 0.367	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 6.408
P-3a	10 / ML020 AN/BLQ-10(V) (SHIPALT)				- / 20.762	- / 1.722	- / 0.000	- / 0.000	- / 0.000	- / 125.149
P-40	Total Gross/Weapon System Cost				- / 199.590	- / 224.643	- / 215.012	- / 255.918	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-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment		P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog
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		
Justification: IMAGING - FY 2019 procures TI-18 on (6) Los Angeles Class, (2) SSGN Class submarines, and (2) SSBN Class submarines. Budget installs SWFTS modernizations on (3) VIRGINIA Class, (6) Los Angeles Class, and (1) SEAWOLF Class submarines. FY 2019 also reflects an increase of (2) LPPM in order to meet PACFLT requirements for all deploying VIRGINIA Class submarines in the Pacific to be equipped with low profile imaging masts. EW - FY 2019 procures TI-18 on (6) Los Angeles Class and (2) SSGN Class submarines. Unit costs are hull dependent and build on previous baselines to add both existing and future capabilities. FY 2019 installs SWFTS modernizations on (3) VIRGINIA Class, (6) Los Angeles Class, and (1) SEAWOLF Class submarines. FY 2019 also reflects an increase of (2) Multifunction Modular Mast (MMM) antenna improvement subsystems to increase reliability and reduce operational and maintenance costs for VIRGINIA modernizations and increases obligation to address obsolescence issues faced by the BPS RADAR system to ensure reliable safety of ship navigation and PATRIOT RADAR system to maintain tactical awareness in littoral operations		

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy																Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9								P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog								Aggregated Items Title: SUBMARINE PERISCOPES & IMAGING EQUIPMENT			

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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) PL012 PERISCOPE SPECIAL SUPPORT EQUIPMENT																				
1.1) SPECIAL SUPPORT EQUIPMENT	A		-	-	-	-	-	0.546	-	-	0.556	-	-	0.568	-	-	-	-	-	0.568
Subtotal: 1) PL012 PERISCOPE SPECIAL SUPPORT EQIPMENT			-	-	0.000	-	-	0.546	-	-	0.556	-	-	0.568	-	-	-	-	-	0.568
2) PL015 PERISCOPE INTERIM CONTRACTOR SUPPORT																				
2.1) INTERIM CONTRACTOR SUPPORT	A		-	-	-	-	-	11.179	-	-	10.492	-	-	11.622	-	-	-	-	-	11.622
Subtotal: 2) PL015 PERISCOPE INTERIM CONTRACTOR SUPPORT			-	-	0.000	-	-	11.179	-	-	10.492	-	-	11.622	-	-	-	-	-	11.622
3) PL016 PERISCOPE TRAINING																				
3.1) TRAINING	A		-	-	-	-	-	0.182	-	-	0.185	-	-	0.189	-	-	-	-	-	0.189
Subtotal: 3) PL016 PERISCOPE TRAINING			-	-	0.000	-	-	0.182	-	-	0.185	-	-	0.189	-	-	-	-	-	0.189
4) PL830 PERISCOPE PRODUCTION ENGINEERING																				
4.1) PRODUCTION ENGINEERING	A		-	-	-	-	-	3.646	-	-	3.715	-	-	3.790	-	-	-	-	-	3.790
Subtotal: 4) PL830 PERISCOPE PRODUCTION ENGINEERING			-	-	0.000	-	-	3.646	-	-	3.715	-	-	3.790	-	-	-	-	-	3.790
5) PL900 PERISCOPE CONSULTING SERVICES ⁽¹⁾																				
5.1) CONSULTING SERVICES	A		-	-	-	-	-	0.405	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 5) PL900 PERISCOPE CONSULTING SERVICES			-	-	0.000	-	-	0.405	-	-	-	-	-	-	-	-	-	-	-	-
Total			-	-	0.000	-	-	15.958	-	-	14.948	-	-	16.169	-	-	-	-	-	16.169

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

Footnotes:

⁽¹⁾ FY18 and out, PL900 requirements are consolidated under PL010.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy														Date: February 2018						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9						P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog								Aggregated Items Title: Submarine Supt Equip Prog						
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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) ML003 SSEP SPECIAL SUPPORT EQUIPMENT																				
1.1) SPECIAL SUPPORT EQUIPMENT	A		-	-	-	-	-	0.329	-	-	0.335	-	-	0.342	-	-	-	-	-	0.342
Subtotal: 1) ML003 SSEP SPECIAL SUPPORT EQUIPMENT			-	-	0.000	-	-	0.329	-	-	0.335	-	-	0.342	-	-	-	-	-	0.342
2) ML014 Legacy Submarine Electronic Surveillance Measures (SubESM)																				
2.1) LEGACY SubESM	A		-	-	-	-	-	0.480	-	-	0.400	-	-	0.360	-	-	-	-	-	0.360
Subtotal: 2) ML014 Legacy Submarine Electronic Surveillance Measures (SubESM)			-	-	0.000	-	-	0.480	-	-	0.400	-	-	0.360	-	-	-	-	-	0.360
3) ML830 PRODUCTION ENGINEERING																				
3.1) PRODUCTION ENGINEERING	A		-	-	-	-	-	3.343	-	-	3.407	-	-	3.475	-	-	-	-	-	3.475
Subtotal: 3) ML830 PRODUCTION ENGINEERING			-	-	0.000	-	-	3.343	-	-	3.407	-	-	3.475	-	-	-	-	-	3.475
4) ML021 Submarine RADARs																				
4.1) Submarine RADARs ⁽²⁾	A		-	-	-	-	-	1.186	-	-	1.090	-	-	9.616	-	-	-	-	-	9.616
Subtotal: 4) ML021 Submarine RADARs			-	-	0.000	-	-	1.186	-	-	1.090	-	-	9.616	-	-	-	-	-	9.616
Total			-	-	0.000	-	-	5.338	-	-	5.232	-	-	13.793	-	-	-	-	-	13.793
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
Footnotes:																				
⁽²⁾ FY19 increases funding for BPS RADAR and PATRIOT RADAR wholeness which is required to improve the low operational availability of these systems and align with SWFTS modernization schedule. FY19 tasks include BPS RADAR SHIPALT/NRE/GFI package development for SSBN/SSN21/SSN774, Depot and In-Service Engineering Agent standup for both BPS RADAR and PATRIOT, ILS efforts to achieve PATRIOT material supportability by NAVSUP, procurement of (3) BPS RADAR modernization kits, support (13) BPS RADAR fleet installations, and obsolescence redesign for BPS RADAR.																				

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog						Modification Number / Title: 1 / PL010 - Imaging ISIS Technical Insertion (SWFTS)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	61.364	45.311	36.985	0.000	36.985	33.738	70.018	41.780	30.471	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	61.364	45.311	36.985	0.000	36.985	33.738	70.018	41.780	30.471	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	61.364	45.311	36.985	0.000	36.985	33.738	70.018	41.780	30.471	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Provides for the modernization of Imaging systems and Technical Insertion kits to upgrade Integrated Submarine Imaging System (ISIS) on LOS ANGELES, SEAWOLF, VIRGINIA and OHIO Class SSGN platforms in support of Intelligence, Surveillance and Reconnaissance (ISR) requirements. VIRGINIA Tech Insertion unit costs reflect copper/fiber diploops and hull penetrators needed to field Low Profile Photonics Mast (LPPM) and the Task Oriented Tech Insertion Mast (TOTIM) on these modernization hulls as well as higher base unit cost of VIRGINIA Tech Insertions. VIRGINIA Initial ISIS Backfits also contain copper/fiber updates for those hulls. This line item aligns the periscope, imaging, and support equipment with the Submarine Warfare Federated Tactical System (SWFTS) interface with the Combat Control and Acoustic upgrades in budget line items 5420 and 2150.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog						Modification Number / Title: 1 / PL010 - Imaging ISIS Technical Insertion (SWFTS)			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: ISIS TI				Modification Type: ORDALT				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: PL010 - Imaging ISIS Technical Insertion (SWFTS)													
B Kits													
Recurring													
1.1.1) 688/21 TECHNICAL INSERTION (SWFTS) - NonOrganic	13 / 0.000	1 / 1.018	7 / 7.262	6 / 6.348	- / -	6 / 6.348	5 / 5.395	- / -	5 / 5.615	8 / 9.160	Continuing	Continuing	
1.1.2) VA TECHNICAL INSERTION (SWFTS) - NonOrganic	- / -	5 / 24.387	3 / 14.910	- / -	- / -	- / -	3 / 14.789	13 / 57.059	4 / 16.663	2 / 7.320	Continuing	Continuing	
1.1.3) SSGN TECHNICAL INSERTION (SWFTS) - NonOrganic	- / -	- / -	- / -	2 / 2.776	- / -	2 / 2.776	2 / 2.832	- / -	- / -	- / -	- / -	4 / 5.608	
1.1.4) VA ISIS BACKFIT (SWFTS) - NonOrganic	2 / 0.000	2 / 14.243	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 14.243	
1.1.5) SSBN BACKFIT (SWFTS) - NonOrganic	2 / 0.000	3 / 0.580	3 / 0.591	2 / 0.402	- / -	2 / 0.402	3 / 0.615	1 / 0.209	4 / 0.852	4 / 0.868	Continuing	Continuing	
Subtotal: Recurring	- / 0.000	- / 40.228	- / 22.763	- / 9.526	- / -	- / 9.526	- / 23.631	- / 57.268	- / 23.130	- / 17.348	Continuing	Continuing	
Subtotal: PL010 - Imaging ISIS Technical Insertion (SWFTS)	17 / 0.000	11 / 40.228	13 / 22.763	10 / 9.526	- / -	10 / 9.526	13 / 23.631	14 / 57.268	13 / 23.130	14 / 17.348	Continuing	Continuing	
Subtotal: Procurement, All Modification Items	- / 0.000	- / 40.228	- / 22.763	- / 9.526	- / -	- / 9.526	- / 23.631	- / 57.268	- / 23.130	- / 17.348	Continuing	Continuing	
Support (All Modification Items)													
2.1) ISIS TECHNICAL INSERTION NRE ⁽³⁾	- / -	- / 17.015	- / 15.810	- / 22.197	- / -	- / 22.197	- / 6.923	- / 7.061	- / 7.202	- / 7.346	Continuing	Continuing	
Subtotal: Support	- / 0.000	- / 17.015	- / 15.810	- / 22.197	- / -	- / 22.197	- / 6.923	- / 7.061	- / 7.202	- / 7.346	Continuing	Continuing	
Installation													
Modification Item 1 of 1: PL010 - Imaging ISIS Technical Insertion (SWFTS)	- / 0.000	- / 4.121	- / 6.738	- / 5.262	- / 0.000	- / 5.262	- / 3.184	- / 5.689	- / 11.448	- / 5.777	- / 5.178	- / 47.397	
Subtotal: Installation	- / 0.000	- / 4.121	- / 6.738	- / 5.262	- / -	- / 5.262	- / 3.184	- / 5.689	- / 11.448	- / 5.777	- / 5.178	- / 47.397	
Total													
Total Cost (Procurement + Support + Installation)	0.000	61.364	45.311	36.985	0.000	36.985	33.738	70.018	41.780	30.471	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog										Modification Number / Title: 1 / PL010 - Imaging ISIS Technical Insertion (SWFTS)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: PL010 - Imaging ISIS Technical Insertion (SWFTS)																															
Manufacturer Information																															
Manufacturer Name: Multiple Vendors															Manufacturer Location: Various																
Administrative Leadtime (in Months): 6															Production Leadtime (in Months): 12																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates		Mar 2017				Mar 2018				Mar 2019				Mar 2020				Mar 2021				Mar 2022				Mar 2023					
Delivery Dates		Mar 2018				Mar 2019				Mar 2020				Mar 2021				Mar 2022				Mar 2023				Mar 2024					
Installation Information																															
Method of Implementation: AIT:: Installation Name: 688/21 TECHNICAL INSERTION (SWFTS)																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		6 / 0.000		7 / 2.170		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		13 / 2.170					
FY 2017		- / -		- / -		1 / 0.316		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		1 / 0.316					
FY 2018		- / -		- / -		- / -		7 / 2.254		0 / 0.000		7 / 2.254		- / -		- / -		- / -		- / -		- / -		0 / 0.000		7 / 2.254					
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		6 / 1.968		- / -		- / -		- / -		- / -		0 / 0.000		6 / 1.968					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		5 / 1.675		- / -		- / -		- / -		0 / 0.000		5 / 1.675					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		5 / 1.745		0 / 0.000		5 / 1.745					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		8 / 2.848		8 / 2.848					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
Total		6 / 0.000		7 / 2.170		1 / 0.316		7 / 2.254		0 / 0.000		7 / 2.254		6 / 1.968		5 / 1.675		- / -		5 / 1.745		8 / 2.848		45 / 12.976							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	6	-	3	2	2	-	1	-	-	-	3	2	2	-	2	2	2	-	2	2	1	-	-	-	-	-	2	2	1	8	45
Out	6	-	3	2	2	-	1	-	-	-	3	2	2	-	2	2	2	-	2	2	1	-	-	-	-	-	2	2	1	8	45

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog	Modification Number / Title: 1 / PL010 - Imaging ISIS Technical Insertion (SWFTS)

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

Modification Item 1 of 1: PL010 - Imaging ISIS Technical Insertion (SWFTS)

Installation Information

Method of Implementation: AIT:: Installation Name: VA TECHNICAL INSERTION (SWFTS)

Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017	- / -	- / -	5 / 4.313	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	5 / 4.313
FY 2018	- / -	- / -	- / -	3 / 2.639	0 / 0.000	3 / 2.639	- / -	- / -	- / -	- / -	0 / 0.000	3 / 2.639
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 2.646	- / -	- / -	0 / 0.000	3 / 2.646
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	13 / 11.317	- / -	0 / 0.000	13 / 11.317
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 3.496	0 / 0.000	4 / 3.496
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 1.783	2 / 1.783
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	5 / 4.313	3 / 2.639	0 / 0.000	3 / 2.639	- / -	3 / 2.646	13 / 11.317	4 / 3.496	2 / 1.783	30 / 26.194

Installation Schedule

	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	1	2	2	-	-	1	1	1	-	-	-	-	-	1	1	1	-	5	4	4	-	2	1	1	2	30
Out	-	-	-	-	-	-	1	2	2	-	1	1	1	-	-	-	-	-	1	1	1	-	5	4	4	-	2	1	1	2	30

Method of Implementation: AIT:: Installation Name: SSGN TECHNICAL INSERTION (SWFTS)

Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.966	- / -	- / -	- / -	0 / 0.000	2 / 0.966
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.984	- / -	- / -	0 / 0.000	2 / 0.984
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog										Modification Number / Title: 1 / PL010 - Imaging ISIS Technical Insertion (SWFTS)																
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:																					
Modification Item 1 of 1: PL010 - Imaging ISIS Technical Insertion (SWFTS)																															
Installation Information																															
Method of Implementation: AIT:: Installation Name: SSGN TECHNICAL INSERTION (SWFTS)																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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>																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.966	2 / 0.984	- / -	- / -	0 / 0.000	4 / 1.950																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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
Method of Implementation: AIT:: Installation Name: VA ISIS BACKFIT (SWFTS)																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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		- / -	2 / 1.715	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 1.715																		
FY 2017		- / -	- / -	2 / 1.748	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 1.748																		
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		- / -	2 / 1.715	2 / 1.748	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	4 / 3.463																		

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Exhibit P-3a, Individual Modification: PB 2019 Navy																							Date: February 2018								
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog										Modification Number / Title: 1 / PL010 - Imaging ISIS Technical Insertion (SWFTS)											
ID Code (A=Service Ready, B=Not Service Ready) :																	MDAP/MAIS Code:														
Modification Item 1 of 1: PL010 - Imaging ISIS Technical Insertion (SWFTS)																															
Installation Information																															
Method of Implementation: AIT:: Installation Name: VA ISIS BACKFIT (SWFTS)																															
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	-	-	1	1	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Out	-	-	1	1	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Method of Implementation: AIT:: Installation Name: SSBN BACKFIT (SWFTS)																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		- / -		2 / 0.236		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 0.236							
FY 2017		- / -		- / -		3 / 0.361		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		3 / 0.361							
FY 2018		- / -		- / -		- / -		3 / 0.369		0 / 0.000		3 / 0.369		- / -		- / -		- / -		- / -		0 / 0.000		3 / 0.369							
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		2 / 0.250		- / -		- / -		- / -		0 / 0.000		2 / 0.250							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		3 / 0.384		- / -		- / -		0 / 0.000		3 / 0.384							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 0.131		- / -		0 / 0.000		1 / 0.131							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		4 / 0.536		4 / 0.536							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		4 / 0.547		4 / 0.547							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		- / -		2 / 0.236		3 / 0.361		3 / 0.369		0 / 0.000		3 / 0.369		2 / 0.250		3 / 0.384		1 / 0.131		4 / 0.536		4 / 0.547		22 / 2.814							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	TC	Tot
In	-	-	1	1	-	-	1	1	1	-	1	1	1	-	1	1	-	-	1	1	1	-	1	-	-	-	2	1	1	4	22
Out	-	-	1	1	-	-	1	1	1	-	1	1	1	-	1	1	-	-	1	1	1	-	1	-	-	-	2	1	1	4	22
Footnotes: ⁽³⁾ TI/APB NRE funding levels are adjusted annually in response to the change in the quantity and the complexity of each new capability being incorporated into the inboard imaging software. FY19 NRE increase will fund significant required improvements to core ISIS system functionality (including cybersecurity protections). It would commence the system software and hardware expansion (as a result of prior																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog	Modification Number / Title: 1 / PL010 - Imaging ISIS Technical Insertion (SWFTS)
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
research and TEMPALT) to support 360 degree video and integration with TOTIM. NRE is required to integrate the highly complex capabilities being incorporated within the Imaging system designed to increase operational effectiveness and improve situational awareness.		

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog						Modification Number / Title: 2 / PL011 Imaging Upgrades/Technical Insertions Imaging: Type 8/Type 18		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	0.369	0.376	0.384	0.000	0.384	0.391	0.399	0.407	0.416	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	0.369	0.376	0.384	0.000	0.384	0.391	0.399	0.407	0.416	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	0.369	0.376	0.384	0.000	0.384	0.391	0.399	0.407	0.416	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Provides obsolescence related upgrades for Submarine Periscopes. One (1) set is procured in each fiscal year that includes variable quantities.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog						Modification Number / Title: 2 / PL011 Imaging Upgrades/Technical Insertions Imaging: Type 8/Type 18			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: TYPE 8/TYPE 18				Modification Type: ORDALT				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: PL011 Imaging Upgrades/ Technical Insertions Imaging: Type 8/Type 18													
B Kits													
Recurring													
1.1.1) TYPE 8/TYPE 18 - NonOrganic	67 / 0.000	1 / 0.251	1 / 0.256	1 / 0.261	- / -	1 / 0.261	1 / 0.266	1 / 0.271	1 / 0.276	1 / 0.282	Continuing	Continuing	
<i>Subtotal: Recurring</i>	- / 0.000	- / 0.251	- / 0.256	- / 0.261	- / -	- / 0.261	- / 0.266	- / 0.271	- / 0.276	- / 0.282	Continuing	Continuing	
<i>Subtotal: PL011 Imaging Upgrades/Technical Insertions Imaging: Type 8/Type 18</i>	67 / 0.000	1 / 0.251	1 / 0.256	1 / 0.261	- / -	1 / 0.261	1 / 0.266	1 / 0.271	1 / 0.276	1 / 0.282	Continuing	Continuing	
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.000	- / 0.251	- / 0.256	- / 0.261	- / -	- / 0.261	- / 0.266	- / 0.271	- / 0.276	- / 0.282	Continuing	Continuing	
Installation													
Modification Item 1 of 1: PL011 Imaging Upgrades/ Technical Insertions Imaging: Type 8/Type 18	- / 0.000	- / 0.118	- / 0.120	- / 0.123	- / 0.000	- / 0.123	- / 0.125	- / 0.128	- / 0.131	- / 0.134	- / 0.137	- / 1.016	
<i>Subtotal: Installation</i>	- / 0.000	- / 0.118	- / 0.120	- / 0.123	- / -	- / 0.123	- / 0.125	- / 0.128	- / 0.131	- / 0.134	- / 0.137	- / 1.016	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.369	0.376	0.384	0.000	0.384	0.391	0.399	0.407	0.416	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog										Modification Number / Title: 2 / PL011 Imaging Upgrades/Technical Insertions Imaging: Type 8/Type 18												
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																	
Modification Item 1 of 1: PL011 Imaging Upgrades/Technical Insertions Imaging: Type 8/Type 18																																
Manufacturer Information																																
Manufacturer Name: Multiple Vendors															Manufacturer Location: Various																	
Administrative Leadtime (in Months): 6															Production Leadtime (in Months): 14																	
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023						
Contract Dates		Mar 2017				Mar 2018				Mar 2019				Mar 2020				Mar 2021				Mar 2022				Mar 2023						
Delivery Dates		May 2018				May 2019				May 2020				May 2021				May 2022				May 2023				May 2024						
Installation Information																																
Method of Implementation: AIT:: Installation Name: TYPE 8/TYPE 18																																
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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 / 0.000		1 / 0.118		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		67 / 0.118								
FY 2017		- / -		- / -		1 / 0.120		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		1 / 0.120								
FY 2018		- / -		- / -		- / -		1 / 0.123		0 / 0.000		1 / 0.123		- / -		- / -		- / -		- / -		0 / 0.000		1 / 0.123								
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		1 / 0.125		- / -		- / -		- / -		0 / 0.000		1 / 0.125								
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 0.128		- / -		- / -		0 / 0.000		1 / 0.128								
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 0.131		- / -		0 / 0.000		1 / 0.131								
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 0.134		0 / 0.000		1 / 0.134								
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 0.137		1 / 0.137								
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
Total		66 / 0.000		1 / 0.118		1 / 0.120		1 / 0.123		0 / 0.000		1 / 0.123		1 / 0.125		1 / 0.128		1 / 0.131		1 / 0.134		1 / 0.137		74 / 1.016								
Installation Schedule																																
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	-	-	1	-	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	1	-	1	74
Out	66	-	-	1	-	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	1	-	1	74

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Exhibit P-3a, Individual Modification: PB 2019 Navy							Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog				Modification Number / Title: 3 / PL025 Low Profile Imaging Mast			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	0.000	0.000	5.994	18.047	0.000	18.047	27.525	9.359	38.777	70.828	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	0.000	0.000	5.994	18.047	0.000	18.047	27.525	9.359	38.777	70.828	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	0.000	0.000	5.994	18.047	0.000	18.047	27.525	9.359	38.777	70.828	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:

VA Class advanced Low Profile Imaging masts including Low Profile Photonics Mast (LPPM) and Task Oriented Tech Insertion Mast (TOTIM). Procures initial modernization assets as well as spare masts later in FYDP to maintain overall spares ratio for imaging masts as quantity of imaging equipped ships increases. Maintaining sufficient quantities of installed and spare low profile imaging masts is essential to meet PACFLT requirements for all deploying VA class submarines in the Pacific to be equipped with low profile imaging masts. With development commencing in FY18 and procurement beginning in FY20, procurement of TOTIM will provide vastly increased capability, reduced maintenance costs and increased development flexibility for new mast sensors.

FY19 increase reflects procurement of (2) additional LPPM to meet tactical requirements for VIRGINIA Class deployments.

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy								Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9			P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog					Modification Number / Title: 3 / PL025 Low Profile Imaging Mast					
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: Photonics Mast			Modification Type: SHIPALT					Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: PL025 Low Profile Imaging Mast													
B Kits													
Recurring													
1.1.1) LPPM - NonOrganic	3 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 0.000	
1.1.2) LPPM SPARE - Organic ⁽⁴⁾	- / -	- / -	1 / 5.879	3 / 17.988	- / -	3 / 17.988	- / -	- / -	- / -	- / -	- / -	4 / 23.867	
1.1.3) TOTIM - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	3 / 27.525	1 / 9.359	4 / 38.184	5 / 48.685	- / -	13 / 123.753	
1.1.4) TOTIM CCM - Organic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 9.736	- / -	1 / 9.736	
1.1.5) TOTIM ISIS CCM - Organic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 3.660	- / -	1 / 3.660	
1.1.6) TOTIM Capability Enhancement - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 2.670	Continuing	Continuing	
Subtotal: Recurring	- / 0.000	- / -	- / 5.879	- / 17.988	- / -	- / 17.988	- / 27.525	- / 9.359	- / 38.184	- / 64.751	Continuing	Continuing	
Subtotal: PL025 Low Profile Imaging Mast	3 / 0.000	- / -	1 / 5.879	3 / 17.988	- / -	3 / 17.988	3 / 27.525	1 / 9.359	4 / 38.184	13 / 64.751	Continuing	Continuing	
Subtotal: Procurement, All Modification Items	- / 0.000	- / -	- / 5.879	- / 17.988	- / -	- / 17.988	- / 27.525	- / 9.359	- / 38.184	- / 64.751	Continuing	Continuing	
Installation													
Modification Item 1 of 1: PL025 Low Profile Imaging Mast	- / 0.000	- / 0.000	- / 0.115	- / 0.059	- / 0.000	- / 0.059	- / 0.000	- / 0.000	- / 0.593	- / 0.198	- / 2.138	- / 3.103	
Subtotal: Installation	- / 0.000	- / -	- / 0.115	- / 0.059	- / -	- / 0.059	- / -	- / -	- / 0.593	- / 0.198	- / 2.138	- / 3.103	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	5.994	18.047	0.000	18.047	27.525	9.359	38.777	70.828	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog										Modification Number / Title: 3 / PL025 Low Profile Imaging Mast											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: PL025 Low Profile Imaging Mast																															
Manufacturer Information																															
Manufacturer Name: L3 KEO															Manufacturer Location: Northhampton, MA																
Administrative Leadtime (in Months): 6															Production Leadtime (in Months): 24																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates						Apr 2018				Apr 2019																					
Delivery Dates						Apr 2020				Apr 2021																					
Manufacturer Name: TBD (Competitive Procurement)															Manufacturer Location: TBD (Competitive Procurement)																
Administrative Leadtime (in Months): 6															Production Leadtime (in Months): 24																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates														Mar 2020				Mar 2021				Mar 2022				Mar 2023					
Delivery Dates														Mar 2022				Mar 2023				Mar 2024				Mar 2025					
Installation Information																															
Method of Implementation: AIT:: Installation Name: LPPM																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		- / -		- / -		2 / 0.115		1 / 0.059		0 / 0.000		1 / 0.059		- / -		- / -		- / -		- / -		0 / 0.000		3 / 0.174							
FY 2017		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		- / -		- / -		2 / 0.115		1 / 0.059		0 / 0.000		1 / 0.059		- / -		- / -		- / -		- / -		0 / 0.000		3 / 0.174							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Out	-	-	-	-	-	-	-	2	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog										Modification Number / Title: 3 / PL025 Low Profile Imaging Mast																
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: PL025 Low Profile Imaging Mast																															
Installation Information																															
Method of Implementation: AIT:: Installation Name: TOTIM																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 0.593	- / -	0 / 0.000	3 / 0.593																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.198	0 / 0.000	1 / 0.198																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 0.808	4 / 0.808																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 1.030	5 / 1.030																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 0.593	1 / 0.198	9 / 1.838	13 / 2.629																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	-	-	-	9	13
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	1	-	-	-	9	13
Method of Implementation: [none specified]:: Installation Name: TOTIM Capability Enhancement																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 0.300	6 / 0.300																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		

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Exhibit P-3a, Individual Modification: PB 2019 Navy											Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9											P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog											Modification Number / Title: 3 / PL025 Low Profile Imaging Mast										
ID Code (A=Service Ready, B=Not Service Ready) :											MDAP/MAIS Code:																					
Modification Item 1 of 1: PL025 Low Profile Imaging Mast																																
Installation Information																																
Method of Implementation: [none specified]:: Installation Name: TOTIM Capability Enhancement																																
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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>																		
Total		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 0.300	6 / 0.300																			
Installation Schedule																																
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot	
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	6	
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	6	
Method of Implementation (Organic): LPPM SPARE																						Installation Quantity: 4										
Method of Implementation (Organic): TOTIM CCM - Not Installed																						Installation Quantity: 1										
Method of Implementation (Organic): TOTIM ISIS CCM - Not Installed																						Installation Quantity: 1										
Footnotes:																																
⁽⁴⁾ Installations are funded by TYCOMs as necessary to meet operational requirements and are mission specific.																																

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog	Modification Number / Title: 4 / ML007 ICADF

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	0.000	1.245	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.245
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	0.000	1.245	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.245
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	0.000	1.245	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.245
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Provides advanced low-band COMINT Direction Finding (DF) capability compatible with CLASSIC TROLL and AN/BLQ-10 SSN EW system. Replaces obsolete AN/BRD-7 below decks equipment with modern, open architecture system compliant with Maritime Cryptologic Architecture.

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog						Modification Number / Title: 4 / ML007 ICADF			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: ICADF				Modification Type: SHIPALT (ES SYSTEM COMMS DF)				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: ML007 ICADF													
B Kits													
Recurring													
1.1.1) NIOC TRANSFER EQUIPMENT - NonOrganic	14 / 0.000	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	15 / 0.000	
Subtotal: Recurring	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	
Subtotal: ML007 ICADF	14 / 0.000	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	15 / 0.000	
Subtotal: Procurement, All Modification Items	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	
Installation													
Modification Item 1 of 1: ML007 ICADF	- / 0.000	- / 1.245	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 1.245	
Subtotal: Installation	- / 0.000	- / 1.245	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 1.245	
Total													
Total Cost (Procurement + Support + Installation)	0.000	1.245	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.245	

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Exhibit P-3a, Individual Modification: PB 2019 Navy											Date: February 2018																				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog										Modification Number / Title: 4 / ML007 ICADF											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: ML007 ICADF																															
Manufacturer Information																															
Manufacturer Name: Lockheed Martin														Manufacturer Location: Syracuse, NY																	
Administrative Leadtime (in Months): 6														Production Leadtime (in Months): 20																	
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates																															
Delivery Dates																															
Installation Information																															
Method of Implementation: AIT (ES SYSTEM COMMS DF):: Installation Name: NIOC TRANSFER EQUIPMENT																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																	
Prior Years		14 / 0.000		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		14 / -							
FY 2017		- / -		1 / 1.245		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		1 / 1.245							
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		14 / 0.000		1 / 1.245		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		15 / 1.245							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	14	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15
Out	14	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog	Modification Number / Title: 5 / ML008 ICADF MMM ANTENNA

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	0.000	1.159	0.000	8.852	0.000	8.852	0.000	2.506	0.000	0.000	0.000	12.517
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	0.000	1.159	0.000	8.852	0.000	8.852	0.000	2.506	0.000	0.000	0.000	12.517
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	0.000	1.159	0.000	8.852	0.000	8.852	0.000	2.506	0.000	0.000	0.000	12.517
(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:

Synchronizes improved low-band direction finding SIGINT sensor with coordinated N77/CNSG CLASSIC TROLL procurement. Replaces obsolete AN/BRD-7 antenna equipment and Improved ESM Mast (IEM) with modern, open-architecture system compliant with Maritime Cryptologic Architecture.

FY19 funding procures two (2) MMM antenna improvement subsystems for VIRGINIA modernizations to increase reliability and reduce operational and maintenance cost.

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Exhibit P-3a, Individual Modification: PB 2019 Navy									Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog					Modification Number / Title: 5 / ML008 ICADF MMM ANTENNA				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: MULTI FUNCTION MODULAR MAST				Modification Type: SHIPALT				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> ML008 ICADF MMM ANTENNA													
B Kits													
Recurring													
1.1.1) Multi Functional Modular Mast - NonOrganic	18 / 0.000	- / -	- / -	2 / 8.852	- / -	2 / 8.852	- / -	- / -	- / -	- / -	- / -	20 / 8.852	
1.1.2) Multi Functional Modular Mast - Organic - Organic	1 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.000	
<i>Subtotal: Recurring</i>	- / 0.000	- / -	- / -	- / 8.852	- / -	- / 8.852	- / -	- / -	- / -	- / -	- / 0.000	- / 8.852	
<i>Subtotal: ML008 ICADF MMM ANTENNA</i>	19 / 0.000	- / -	- / -	2 / 8.852	- / -	2 / 8.852	- / -	- / -	- / -	- / -	- / -	21 / 8.852	
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.000	- / -	- / -	- / 8.852	- / -	- / 8.852	- / -	- / -	- / -	- / -	- / 0.000	- / 8.852	
Installation													
<i>Modification Item 1 of 1:</i> ML008 ICADF MMM ANTENNA	- / 0.000	- / 1.159	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 2.506	- / 0.000	- / 0.000	- / 0.000	- / 3.665	
<i>Subtotal: Installation</i>	- / 0.000	- / 1.159	- / -	- / -	- / -	- / -	- / -	- / 2.506	- / -	- / -	- / 0.000	- / 3.665	
Total													
Total Cost (Procurement + Support + Installation)	0.000	1.159	0.000	8.852	0.000	8.852	0.000	2.506	0.000	0.000	0.000	12.517	

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Exhibit P-3a, Individual Modification: PB 2019 Navy											Date: February 2018																				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog										Modification Number / Title: 5 / ML008 ICADF MMM ANTENNA											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: ML008 ICADF MMM ANTENNA																															
Manufacturer Information																															
Manufacturer Name: LOCKHEED MARTIN															Manufacturer Location: SYRACUSE, NY																
Administrative Leadtime (in Months): 6															Production Leadtime (in Months): 20																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates										Mar 2019																					
Delivery Dates										Nov 2020																					
Installation Information																															
Method of Implementation: ALT:: Installation Name: Multi Functional Modular Mast																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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		17 / 0.000		1 / 1.159		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		18 / 1.159							
FY 2017		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		2 / 2.506		- / -		- / -		0 / 0.000		2 / 2.506							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		17 / 0.000		1 / 1.159		- / -		- / -		- / -		- / -		- / -		2 / 2.506		- / -		- / -		0 / 0.000		20 / 3.665							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	17	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	20
Out	17	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	20
Method of Implementation (Organic): Multi Functional Modular Mast - Organic - Not Installed																															
																				Installation Quantity: 1											

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog						Modification Number / Title: 6 / ML010 TECHNICAL INSERTION (SWFTS)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	0.000	19.230	23.730	28.895	0.000	28.895	65.756	87.528	80.526	100.043	Continuing	Continuing
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	0.000	19.230	23.730	28.895	0.000	28.895	65.756	87.528	80.526	100.043	Continuing	Continuing
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	0.000	19.230	23.730	28.895	0.000	28.895	65.756	87.528	80.526	100.043	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: TI Processor upgrade provides additional computing capability over previous TI baselines and replaces out of production systems for installation on LOS ANGELES, SSGN, SEAWOLF, and VIRGINIA Class submarines. Provides updates to the AN/BLQ-10 (V) configuration baseline which incorporates current Commercial off the Shelf (COTS) processing technology and software to account for obsolescence avoidance, and Reliability, Maintainability and Availability (RMA) and associated Integrated Logistics Support (ILS) and technical data. Hardware builds include supporting platform level Submarine Warfare Federated Tactical Systems (SWFTS) interfaces. Capability and Technical Insertion for AN/BLQ-10(V) provide spiral improvements to the baseline system which are designed to counter against new and evolving threat emitters. This effort is the transition of the EW AN/BLQ-10 TI modernization process to synchronize with SWFTS TI/APB process and model. The cost of digital upgrades for modernizations captured in ML020 is combined into the ML010 line starting in FY20. In FY21, all funding for digital upgrades in ML020 for future TIs is combined with ML010 following the completion of TI-18 upgrades. The approximately \$6M increase in ML010 NRE efforts in FY19 includes initial award of the next AN/BLQ-10 contract specific updates to support TI-20 system development and integration to EW Server, Threat libraries, Radiant Valkyrie Lite capabilities and other government efforts to improve and integrate with TI-20. These lines are being combined for the TI-20 procurement as they are both intended to buy a single AN/BLQ-10(V) upgrade. The TI-20 design, development, and integration contract is expected to award in FY19.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy									Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog					Modification Number / Title: 6 / ML010 TECHNICAL INSERTION (SWFTS)				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: TECHNICAL INSERTION				Modification Type: SHIPALT				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: ML010 TECHNICAL INSERTION (SWFTS)													
B Kits													
Recurring													
1.1.1) TI-18 688I Class - NonOrganic ⁽⁵⁾	27 / 0.000	8 / 13.781	10 / 17.736	6 / 11.034	- / -	6 / 11.034	5 / 9.380	- / -	- / -	- / -	- / -	56 / 51.931	
1.1.2) TI-18 SSGN CLASS - NonOrganic	- / -	- / -	- / -	2 / 4.780	- / -	2 / 4.780	2 / 4.874	- / -	- / -	- / -	- / -	4 / 9.654	
1.1.3) TI-20 VA CLASS - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	3 / 40.707	5 / 69.200	4 / 56.468	2 / 28.798	- / -	14 / 195.173	
1.1.4) TI-22 688/21 Class - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 6.232	8 / 50.856	Continuing	Continuing	
Subtotal: Recurring	- / 0.000	- / 13.781	- / 17.736	- / 15.814	- / -	- / 15.814	- / 54.961	- / 69.200	- / 62.700	- / 79.654	Continuing	Continuing	
Subtotal: ML010 TECHNICAL INSERTION (SWFTS)	27 / 0.000	8 / 13.781	10 / 17.736	8 / 15.814	- / -	8 / 15.814	10 / 54.961	5 / 69.200	5 / 62.700	10 / 79.654	Continuing	Continuing	
Subtotal: Procurement, All Modification Items	- / 0.000	- / 13.781	- / 17.736	- / 15.814	- / -	- / 15.814	- / 54.961	- / 69.200	- / 62.700	- / 79.654	Continuing	Continuing	
Support (All Modification Items)													
2.1) TI/APB NRE ⁽⁶⁾	- / -	- / 2.405	- / 2.449	- / 8.566	- / -	- / 8.566	- / 7.105	- / 8.877	- / 7.358	- / 9.709	- / -	- / 46.469	
Subtotal: Support	- / 0.000	- / 2.405	- / 2.449	- / 8.566	- / -	- / 8.566	- / 7.105	- / 8.877	- / 7.358	- / 9.709	- / 0.000	- / 46.469	
Installation													
Modification Item 1 of 1: ML010 TECHNICAL INSERTION (SWFTS)	- / 0.000	- / 3.044	- / 3.545	- / 4.515	- / 0.000	- / 4.515	- / 3.690	- / 9.451	- / 10.468	- / 10.680	- / 21.787	- / 67.180	
Subtotal: Installation	- / 0.000	- / 3.044	- / 3.545	- / 4.515	- / -	- / 4.515	- / 3.690	- / 9.451	- / 10.468	- / 10.680	- / 21.787	- / 67.180	
Total													
Total Cost (Procurement + Support + Installation)	0.000	19.230	23.730	28.895	0.000	28.895	65.756	87.528	80.526	100.043	Continuing	Continuing	

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Exhibit P-3a, Individual Modification: PB 2019 Navy												Date: February 2018																			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog										Modification Number / Title: 6 / ML010 TECHNICAL INSERTION (SWFTS)											
ID Code (A=Service Ready, B=Not Service Ready) :														MDAP/MAIS Code:																	
Modification Item 1 of 1: ML010 TECHNICAL INSERTION (SWFTS)																															
Manufacturer Information																															
Manufacturer Name: Lockheed Martin														Manufacturer Location: Syracuse, NY																	
Administrative Leadtime (in Months): 6														Production Leadtime (in Months): 12																	
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates		Mar 2017				Mar 2018				Mar 2019				Mar 2020				Mar 2021				Mar 2022				Mar 2023					
Delivery Dates		Mar 2018				Mar 2019				Mar 2020				Mar 2021				Mar 2022				Mar 2023				Mar 2024					
Installation Information																															
Method of Implementation: ALT:: Installation Name: TI-18 688I Class																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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		20 / 0.000		7 / 3.044		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		27 / 3.044							
FY 2017		- / -		- / -		8 / 3.545		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		8 / 3.545							
FY 2018		- / -		- / -		- / -		10 / 4.515		0 / 0.000		10 / 4.515		- / -		- / -		- / -		- / -		0 / 0.000		10 / 4.515							
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		6 / 2.768		- / -		- / -		- / -		0 / 0.000		6 / 2.768							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		5 / 2.354		- / -		- / -		0 / 0.000		5 / 2.354							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		20 / 0.000		7 / 3.044		8 / 3.545		10 / 4.515		0 / 0.000		10 / 4.515		6 / 2.768		5 / 2.354		- / -		- / -		0 / 0.000		56 / 16.226							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	20	-	4	2	1	1	3	2	2	-	4	3	3	-	2	2	2	-	2	2	1	-	-	-	-	-	-	-	-	-	56
Out	20	-	4	2	1	-	3	3	2	-	4	3	3	-	2	2	2	-	2	2	1	-	-	-	-	-	-	-	-	-	56

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog										Modification Number / Title: 6 / ML010 TECHNICAL INSERTION (SWFTS)																	
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:																						
Modification Item 1 of 1: ML010 TECHNICAL INSERTION (SWFTS)																																
Installation Information																																
Method of Implementation: AIT:: Installation Name: TI-18 SSGN CLASS																																
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.922	- / -	- / -	- / -	0 / 0.000	2 / 0.922																			
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.941	- / -	- / -	0 / 0.000	2 / 0.941																			
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
Total		- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.922	2 / 0.941	- / -	- / -	0 / 0.000	4 / 1.863																			
Installation Schedule																																
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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
Method of Implementation: AIT:: Installation Name: TI-20 VA CLASS																																
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 6.156	- / -	- / -	0 / 0.000	3 / 6.156																			
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 10.468	- / -	0 / 0.000	5 / 10.468																			
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 8.544	0 / 0.000	4 / 8.544																			
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 4.357	2 / 4.357																			

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog	Modification Number / Title: 6 / ML010 TECHNICAL INSERTION (SWFTS)

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

Modification Item 1 of 1: ML010 TECHNICAL INSERTION (SWFTS)

Installation Information

Method of Implementation: AIT:: Installation Name: TI-20 VA CLASS

Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 6.156	5 / 10.468	4 / 8.544	2 / 4.357	14 / 29.525

Installation Schedule

	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	2	2	1	-	2	1	1	2	14	
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	2	2	1	-	2	1	1	2	14	

Method of Implementation: AIT:: Installation Name: TI-22 688/21 Class

Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 2.136	0 / 0.000	1 / 2.136
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	8 / 17.430	8 / 17.430
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 2.136	8 / 17.430	9 / 19.566

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018																													
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog	Modification Number / Title: 6 / ML010 TECHNICAL INSERTION (SWFTS)																													
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:																													
Modification Item 1 of 1: ML010 TECHNICAL INSERTION (SWFTS)																															
Installation Information																															
Method of Implementation: AIT:: Installation Name: TI-22 688/21 Class																															
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	-	-	8	9
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	8	9

Footnotes:

- ⁽⁵⁾ Unit costs are hull dependent and build on previous baselines to add both existing and future capabilities supported by higher costs. As a result, there is an increase to the FY19 unit cost. The installation costs for 2 Kits procured as part of the PB17 Request for Additional Appropriations (RAA) is being maintained in the "To Complete" column of the Installation Information Table.
- ⁽⁶⁾ FY19 increases the Non-Recurring Engineering to support the greatly increased design, new technology integration, and software compatibility required to support future spectrum digitization processing. Growth in NRE in FY19 supports the initial award of the next AN/BLQ-10(V) contract which advances Next Generation Architecture towards a fully digital system through spiral improvements via the TI/APB process by updating existing capabilities to EW Server, Threat libraries, Radiant Valkyrie Lite capabilities and other government efforts that are required to be updated and integrated into the TI-20 system.

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog					Modification Number / Title: 7 / ML015 AN/BLQ-10(V) SSN ES SYSTEM		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	1.380	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.380
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	1.380	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.380
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	1.380	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.380
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Provides fully integrated, covert, forward area radar signal intercept and ID capability for installation on LOS ANGELES, SEAWOLF, VIRGINIA and SSGN Class Submarines.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog						Modification Number / Title: 7 / ML015 AN/BLQ-10(V) SSN ES SYSTEM			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: AN/BLQ-10(V)2/3/4				Modification Type: SHIPALT				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: ML015 AN/BLQ-10(V) SSN ES SYSTEM													
B Kits													
Recurring													
1.1.1) AN/BLQ-10(V) SSN ES SYSTEM - NonOrganic (7)	44 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	44 / 0.000	
<i>Subtotal: Recurring</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	
<i>Subtotal: ML015 AN/BLQ-10(V) SSN ES SYSTEM</i>	44 / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	44 / 0.000	
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	
Installation													
Modification Item 1 of 1: ML015 AN/BLQ-10(V) SSN ES SYSTEM	- / 0.000	- / 1.380	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 1.380	
<i>Subtotal: Installation</i>	- / 0.000	- / 1.380	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 1.380	
Total													
Total Cost (Procurement + Support + Installation)	0.000	1.380	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.380	

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog	Modification Number / Title: 7 / ML015 AN/BLQ-10(V) SSN ES SYSTEM

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

Modification Item 1 of 1: ML015 AN/BLQ-10(V) SSN ES SYSTEM

Manufacturer Information

Manufacturer Name: Lockheed Martin	Manufacturer Location: Syracuse, NY
Administrative Leadtime (in Months): 6	Production Leadtime (in Months): 16

Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Contract Dates							
Delivery Dates							

Installation Information

Method of Implementation: AIT:: Installation Name: AN/BLQ-10(V) SSN ES SYSTEM

Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	43 / 0.000	1 / 1.380	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	44 / 1.380
FY 2017	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	43 / 0.000	1 / 1.380	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	44 / 1.380

Installation Schedule

	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	43	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44
Out	43	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44

Footnotes:
⁽⁷⁾ Installation of the last BLQ-10A system was originally planned for FY12 on SSN765 but ship modernization availability was postponed until FY17.

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog					Modification Number / Title: 8 / ML017 ANBLQ-10(V) FIELD CHANGE KITS		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	7.404	17.663	23.092	0.000	23.092	25.008	23.541	25.427	25.935	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	7.404	17.663	23.092	0.000	23.092	25.008	23.541	25.427	25.935	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	7.404	17.663	23.092	0.000	23.092	25.008	23.541	25.427	25.935	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Procures AN/BLQ-10(V) and ICADF subsystem Product Improvement Field Change Kits (FCK). One (1) set of AN/BLQ-10 FCKs is procured in each fiscal tear that includes variable quantities and types, procured from a variety of vendors. Funding has been increased beginning in FY19 for EW Wholeness issues to address obsolescence and parts availability issues through FCKs. Procures Submarine Launched Decoy (SLD) Buoy to reduce risk of counter-detection for operating submarines. The current funding profile for FY19 and FY20 allow the Navy to reach the inventory objective of 40 controllers and 400 buoys by FY22. FY23 continues procurement at a rate of 5 replacement controllers and 100 expendable buoys. Procures MMM Payload Module antennas to support submarine Fleet required improved Unmanned Aerial System (UAS) communications/Tactical Data Link (TDL)/Electronic Warfare (EW) capability to meet emerging threats and provide new capabilities required by the Fleet.												

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog						Modification Number / Title: 8 / ML017 ANBLQ-10(V) FIELD CHANGE KITS			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: AN/BLQ-10(V)				Modification Type: ORDALT				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> ML017 ANBLQ-10(V) FIELD CHANGE KITS													
B Kits													
Recurring													
1.1.1) AN/BLQ-10(V) FCKs - NonOrganic ⁽⁸⁾	5 / 0.000	1 / 6.781	1 / 16.879	1 / 10.851	- / -	1 / 10.851	1 / 11.068	1 / 9.885	1 / 11.516	1 / 11.746	Continuing	Continuing	
1.1.2) Submarine Launch Decoy (SLD) - NonOrganic ⁽⁹⁾	- / -	- / -	- / -	18 / 3.333	- / -	18 / 3.333	9 / 2.322	5 / 2.019	5 / 2.041	5 / 2.082	Continuing	Continuing	
1.1.3) MMM Payloads - NonOrganic	- / -	- / -	- / -	6 / 7.344	- / -	6 / 7.344	6 / 6.771	6 / 6.908	6 / 7.044	6 / 7.188	Continuing	Continuing	
1.1.4) Tactical Data Link (TDL) for Submarines - NonOrganic ⁽¹⁰⁾	- / -	- / -	- / -	- / -	- / -	- / -	2 / 3.000	2 / 2.910	2 / 2.968	2 / 3.028	Continuing	Continuing	
<i>Subtotal: Recurring</i>	- / 0.000	- / 6.781	- / 16.879	- / 21.528	- / -	- / 21.528	- / 23.161	- / 21.722	- / 23.569	- / 24.044	Continuing	Continuing	
<i>Subtotal: ML017 ANBLQ-10(V) FIELD CHANGE KITS</i>	5 / 0.000	1 / 6.781	1 / 16.879	25 / 21.528	- / -	25 / 21.528	18 / 23.161	14 / 21.722	14 / 23.569	14 / 24.044	Continuing	Continuing	
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.000	- / 6.781	- / 16.879	- / 21.528	- / -	- / 21.528	- / 23.161	- / 21.722	- / 23.569	- / 24.044	Continuing	Continuing	
Installation													
<i>Modification Item 1 of 1:</i> ML017 ANBLQ-10(V) FIELD CHANGE KITS	- / 0.000	- / 0.623	- / 0.784	- / 1.564	- / 0.000	- / 1.564	- / 1.847	- / 1.819	- / 1.858	- / 1.891	- / 0.934	- / 11.320	
<i>Subtotal: Installation</i>	- / 0.000	- / 0.623	- / 0.784	- / 1.564	- / -	- / 1.564	- / 1.847	- / 1.819	- / 1.858	- / 1.891	- / 0.934	- / 11.320	
Total													
Total Cost (Procurement + Support + Installation)	0.000	7.404	17.663	23.092	0.000	23.092	25.008	23.541	25.427	25.935	Continuing	Continuing	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog										Modification Number / Title: 8 / ML017 ANBLQ-10(V) FIELD CHANGE KITS											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: ML017 ANBLQ-10(V) FIELD CHANGE KITS																															
Manufacturer Information																															
Manufacturer Name: Lockheed Martin															Manufacturer Location: Syracuse, NY																
Administrative Leadtime (in Months): 6															Production Leadtime (in Months): 6																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates		Dec 2016				Dec 2017				Dec 2018				Dec 2019				Dec 2020				Dec 2021				Dec 2022					
Delivery Dates		Jun 2017				Jun 2018				Jun 2019				Jun 2020				Jun 2021				Jun 2022				Jun 2023					
Installation Information																															
Method of Implementation: AIT:: Installation Name: AN/BLQ-10(V) FCKs																															
Installation Cost		Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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		5 / 0.000		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		5 / -							
FY 2017		- / -		1 / 0.623		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		1 / 0.623							
FY 2018		- / -		- / -		1 / 0.784		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		1 / 0.784							
FY 2019		- / -		- / -		- / -		1 / 0.646		0 / 0.000		1 / 0.646		- / -		- / -		- / -		- / -		0 / 0.000		1 / 0.646							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		1 / 0.659		- / -		- / -		- / -		0 / 0.000		1 / 0.659							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 0.672		- / -		- / -		0 / 0.000		1 / 0.672							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 0.685		- / -		0 / 0.000		1 / 0.685							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 0.699		0 / 0.000		1 / 0.699							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		5 / 0.000		1 / 0.623		1 / 0.784		1 / 0.646		0 / 0.000		1 / 0.646		1 / 0.659		1 / 0.672		1 / 0.685		1 / 0.699		0 / 0.000		12 / 4.768							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	5	-	-	1	-	-	-	-	1	-	-	-	-	1	-	-	-	-	1	-	-	-	-	1	-	-	-	-	1	-	
Out	5	-	-	1	-	-	-	-	1	-	-	-	-	1	-	-	-	-	1	-	-	-	-	1	-	-	-	-	1	-	

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog	Modification Number / Title: 8 / ML017 ANBLQ-10(V) FIELD CHANGE KITS

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

Modification Item 1 of 1: ML017 ANBLQ-10(V) FIELD CHANGE KITS

Installation Information

Method of Implementation: AIT:: Installation Name: Submarine Launch Decoy (SLD)

Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	18 / 0.918	0 / 0.000	18 / 0.918	- / -	- / -	- / -	- / -	0 / 0.000	18 / 0.918
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	9 / 0.468	- / -	- / -	- / -	0 / 0.000	9 / 0.468
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.265	- / -	- / -	0 / 0.000	5 / 0.265
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.271	- / -	0 / 0.000	5 / 0.271
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.276	0 / 0.000	5 / 0.276
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	- / -	18 / 0.918	0 / 0.000	18 / 0.918	9 / 0.468	5 / 0.265	5 / 0.271	5 / 0.276	0 / 0.000	42 / 2.198

Installation Schedule

	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	13	-	-	5	4	-	-	5	-	-	-	5	-	-	-	5	-	-	42
Out	-	-	-	-	-	-	-	-	-	-	-	5	13	-	-	5	4	-	-	5	-	-	-	5	-	-	-	5	-	-	42

Method of Implementation: AIT:: Installation Name: MMM Payloads

Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	6 / 0.720	- / -	- / -	- / -	0 / 0.000	6 / 0.720
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 0.732	- / -	- / -	0 / 0.000	6 / 0.732
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 0.750	- / -	0 / 0.000	6 / 0.750
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 0.762	0 / 0.000	6 / 0.762
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 0.777	6 / 0.777

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog	Modification Number / Title: 8 / ML017 ANBLQ-10(V) FIELD CHANGE KITS

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

Modification Item 1 of 1: ML017 ANBLQ-10(V) FIELD CHANGE KITS

Installation Information

Method of Implementation: AIT:: Installation Name: MMM Payloads

Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	- / -	- / -	- / -	- / -	6 / 0.720	6 / 0.732	6 / 0.750	6 / 0.762	6 / 0.777	30 / 3.741

Installation Schedule

	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	-	2	2	2	-	2	2	2	-	2	2	2	6	30
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	-	2	2	2	-	2	2	2	-	2	2	2	6	30

Method of Implementation: AIT:: Installation Name: Tactical Data Link (TDL) for Submarines

Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.150	- / -	- / -	0 / 0.000	2 / 0.150
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.152	- / -	0 / 0.000	2 / 0.152
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.154	0 / 0.000	2 / 0.154
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.157	2 / 0.157
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 0.150	2 / 0.152	2 / 0.154	2 / 0.157	8 / 0.613

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018																													
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog	Modification Number / Title: 8 / ML017 ANBLQ-10(V) FIELD CHANGE KITS																													
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:																													
Modification Item 1 of 1: ML017 ANBLQ-10(V) FIELD CHANGE KITS																															
Installation Information																															
Method of Implementation: AIT:: Installation Name: Tactical Data Link (TDL) for Submarines																															
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	-	2	8
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	1	1	-	-	1	1	-	2	8

Footnotes:

- ⁽⁸⁾ AN/BLQ-10 FCKs are procured in variable quantities and types, and are bought from a variety of vendors each fiscal year. FY19 addresses need for EW Wholeness and adds funds for EW lifecycle sustainment support and increases operational availability.
- ⁽⁹⁾ Quantity reflects number of controllers with corresponding installs. Number of buoys varies from year to year to meet inventory objective of 400 by FY22.
- ⁽¹⁰⁾ FY20 begins funding TDL communications, a program designed to increase submarine capability for joint operations.

UNCLASSIFIED

[illegible]

Description:

Procures EW Modernization upgrade of PATRIOT Phase B RADAR range finder for incorporation into the VIRGINIA CLASS Photonics Mast.

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog						Modification Number / Title: 9 / ML018 VA CLASS ES MODERNIZATION PATRIOT			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: VA PATRIOT				Modification Type: SHIPALT				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: ML018 VA CLASS ES MODERNIZATION PATRIOT													
B Kits													
Recurring													
1.1.1) VA PATRIOT - NonOrganic	14 / 0.000	2 / 2.379	2 / 2.424	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	18 / 4.803	
<i>Subtotal: Recurring</i>	- / 0.000	- / 2.379	- / 2.424	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 4.803	
<i>Subtotal: ML018 VA CLASS ES MODERNIZATION PATRIOT</i>	14 / 0.000	2 / 2.379	2 / 2.424	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	18 / 4.803	
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.000	- / 2.379	- / 2.424	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 4.803	
Installation													
Modification Item 1 of 1: ML018 VA CLASS ES MODERNIZATION PATRIOT	- / 0.000	- / 0.347	- / 0.531	- / 0.360	- / 0.000	- / 0.360	- / 0.367	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 1.605	
<i>Subtotal: Installation</i>	- / 0.000	- / 0.347	- / 0.531	- / 0.360	- / -	- / 0.360	- / 0.367	- / -	- / -	- / -	- / 0.000	- / 1.605	
Total													
Total Cost (Procurement + Support + Installation)	0.000	2.726	2.955	0.360	0.000	0.360	0.367	0.000	0.000	0.000	0.000	6.408	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog										Modification Number / Title: 9 / ML018 VA CLASS ES MODERNIZATION PATRIOT											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: ML018 VA CLASS ES MODERNIZATION PATRIOT																															
Manufacturer Information																															
Manufacturer Name: VARIOUS															Manufacturer Location: VARIOUS																
Administrative Leadtime (in Months): 6															Production Leadtime (in Months): 19																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates		Mar 2017				Mar 2018																									
Delivery Dates		Oct 2018				Oct 2019																									
Installation Information																															
Method of Implementation: AIT:: Installation Name: VA PATRIOT																															
Installation Cost		Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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		9 / 0.000		2 / 0.347		3 / 0.531		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		14 / 0.878							
FY 2017		- / -		- / -		- / -		2 / 0.360		0 / 0.000		2 / 0.360		- / -		- / -		- / -		- / -		0 / 0.000		2 / 0.360							
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		2 / 0.367		- / -		- / -		- / -		0 / 0.000		2 / 0.367							
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		9 / 0.000		2 / 0.347		3 / 0.531		2 / 0.360		0 / 0.000		2 / 0.360		2 / 0.367		- / -		- / -		- / -		0 / 0.000		18 / 1.605							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	2	-	-	-	3	-	-	-	2	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18
Out	9	2	-	-	-	3	-	-	-	2	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog	Modification Number / Title: 10 / ML020 AN/BLQ-10(V)

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	0.000	35.790	35.031	31.844	0.000	31.844	20.762	1.722	0.000	0.000	0.000	125.149
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	0.000	35.790	35.031	31.844	0.000	31.844	20.762	1.722	0.000	0.000	0.000	125.149
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	0.000	35.790	35.031	31.844	0.000	31.844	20.762	1.722	0.000	0.000	0.000	125.149
(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:

Procurement of AN/BLQ-10(V) NRE and modernization kits for EW Modernization upgrades for all submarine platforms. The rapid proliferation of complex radar, communications and navigation equipment available to potential adversaries creates a need for sustained and significant improvements to submarine systems in order to maintain tactical ship safety and operational effectiveness. Commander Submarine Forces and the Submarine Tactical Requirements Group (STRG) raised EW primary mission area in FY12 to be the number one modernization requirement.

The cost of digital upgrades for modernizations captured in ML020 is combined into the ML010 line starting in FY20. In FY21, all funding for digital upgrades in ML020 for future TIs is combined with ML010.

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Exhibit P-3a, Individual Modification: PB 2019 Navy								Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog					Modification Number / Title: 10 / ML020 AN/BLQ-10(V)				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: AN/BLQ-10			Modification Type: SHIPALT					Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: ML020 AN/BLQ-10(V)													
B Kits													
Recurring													
1.1.1) AN/BLQ-10(V) Backfit Kits - NonOrganic ⁽¹¹⁾		6 / 0.000	8 / 20.299	10 / 25.862	8 / 21.104	- / -	8 / 21.104	7 / 18.837	- / -	- / -	- / -	39 / 86.102	
Subtotal: Recurring		- / 0.000	- / 20.299	- / 25.862	- / 21.104	- / -	- / 21.104	- / 18.837	- / -	- / -	- / -	- / 86.102	
Subtotal: ML020 AN/BLQ-10(V)		6 / 0.000	8 / 20.299	10 / 25.862	8 / 21.104	- / -	8 / 21.104	7 / 18.837	- / -	- / -	- / -	39 / 86.102	
Subtotal: Procurement, All Modification Items		- / 0.000	- / 20.299	- / 25.862	- / 21.104	- / -	- / 21.104	- / 18.837	- / -	- / -	- / -	- / 86.102	
Support (All Modification Items)													
2.1) NRE		- / -	- / 14.134	- / 7.313	- / 8.376	- / -	- / 8.376	- / -	- / -	- / -	- / -	- / 29.823	
Subtotal: Support		- / 0.000	- / 14.134	- / 7.313	- / 8.376	- / -	- / 8.376	- / -	- / -	- / -	- / -	- / 29.823	
Installation													
Modification Item 1 of 1: ML020 AN/BLQ-10(V)		- / 0.000	- / 1.357	- / 1.856	- / 2.364	- / 0.000	- / 2.364	- / 1.925	- / 1.722	- / 0.000	- / 0.000	- / 9.224	
Subtotal: Installation		- / 0.000	- / 1.357	- / 1.856	- / 2.364	- / -	- / 2.364	- / 1.925	- / 1.722	- / -	- / -	- / 9.224	
Total													
Total Cost (Procurement + Support + Installation)		0.000	35.790	35.031	31.844	0.000	31.844	20.762	1.722	0.000	0.000	125.149	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0840 / Sub Periscope, Imaging and Supt Equip Prog										Modification Number / Title: 10 / ML020 AN/BLQ-10(V)																
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:																					
Modification Item 1 of 1: ML020 AN/BLQ-10(V)																															
Manufacturer Information																															
Manufacturer Name: VARIOUS										Manufacturer Location: TBD																					
Administrative Leadtime (in Months): 6										Production Leadtime (in Months): 12																					
Dates	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023						
Contract Dates	Mar 2017				Mar 2018				Mar 2019				Mar 2020																		
Delivery Dates	Mar 2018				Mar 2019				Mar 2020				Mar 2021																		
Installation Information																															
Method of Implementation: AIT:: Installation Name: AN/BLQ-10(V) Backfit Kits																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total																		
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																		
Prior Years		- / -	6 / 1.357	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	6 / 1.357																		
FY 2017		- / -	- / -	8 / 1.856	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	8 / 1.856																		
FY 2018		- / -	- / -	- / -	10 / 2.364	0 / 0.000	10 / 2.364	- / -	- / -	- / -	- / -	0 / 0.000	10 / 2.364																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	8 / 1.925	- / -	- / -	- / -	0 / 0.000	8 / 1.925																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	7 / 1.722	- / -	- / -	0 / 0.000	7 / 1.722																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		- / -	6 / 1.357	8 / 1.856	10 / 2.364	0 / 0.000	10 / 2.364	8 / 1.925	7 / 1.722	- / -	- / -	0 / 0.000	39 / 9.224																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	1	3	2	2	-	4	3	3	-	3	3	2	-	3	3	1	-	-	-	-	-	-	-	-	-	39
Out	-	-	2	2	2	-	3	3	2	-	4	3	3	-	3	3	2	-	3	3	1	-	-	-	-	-	-	-	-	-	39
Footnotes:																															
⁽¹¹⁾ The installation costs for 2 Kits procured as part of the PB17 Request for Additional Appropriations (RAA) is being maintained in the "To Complete" column of the Installation Information Table.																															

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment							P-1 Line Item Number / Title: 0900 / DDG Mod					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: 0204228N				Other Related Program Elements: 0604567N, 0604307N				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	2,261.202	429.614	603.355	487.999	0.000	487.999	681.567	584.972	911.570	1,057.869	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	2,261.202	429.614	603.355	487.999	0.000	487.999	681.567	584.972	911.570	1,057.869	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	2,261.202	429.614	603.355	487.999	0.000	487.999	681.567	584.972	911.570	1,057.869	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>)	-	12.862	15.672	0.813	-	0.813	12.669	10.799	11.979	13.147	Continuing	Continuing
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: The FY 2019 funding request was reduced by \$2.732 million to reflect the Department of Navy's effort to support the Office of Management and Budget directed reforms for Efficiency and Effectiveness that include a lean, accountable, more efficient government. The DDG Modernization Program is required to upgrade the in-service Flight I, II, and IIA DDG-51 Class ships in order to keep them relevant and affordable components of the Navy's Sea Power 21 Plan. The DDG Modernization Program is composed of a series of improvements in both the Hull, Mechanical, and Electrical (HM&E) and Combat Systems (CS). The modernization installations are planned for each ship at approximately the midlife point for each hull. The quantity line represents the total DDG Modernization availabilities (HM&E and Combat Systems) started in each fiscal year. HM&E: 2-6-5-4-3-4-4 Combat System: 1-2-2-3-2-3-3. The HM&E modernization will be comprised of the technologies transitioned from SCN funded DDG 111/112 and those additional improvements required to support the expected service life of the DDG 51 Class. The upgrades will focus on technologies that reduce workload and Total Ownership Costs (TOC) for the remaining hull life of each ship. The centerpiece of the CS modernization is the Aegis Weapon System (AWS) upgrade. This upgrade will consist of the introduction of displays, computing equipment and the computer program required to implement Aegis Open Architecture (AOA) and replacement of the existing SPY-1D Signal Processor (SIGPRO) with the Multi-Mission Signal Processor. Selected warfighting improvements will also be installed in conjunction with the combat systems upgrade. This modernization program will provide a core modernization of the infrastructure "foundation" of each ship including the core engineering plan, core computing plan, and Combat Information Center (CIC). This modernization program will also provide an infrastructure foundation that will function as a landing zone for future warfighting capabilities. [P40A / DM002 - LAND BASED ENGINEERING SITES]: Funds will be used to upgrade shore facilities for HM&E alterations providing risk reduction testing and provide for Combat System and HM&E training products. [P40A / DM013 - CONJUNCTIVE ALTERATION DEFINITION AND INTEGRATION]: Procures Conjunctive Alteration Definition and Integration that includes equipment procurement, non-recurring and recurring engineering, equipment integration and Integrated Logistics Support (ILS) products for DDG 51 Class ships. [P40A / HELO HANGER DOOR (HHD)]: Helo Hanger Door (HHD)- FLTIIA ships have documented HHD reliability issues. This update installs several new reliability improvements that are planned for DDG13 AF.												

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018	
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment		P-1 Line Item Number / Title: 0900 / DDG Mod	
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: 0204228N		Other Related Program Elements: 0604567N, 0604307N
Line Item MDAP/MAIS Code: N/A			
[P40A / OFFICER OF THE DECK SCREEN (OOD)]: Officer Of The Deck Screen (OOD)- Replaces the IC/SM alarm panels in the 3 OOD stations and CSMC with Agimet Multi Function Color Repeaters for standardization of BF components and commonality with DDG 105AF design. [P40A / AWS VIDEO DISTRIBUTION SYSTEM & CIRCUIT 3 TV]: This Ship Change replaces obsolete and unsupported legacy topside surveillance camera CKT-3TV Systems on NON-AMOD DDGs(including sensors, pan/tilt, unit, controllers and other HW) with shock and environmentally qualified COTS Camera System. [P40A / DIGITAL VOLTAGE REGULATOR (DVR)]: Digital Voltage Regulator (DVR)- Replaces the obsolete legacy Excitation Control Panel(EXCOP) for each generator consistent with DDG 113AF. [P40A / DMCA1 - DDG-51 MODERNIZATION PROGRAM CONGRESSIONAL ADD]: Description: DDG Modernization Congressional Add Procures AN/SQQ-89 A(V)15 with Multi-Function Towed Array (MFTA) and other equipment for DDG Modernization Program that consist of hardware, software, system engineering, integrated logistics support, system test & evaluation, training, data, installation assistance teams, spare and repair parts, and program management for DDG 51 Class ships. [P40A / DMCA3 - COMMUNICATIONS UPGRADE FOR DDG MOD CONGRESSIONAL ADD]: Description: Communications Upgrade for DDG Modernization Congressional Add Procures communications upgrades for DDG Modernization Program that consist of hardware, software, system engineering, integrated logistics support, system test & evaluation, training, data, installation assistance teams, spare and repair parts, and program management for DDG 51 Class ships. [P40A / DMCA4 - SMART VALVE AUTOMATIC FIRE SUPPRESSION SYSTEM]: Description: Congressional Add for Smart Valve system. The Smart Valve is the enabling technology behind the Automatic Fire Suppression System (AFSS), which provides the sensing capability to detect ruptures in the fire main piping system that occur during a damage event; the ability to isolate damaged sections of the piping system; and the embedded "intelligence" to reconfigure the system to maintain firefighting capability where it is most needed without any operator intervention for DDG 51 Class ships. [P40A / DM6IN - INSTALLATION]: Funds are for installation of DDG Modernization equipment in support of the Fleet Modernization Program. [P40A / MRG Procurement]: The contractor will engineer, manufacture, test and deliver a fully operational DDG 51 Class Main Reduction Gear (MRG). The MRG combines the input of two LM2500 engines to convert the high speed, low torque output suitable to drive the propulsion shafting, and the related support systems and equipment. [P40A / SOLID STATE RADAR]: Backfit a new gallium nitride antenna array and a multi-mission signal processor (MMSP). Employs an open architecture design that easily facilitates integration with other systems and components leveraging technology from the US Missile Defense Agency's (MDA's) S-band Long Range Discrimination Radar (LRDR). [P40A / AEGIS MODERNIZATION TESTING (AMT)]: Provide on-site engineering and technical support of DDG Modernization availabilities. Provide engineering support to execute system and element testing requirements from AEGIS Light Off (ALO) to end of availability. Serve as the combat system engineering agent technical point of contact for combat system DDG Modernization matters. [P40A / COMBAT SYSTEM SHIP QUALIFICATION TRIALS (CSSQT)]: Combat Systems Ship Qualifications Trials consists of aircraft flight and re-fueling services, Air Warfare/Surface Warfare/Under Sea Warfare range services and support, scenario data recording and data analysis. [P3A / DM001 - DDG MODERNIZATION HME (GEDMS)]: Gigabit Ethernet Data Multiplexing System (GEDMS) replaces the obsolete copper machinery control LAN infrastructure with a new system based on the widely used Ethernet industry standard.			

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment		P-1 Line Item Number / Title: 0900 / DDG Mod
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: 0204228N	Other Related Program Elements: 0604567N, 0604307N
Line Item MDAP/MAIS Code: N/A		
[P3A - 2 / DM001 - DDG MODERNIZATION HME (MCS/DCS)]: Machinery Control System (MCS) replaces the obsolete control consoles while also delivering enhanced capability to the fleet through improved situational awareness and reconfigurable user stations. The new consoles use Commercial Off The Shelf (COTS)-based computers which connect via Versa Modular Eurocard (VME)-chassis technology. The VME architecture is expected to be supportable for the remaining service life of the ship and will enable computer upgrades within the chassis thereby mitigating future obsolescence concerns. [P3A - 3 / DM001 - DDG MODERNIZATION HME (DVSS)]: Digital Video Surveillance System (DVSS) is a network of video cameras which are integrated into the Machinery Control system. This system is primarily a watch-stander situational awareness tool which supplements the workload reduction benefits of the new MCS. [P3A - 4 / DM001 - DDG MODERNIZATION HME (WIRELESS COMMUNICATIONS)]: Shipwide Interior Wireless Communication System (SIWCS) - provides point-to-point coverage throughout the internal spaces of the ship as well as topside, topside-to-interior, line of sight ship-to-ship & line of sight ship-to-shore communications capabilities. [P3A - 5 / DM001 - DDG MODERNIZATION HME (IBNS)]: The Integrated Bridge & Navigation System (IBNS) replaces obsolete bridge consoles and introduces flexibility with how the pilot house is managed during navigation. The key benefit is the ability for operating with fewer watch-standers, reduced watch standard workloads, and improved safety of navigation. [P3A - 6 / DM003 - MK 160 MOD 15 GWS]: Procures MK 160 Mod 15 Gun Weapon System (GWS) that includes equipment procurement, recurring engineering, equipment integration and Integrated Logistics Support (ILS) products for DDG 51 Class ships. [P3A - 7 / DM004 - AWS UPGRADE]: Procures equipment for the AWS Upgrades that includes equipment procurement, recurring engineering, equipment integration and Integrated Logistics Support (ILS) products for DDG 51 Class ships. [P3A - 8 / DM005 - MULTI-MISSION SIGPRO]: Procures Multi-Mission SIGPRO combat systems that includes equipment procurement, recurring engineering, equipment integration and Integrated Logistics Support (ILS) products for DDG 51 Class ships. [P3A - 9 / DM006 - MULTI-MISSION SSA/CWI MICROWAVE TUBES]: Procures Multi-Mission Solid State Amplifier (SSA)/Continuous Wave Illumination (CWI) Microwave Tubes upgrades for DDG Modernization Program that includes equipment procurement, recurring engineering, equipment integration and Integrated Logistics Support (ILS) products for DDG 51 Class ships. [P3A - 10 / DM007 - SPY-1D TRANSMITTER UPGRADES]: Procures SPY-1D Transmitter Upgrades combat systems that includes equipment procurement, recurring engineering, equipment integration and Integrated Logistics Support (ILS) products for DDG 51 Class ships. [P3A - 11 / DM008 - MULTI-MISSION BMD CAPABILITY]: Procures Multi-Mission Ballistic Missile Defense (BMD) Capability combat systems that includes equipment procurement, recurring engineering, equipment integration and Integrated Logistics Support (ILS) products for DDG 51 Class ships. [P3A - 12 / DM009 - VLS UPGRADES]: Procures Vertical Launch System (VLS) Modifications, Evolved Sea Sparrow Missile VLS Modifications, SM3 Operability Heating Ventilation Air Conditioning (HVAC) and VLS MODS for SM3 Block 3 combat systems that includes equipment procurement, recurring engineering, equipment integration and Integrated Logistics Support (ILS) products for DDG 51 Class ships. [P3A - 13 / DM010 - FCS STAMO]: Procures Stabilized Master Oscillator (STAMO) combat systems that include equipment procurement, recurring engineering, equipment integration and Integrated Logistics Support (ILS) products for DDG 51 Class ships. [P3A - 14 / DM011 - AN/SQQ-89 A(V15)]: Procures improved AN/SQQ-89(V)15 with Multi-Functional Towed Array (MFTA) combat systems to replace the installed MIL-STD AN/SQQ-89(V) that includes equipment procurement, recurring engineering, equipment integration and Integrated Logistics Support (ILS) products for DDG 51 Class ships. [P3A - 15 / DM012 - CEC]: Procures Cooperative Engagement Capability (CEC) combat systems that includes equipment procurement, recurring engineering, equipment integration and Integrated Logistics Support (ILS) products for DDG 51 Class ships.		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy					Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment					P-1 Line Item Number / Title: 0900 / DDG Mod				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: 0204228N			Other Related Program Elements: 0604567N, 0604307N			

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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	DDG Mod				- / 705.078	- / 129.681	- / 125.713	- / 115.206	- / -	- / 115.206
P-3a	1 / DM001 - DDG MODERNIZATION HME (GEDMS) (TBD)				- / 180.586	- / 31.688	- / 45.348	- / 34.849	- / 0.000	- / 34.849
P-3a	2 / DM001 - DDG MODERNIZATION HME (MCS/DCS) (TBD)				- / 293.781	- / 63.198	- / 88.413	- / 66.742	- / 0.000	- / 66.742
P-3a	3 / DM001 - DDG MODERNIZATION HME (DVSS) (TBD)				- / 22.253	- / 5.068	- / 8.356	- / 5.970	- / 0.000	- / 5.970
P-3a	4 / DM001 - DDG MODERNIZATION HME (WIRELESS COMMUNICATIONS) (TBD)				- / 12.962	- / 2.097	- / 2.419	- / 1.912	- / 0.000	- / 1.912
P-3a	5 / DM001 - DDG MODERNIZATION HME (IBNS) (TBD)				- / 134.133	- / 28.429	- / 33.560	- / 25.451	- / 0.000	- / 25.451
P-3a	6 / DM003 - MK 160 MOD 15 GWS (TBD)				- / 47.096	- / 9.827	- / 15.229	- / 12.020	- / 0.000	- / 12.020
P-3a	7 / DM004 - AWS UPGRADE (TBD)				- / 339.224	- / 72.953	- / 117.174	- / 97.650	- / 0.000	- / 97.650
P-3a	8 / DM005 - MULTI-MISSION SIGPRO (TBD)				- / 189.600	- / 39.251	- / 59.572	- / 44.301	- / 0.000	- / 44.301
P-3a	9 / DM006 - MULTI-MISSION SSA/CWI MICROWAVE TUBES (TBD)				- / 9.830	- / 2.095	- / 3.199	- / 2.171	- / 0.000	- / 2.171
P-3a	10 / DM007 - SPY-1D TRANSMITTER UPGRADES (TBD)				- / 47.177	- / 10.331	- / 15.634	- / 10.836	- / 0.000	- / 10.836
P-3a	11 / DM008 - MULTI-MISSION BMD CAPABILITY (TBD)				- / 16.940	- / 3.482	- / 5.317	- / 3.608	- / 0.000	- / 3.608
P-3a	12 / DM009 - VLS UPGRADES (TBD)				- / 85.206	- / 18.329	- / 25.990	- / 20.723	- / 0.000	- / 20.723
P-3a	13 / DM010 - FCS STAMO (TBD)				- / 14.843	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	14 / DM011 - AN/SQQ-89 A(V15) (TBD)				- / 120.350	- / 13.185	- / 10.859	- / 5.908	- / 0.000	- / 5.908
P-3a	15 / DM012 - CEC (TBD)				- / 42.143	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	16 / DM013 - (1 MC/DIAS UPGRADE) (TBD)				- / 0.000	- / 0.000	- / 16.936	- / 12.975	- / 0.000	- / 12.975
P-3a	17 / DM013 - (MORIAH WIND SYSTEM) (TBD)				- / 0.000	- / 0.000	- / 7.065	- / 5.304	- / 0.000	- / 5.304
P-3a	18 / DM013 - (IVCS UPGRADE) (TBD)				- / 0.000	- / 0.000	- / 18.984	- / 18.778	- / 0.000	- / 18.778
P-3a	19 / DM013 - Slewing Arm Davit (SLAD) (TBD)				- / 0.000	- / 0.000	- / 2.360	- / 1.799	- / 0.000	- / 1.799
P-3a	20 / DM013 - AN/SPA-25H (TBD)				- / 0.000	- / 0.000	- / 1.227	- / 1.796	- / 0.000	- / 1.796
P-40	Total Gross/Weapon System Cost				- / 2,261.202	- / 429.614	- / 603.355	- / 487.999	- / 0.000	- / 487.999

Exhibits Schedule					FY 2020	FY 2021	FY 2022	FY 2023	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	DDG Mod				- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / DM001 - DDG MODERNIZATION HME (GEDMS) (TBD)				- / 33.885	- / 35.405	- / 35.989	- / 35.940	- / 155.249	- / 586.939
P-3a	2 / DM001 - DDG MODERNIZATION HME (MCS/DCS) (TBD)				- / 68.240	- / 68.878	- / 75.603	- / 76.030	- / 312.392	- / 1,113.277
P-3a	3 / DM001 - DDG MODERNIZATION HME (DVSS) (TBD)				- / 6.036	- / 5.881	- / 6.684	- / 6.691	- / 25.972	- / 92.911
P-3a	4 / DM001 - DDG MODERNIZATION HME (WIRELESS COMMUNICATIONS) (TBD)				- / 1.328	- / 1.542	- / 1.041	- / 0.602	- / 0.000	- / 23.903
P-3a	5 / DM001 - DDG MODERNIZATION HME (IBNS) (TBD)				- / 27.640	- / 28.033	- / 30.206	- / 30.536	- / 108.923	- / 446.911
P-3a	6 / DM003 - MK 160 MOD 15 GWS (TBD)				- / 16.347	- / 16.128	- / 20.870	- / 21.453	- / 73.998	- / 232.968

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy	Date: February 2018

Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment	P-1 Line Item Number / Title: 0900 / DDG Mod

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: 0204228N	Other Related Program Elements: 0604567N, 0604307N

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	7 / DM004 - AWS UPGRADE (TBD)				- / 132.618	- / 122.995	- / 162.977	- / 168.533	- / 673.700	- / 1,887.824
P-3a	8 / DM005 - MULTI-MISSION SIGPRO (TBD)				- / 64.087	- / 63.427	- / 84.774	- / 86.688	- / 266.538	- / 898.238
P-3a	9 / DM006 - MULTI-MISSION SSA/CWI MICROWAVE TUBES (TBD)				- / 3.315	- / 3.375	- / 4.581	- / 4.664	- / 11.660	- / 44.890
P-3a	10 / DM007 - SPY-1D TRANSMITTER UPGRADES (TBD)				- / 11.031	- / 0.903	- / 0.919	- / 0.936	- / 4.938	- / 102.705
P-3a	11 / DM008 - MULTI-MISSION BMD CAPABILITY (TBD)				- / 5.510	- / 5.609	- / 7.613	- / 7.750	- / 19.375	- / 75.204
P-3a	12 / DM009 - VLS UPGRADES (TBD)				- / 27.586	- / 27.251	- / 34.754	- / 35.612	- / 126.745	- / 402.196
P-3a	13 / DM010 - FCS STAMO (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 14.843
P-3a	14 / DM011 - AN/SQQ-89 A(V15) (TBD)				- / 11.384	- / 12.750	- / 8.147	- / 7.087	- / 16.709	- / 206.379
P-3a	15 / DM012 - CEC (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 42.143
P-3a	16 / DM013 - (1 MC/DIAS UPGRADE) (TBD)				- / 12.219	- / 12.761	- / 16.387	- / 13.621	- / 40.968	- / 125.867
P-3a	17 / DM013 - (MORIAH WIND SYSTEM) (TBD)				- / 5.189	- / 5.535	- / 5.901	- / 5.684	- / 14.241	- / 48.919
P-3a	18 / DM013 - (IVCS UPGRADE) (TBD)				- / 25.027	- / 22.730	- / 30.146	- / 31.288	- / 106.423	- / 253.376
P-3a	19 / DM013 - Slewing Arm Davit (SLAD) (TBD)				- / 2.630	- / 2.528	- / 3.426	- / 3.484	- / 11.655	- / 27.882
P-3a	20 / DM013 - AN/SPA-25H (TBD)				- / 1.745	- / 2.110	- / 2.321	- / 3.063	- / 9.466	- / 21.728
P-40	Total Gross/Weapon System Cost				- / 681.567	- / 584.972	- / 911.570	- / 1,057.869	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 2019 Navy																Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9						P-1 Line Item Number / Title: 0900 / DDG Mod						Aggregated Items Title: DDG Mod									
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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) DM002 - LAND BASED ENGINEERING SITES																					
1.1) DM002 - Land Based Engineering Sites ⁽¹⁾	A		-	-	182.343	-	-	6.889	-	-	10.718	-	-	8.838	-	-	-	-	-	8.838	
Subtotal: 1) DM002 - LAND BASED ENGINEERING SITES			-	-	182.343	-	-	6.889	-	-	10.718	-	-	8.838	-	-	-	-	-	8.838	
2) DM013 - CONJUNCTIVE ALTERATION DEFINITION AND INTEGRATION																					
2.1) DM013 - CONJUNCTIVE ALTERATION DEFINITION AND INTEGRATION ⁽²⁾	A		-	-	68.558	-	-	33.982	-	-	12.950	-	-	-	-	-	-	-	-	-	
Subtotal: 2) DM013 - CONJUNCTIVE ALTERATION DEFINITION AND INTEGRATION			-	-	68.558	-	-	33.982	-	-	12.950	-	-	-	-	-	-	-	-	-	
3) HELO HANGER DOOR (HHD)																					
3.1) HELO HANGER DOOR (HHD) EQUIPMENT	A		-	-	-	-	-	-	-	-	-	1,867K	2	3.734	-	-	-	1,867K	2	3.734	
Subtotal: 3) HELO HANGER DOOR (HHD)			-	-	0.000	-	-	-	-	-	-	-	-	3.734	-	-	-	-	-	3.734	
4) OFFICER OF THE DECK SCREEN (OOD)																					
4.1) OFFICER OF THE DECK SCREEN (OOD) EQUIPMENT	A		-	-	-	-	-	-	-	-	-	146,000.00	2	0.292	-	-	-	146,000.00	2	0.292	
Subtotal: 4) OFFICER OF THE DECK SCREEN (OOD)			-	-	0.000	-	-	-	-	-	-	-	-	0.292	-	-	-	-	-	0.292	
5) AWS VIDEO DISTRIBUTION SYSTEM & CIRCUIT 3 TV																					
5.1) AWS VDS & CK3TV EQUIPMENT	A		-	-	-	-	-	-	-	-	-	692,000.00	1	0.692	-	-	-	692,000.00	1	0.692	
Subtotal: 5) AWS VIDEO DISTRIBUTION SYSTEM & CIRCUIT 3 TV			-	-	0.000	-	-	-	-	-	-	-	-	0.692	-	-	-	-	-	0.692	
6) DIGITAL VOLTAGE REGULATOR (DVR)																					
6.1) DIGITAL VOLTAGE REGULATOR EQUIPMENT	A		-	-	-	-	-	-	-	-	-	1,384K	3	4.152	-	-	-	1,384K	3	4.152	
6.2) CONJUNCTIVE ALTERATION ENGINEERING	A		-	-	-	-	-	-	-	-	-	-	-	0.557	-	-	-	-	-	0.557	
Subtotal: 6) DIGITAL VOLTAGE REGULATOR (DVR)			-	-	0.000	-	-	-	-	-	-	-	-	4.709	-	-	-	-	-	4.709	
7) DMCA1 - DDG-51 MODERNIZATION PROGRAM CONGRESSIONAL ADD																					

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy																Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9								P-1 Line Item Number / Title: 0900 / DDG Mod								Aggregated Items Title: DDG Mod				
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
7.1) DMCA1 - DDG-51 MODERNIZATION	A		-	-	5.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.2) SQQ-89A (V) W/ MFTA	A		-	-	25.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 7) DMCA1 - DDG-51 MODERNIZATION PROGRAM CONGRESSIONAL ADD			-	-	30.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8) DMCA3 - COMMUNICATIONS UPGRADE FOR DDG MOD CONGRESSIONAL ADD																				
8.1) DMCA3 - COMMUNICATIONS UPGRADE	A		-	-	3.120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 8) DMCA3 - COMMUNICATIONS UPGRADE FOR DDG MOD CONGRESSIONAL ADD			-	-	3.120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9) DMCA4 - SMART VALVE AUTOMATIC FIRE SUPPRESSION SYSTEM																				
9.1) SMART VALVE EQUIPMENT	A		-	-	2.480	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 9) DMCA4 - SMART VALVE AUTOMATIC FIRE SUPPRESSION SYSTEM			-	-	2.480	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10) DSA FOR FY14 AVAILABILITY																				
10.1) DSA FOR FY14 AVAILABILITY	A		-	-	39.067	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 10) DSA FOR FY14 AVAILABILITY			-	-	39.067	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11) DM6IN - INSTALLATION																				
11.1) AIT & CONJUNCTIVE ALTS INSTALLATION ⁽³⁾	A		-	-	364.510	-	-	88.810	-	-	102.045	-	-	59.418	-	-	-	-	-	59.418
Subtotal: 11) DM6IN - INSTALLATION			-	-	364.510	-	-	88.810	-	-	102.045	-	-	59.418	-	-	-	-	-	59.418
12) MRG Procurement																				
12.1) MRG Equipment	A		15,000K	1	15.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 12) MRG Procurement			-	-	15.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14) AEGIS MODERNIZATION TESTING (AMT) ⁽⁴⁾																				
14.1) AEGIS MODERNIZATION TESTING (AMT)	A		-	-	-	-	-	-	-	-	-	-	-	19.523	-	-	-	-	-	19.523
Subtotal: 14) AEGIS MODERNIZATION TESTING (AMT)			-	-	0.000	-	-	-	-	-	-	-	-	19.523	-	-	-	-	-	19.523
15) COMBAT SYSTEM SHIP QUALIFICATION TRIALS (CSSQT) ⁽⁵⁾																				
15.1) COMBAT SYSTEM SHIP	A		-	-	-	-	-	-	-	-	-	-	-	18.000	-	-	-	-	-	18.000

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9							P-1 Line Item Number / Title: 0900 / DDG Mod							Aggregated Items Title: DDG Mod						
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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)
QUALIFICATION TRIALS (CSSQT)																				
Subtotal: 15) COMBAT SYSTEM SHIP QUALIFICATION TRIALS (CSSQT)			-	-	0.000	-	-	-	-	-	-	-	-	18.000	-	-	-	-	-	18.000
Total			-	-	705.078	-	-	129.681	-	-	125.713	-	-	115.206	-	-	-	-	-	115.206

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

Footnotes:

- (1) Funds are used to upgrade shore facilities utilized for pre-installation testing and crew training of HM&E and Combat Systems alterations. Increase in cost from FY17 to FY18-FY20 due to procurement and testing of Contract III HM&E systems at NWSC/PD LBES.
- (2) Previous budget submissions group the following conjunctive alterations into one P-40A across the FYDP: 1MC, Moriah, IVCS, SPA-25H, SLAD, HHD, OOD, AWS/VDS/CK3TV, & DVR. DON 19 now shows cost associated with the following conjunctive alterations in a P-3A exhibit: 1MC, Moriah, IVCS, SPA-25H, SLAD. The remaining conjunctive alterations (HHD, OOD, AWS/VDS/CK3TV, & DVR) are now shown in P-40A exhibits.
- (3) Includes conjunctive alteration installation, installation support, future Design Services Allocation (DSA), and Alterations Installation Teams (AIT) support.
- (4) Provide on-site engineering and technical support of DDG Modernization availabilities. Provide engineering support to execute system and element testing requirements from AEGIS Light Off (ALO) to end of availability. Serve as the combat system engineering agent technical point of contact for combat system DDG Modernization matters.
- (5) Combat Systems Ship Qualifications Trials consists of aircraft flight and re-fueling services, Air Warfare/Surface Warfare/Under Sea Warfare range services and support, scenario data recording and data analysis.

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0900 / DDG Mod					Modification Number / Title: 1 / DM001 - DDG MODERNIZATION HME (GEDMS)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	180.586	31.688	45.348	34.849	0.000	34.849	33.885	33.405	35.989	35.940	155.249	586.939
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	180.586	31.688	45.348	34.849	0.000	34.849	33.885	33.405	35.989	35.940	155.249	586.939
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	180.586	31.688	45.348	34.849	0.000	34.849	33.885	33.405	35.989	35.940	155.249	586.939
<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: Gigabit Ethernet Data Multiplexing System (GEDMS) replaces the obsolete copper machinery control LAN infrastructure with a new system based on the widely used Ethernet industry standard. Engineering Services: Production Support Services are phased over a three (3) year span starting two (2) years prior to installation on a per hull basis. It includes five (5) elements that are related to the production and delivery of a usable end-item: Production Engineering, Quality Assurance, Product Improvement, Acceptance Test and Evaluation, and Contractor Engineering and Technical Services (CETS). Due to the phasing of the requirement over a three year period, engineering services will fluctuate depending on the number of ships in each year. Five (5) elements and approximate breakdown is as follows: Production Engineering includes preparation, test and technical evaluation of engineering changes to correct deficiencies in the production items; production configuration control; review and evaluation of production design data and documentation; and logistic supportability efforts. Quality Assurance includes the preparation of procedures and the conduct of inspections, examinations and test during production that are necessary to deliver an item of the required quality as specified by the terms of the contract. Product Improvement includes improving reliability/maintainability/availability, and the correction of deficiencies exclusive of contractual specifications. Acceptance Test and Evaluation of a production item includes preparation of test plans, testing, data analysis, and data evaluation. Contractor Engineering and Technical Services (CETS) includes the furnishing of advice, instruction, and training by commercial or industrial companies.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0900 / DDG Mod						Modification Number / Title: 1 / DM001 - DDG MODERNIZATION HME (GEDMS)			
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: 0604567N					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> DM001 - DDG MODERNIZATION HME (GEDMS)													
B Kits													
Recurring													
1.1.1) GEDMS Equipment - NonOrganic ⁽⁶⁾	21 / 78.634	3 / 8.321	1 / 2.823	1 / 2.492	- / -	1 / 2.492	1 / 2.926	1 / 2.979	- / -	- / -	- / -	28 / 98.175	
1.1.2) GEDMS EQUIPMENT FLIGHT IIA - NonOrganic ⁽⁷⁾	3 / 3.901	2 / 2.663	3 / 4.066	2 / 2.760	- / -	2 / 2.760	3 / 4.213	3 / 4.290	4 / 5.822	4 / 5.927	10 / 14.818	34 / 48.460	
<i>Subtotal: Recurring</i>	- / 82.535	- / 10.984	- / 6.889	- / 5.252	- / -	- / 5.252	- / 7.139	- / 7.269	- / 5.822	- / 5.927	- / 14.818	- / 146.635	
<i>Subtotal: DM001 - DDG MODERNIZATION HME (GEDMS)</i>	24 / 82.535	5 / 10.984	4 / 6.889	3 / 5.252	- / -	3 / 5.252	4 / 7.139	4 / 7.269	4 / 5.822	4 / 5.927	10 / 14.818	62 / 146.635	
<i>Subtotal: Procurement, All Modification Items</i>	- / 82.535	- / 10.984	- / 6.889	- / 5.252	- / -	- / 5.252	- / 7.139	- / 7.269	- / 5.822	- / 5.927	- / 14.818	- / 146.635	
Support (All Modification Items)													
2.1) GEDMS ENGINEERING SERVICES	- / 26.405	- / 4.814	- / 4.950	- / 4.535	- / -	- / 4.535	- / 4.617	- / 4.700	- / 4.785	- / 4.871	- / 25.700	- / 85.377	
<i>Subtotal: Support</i>	- / 26.405	- / 4.814	- / 4.950	- / 4.535	- / -	- / 4.535	- / 4.617	- / 4.700	- / 4.785	- / 4.871	- / 25.700	- / 85.377	
Installation													
<i>Modification Item 1 of 1:</i> DM001 - DDG MODERNIZATION HME (GEDMS)	- / 71.646	- / 15.890	- / 33.509	- / 25.062	- / 0.000	- / 25.062	- / 22.129	- / 21.436	- / 25.382	- / 25.142	- / 114.731	- / 354.927	
<i>Subtotal: Installation</i>	- / 71.646	- / 15.890	- / 33.509	- / 25.062	- / -	- / 25.062	- / 22.129	- / 21.436	- / 25.382	- / 25.142	- / 114.731	- / 354.927	
Total													
Total Cost (Procurement + Support + Installation)	180.586	31.688	45.348	34.849	0.000	34.849	33.885	33.405	35.989	35.940	155.249	586.939	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0900 / DDG Mod					Modification Number / Title: 1 / DM001 - DDG MODERNIZATION HME (GEDMS)																					
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:																					
Modification Item 1 of 1: DM001 - DDG MODERNIZATION HME (GEDMS)																															
Manufacturer Information																															
Manufacturer Name: Boeing										Manufacturer Location: Anaheim, CA																					
Administrative Leadtime (in Months): 6										Production Leadtime (in Months): 16																					
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023																								
Contract Dates	Jul 2017	Jul 2018	Jul 2019	Jul 2020	Jul 2021	May 2022	Jul 2023																								
Delivery Dates	Nov 2018	Nov 2019	Nov 2020	Nov 2021	Nov 2022	Sep 2023	Nov 2024																								
Installation Information																															
Method of Implementation: SHIPYARD:: Installation Name: GEDMS Equipment																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total																		
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																
Prior Years		16 / 69.362	1 / 8.065	4 / 16.711	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	21 / 94.138																		
FY 2017		- / -	0 / 0.649	0 / 3.925	3 / 10.022	0 / 0.000	3 / 10.022	- / -	- / -	- / -	- / -	0 / 0.000	3 / 14.596																		
FY 2018		- / -	- / -	0 / 0.306	0 / 1.160	0 / 0.000	0 / 1.160	1 / 3.414	- / -	- / -	- / -	0 / 0.000	1 / 4.880																		
FY 2019		- / -	- / -	- / -	0 / 0.313	0 / 0.000	0 / 0.313	0 / 1.750	1 / 4.818	- / -	- / -	0 / 0.000	1 / 6.881																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.319	0 / 1.785	1 / 4.902	- / -	0 / 0.000	1 / 7.006																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.326	0 / 1.821	1 / 4.987	0 / 0.000	1 / 7.134																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		16 / 69.362	1 / 8.714	4 / 20.942	3 / 11.495	0 / 0.000	3 / 11.495	1 / 5.483	1 / 6.929	1 / 6.723	1 / 4.987	0 / 0.000	28 / 134.635																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	16	-	-	-	1	-	1	2	1	-	2	-	1	-	-	-	1	-	-	1	-	-	1	-	-	-	1	-	-	-	28
Out	15	-	-	-	1	-	-	1	-	1	-	2	1	-	1	1	1	-	-	1	-	-	-	1	-	-	1	-	-	1	28

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0900 / DDG Mod	Modification Number / Title: 1 / DM001 - DDG MODERNIZATION HME (GEDMS)

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

Modification Item 1 of 1: DM001 - DDG MODERNIZATION HME (GEDMS)

Installation Information

Method of Implementation: [none specified]:: Installation Name: GEDMS EQUIPMENT FLIGHT IIA

Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	0 / 2.284	1 / 6.638	2 / 8.387	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	3 / 17.309
FY 2017	- / -	0 / 0.538	0 / 3.381	2 / 8.520	0 / 0.000	2 / 8.520	- / -	- / -	- / -	- / -	0 / 0.000	2 / 12.439
FY 2018	- / -	- / -	0 / 0.799	0 / 4.468	0 / 0.000	0 / 4.468	3 / 12.591	- / -	- / -	- / -	0 / 0.000	3 / 17.858
FY 2019	- / -	- / -	- / -	0 / 0.579	0 / 0.000	0 / 0.579	0 / 3.238	2 / 9.012	- / -	- / -	0 / 0.000	2 / 12.829
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.817	0 / 4.741	3 / 13.246	- / -	0 / 0.000	3 / 18.804
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.754	0 / 4.151	3 / 11.839	0 / 0.000	3 / 16.744
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 1.262	0 / 7.060	4 / 19.416	4 / 27.738
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 1.256	4 / 26.335	4 / 27.591
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 68.980	10 / 68.980
Total	0 / 2.284	1 / 7.176	2 / 12.567	2 / 13.567	0 / 0.000	2 / 13.567	3 / 16.646	2 / 14.507	3 / 18.659	3 / 20.155	18 / 114.731	34 / 220.292

Installation Schedule

	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	1	-	-	2	-	-	-	2	-	-	-	2	-	1	-	2	-	-	-	3	-	-	-	3	-	-	18	34
Out	-	-	-	-	-	-	-	-	1	-	-	2	-	-	-	2	-	-	1	1	1	-	-	-	2	-	3	-	-	21	34

Footnotes:

(6) Engineering Services line includes both Flight I/II and Flight IIA ships. Installation costs across the FYDP vary depending on current port rates - avails not designated with a specific execution port (TBD) have a generic rate for budgeting, and install costs will be updated once an execution port is assigned. Port rates are updated every year by CNRMC based on the forecasted port loading model. Port loading rate forecasts are the rates recommended for all budgeted maintenance and organic modernization within a specific port. Individual ship's availability durations vary dependent upon the integration of ship's maintenance and modernization work packages.

(7) Due to ship specific differences, the unit cost for a Flight IIA ship is less than that for a Flight I/II ship. DDG 111 & 112 received GEDMS during new construction. Large funding increase in FY 18 due to increase in DDG Modernization installations from 2 in FY 17 to 6 in FY 18.

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0900 / DDG Mod					Modification Number / Title: 2 / DM001 - DDG MODERNIZATION HME (MCS/DCS)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	293.781	63.198	88.413	66.742	0.000	66.742	68.240	68.878	75.603	76.030	312.392	1,113.277
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	293.781	63.198	88.413	66.742	0.000	66.742	68.240	68.878	75.603	76.030	312.392	1,113.277
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	293.781	63.198	88.413	66.742	0.000	66.742	68.240	68.878	75.603	76.030	312.392	1,113.277
<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: Machinery Control System (MCS) replaces the obsolete control consoles while also delivering enhanced capability to the fleet through improved situational awareness and reconfigurable user stations. The new consoles use COTS-based computers which connect via Versa Modular Eurocard (VME)-chassis technology. The VME architecture is expected to be supportable for the remaining service life of the ship and will enable computer upgrades within the chassis thereby mitigating future obsolescence concerns. Engineering Services: Production Support Services are phased over a three (3) year span starting two (2) years prior to installation on a per hull basis. It includes five (5) elements that are related to the production and delivery of a usable end-item: Production Engineering, Quality Assurance, Product Improvement, Acceptance Test and Evaluation, and Contractor Engineering and Technical Services (CETS). Due to the phasing of the requirement over a three year period, engineering services will fluctuate depending on the number of ships in each year. Five (5) elements and approximate breakdown is as follows: Production Engineering includes preparation, test and technical evaluation of engineering changes to correct deficiencies in the production items; production configuration control; review and evaluation of production design data and documentation; and logistic supportability efforts. Quality Assurance includes the preparation of procedures and the conduct of inspections, examinations and test during production that are necessary to deliver an item of the required quality as specified by the terms of the contract. Product Improvement includes improving reliability/maintainability/availability, and the correction of deficiencies exclusive of contractual specifications. Acceptance Test and Evaluation of a production item includes preparation of test plans, testing, data analysis, and data evaluation. Contractor Engineering and Technical Services (CETS) includes the furnishing of advice, instruction, and training by commercial or industrial companies.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0900 / DDG Mod										Modification Number / Title: 2 / DM001 - DDG MODERNIZATION HME (MCS/DCS)																
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:																					
Modification Item 1 of 1: DM001 - DDG MODERNIZATION HME (MCS/DCS)																															
Manufacturer Information																															
Manufacturer Name: Lockheed Martin										Manufacturer Location: Orlando, FL																					
Administrative Leadtime (in Months): 6										Production Leadtime (in Months): 16																					
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023																								
Contract Dates	Jul 2017	Jul 2018	Jul 2019	Jul 2020	Jul 2021	May 2022	Jul 2023																								
Delivery Dates	Nov 2018	Nov 2019	Nov 2020	Nov 2021	Nov 2022	Sep 2023	Nov 2024																								
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: MCS/DCS EQUIPMENT																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total																		
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																
Prior Years		16 / 133.728	2 / 26.832	6 / 40.807	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	24 / 201.367																		
FY 2017		- / -	0 / 2.330	0 / 16.097	5 / 29.608	0 / 0.000	5 / 29.608	- / -	- / -	- / -	- / -	0 / 0.000	5 / 48.035																		
FY 2018		- / -	- / -	0 / 2.172	0 / 12.409	0 / 0.000	0 / 12.409	4 / 25.878	- / -	- / -	- / -	0 / 0.000	4 / 40.459																		
FY 2019		- / -	- / -	- / -	0 / 1.752	0 / 0.000	0 / 1.752	0 / 10.991	3 / 22.799	- / -	- / -	0 / 0.000	3 / 35.542																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	0 / 2.291	0 / 14.381	4 / 29.843	- / -	0 / 0.000	4 / 46.515																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 2.094	0 / 13.146	4 / 27.345	0 / 0.000	4 / 42.585																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 2.477	0 / 15.542	4 / 32.173	4 / 50.192																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 2.463	4 / 47.434	4 / 49.897																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 124.742	10 / 124.742																		
Total		16 / 133.728	2 / 29.162	6 / 59.076	5 / 43.769	0 / 0.000	5 / 43.769	4 / 39.160	3 / 39.274	4 / 45.466	4 / 45.350	18 / 204.349	62 / 639.334																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	16	-	-	1	1	-	3	2	1	-	4	-	1	-	2	-	2	-	2	1	-	-	4	-	-	-	4	-	-	18	62
Out	15	-	-	-	1	-	-	1	1	1	-	4	1	1	1	2	1	-	1	2	1	-	-	1	2	-	4	-	-	22	62
Footnotes: ⁽⁸⁾ Installation costs across the FYDP vary depending on current port rates - avails not designated with a specific execution port (TBD) have a generic rate for budgeting, and install costs will be updated once an execution port is assigned. Port rates are updated every year by CNRMC based on the forecasted port loading model. Port loading rate forecasts are the rates recommended for all budgeted maintenance and																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0900 / DDG Mod					Modification Number / Title: 3 / DM001 - DDG MODERNIZATION HME (DVSS)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	22.253	5.068	8.356	5.970	0.000	5.970	6.036	5.881	6.684	6.691	25.972	92.911
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	22.253	5.068	8.356	5.970	0.000	5.970	6.036	5.881	6.684	6.691	25.972	92.911
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	22.253	5.068	8.356	5.970	0.000	5.970	6.036	5.881	6.684	6.691	25.972	92.911
<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: Digital Video Surveillance System (DVSS) is a network of video cameras which are integrated into the Machinery Control System. This system is primarily a watch-stander situational awareness tool which supplements the workload reduction benefits of the new MCS. Engineering Services: Production Support Services are phased over a three (3) year span starting two (2) years prior to installation on a per hull basis. It includes five (5) elements that are related to the production and delivery of a usable end-item: Production Engineering, Quality Assurance, Product Improvement, Acceptance Test and Evaluation, and Contractor Engineering and Technical Services (CETS). Due to the phasing of the requirement over a three year period, engineering services will fluctuate depending on the number of ships in each year. Five (5) elements and approximate breakdown is as follows: Production Engineering includes preparation, test and technical evaluation of engineering changes to correct deficiencies in the production items; production configuration control; review and evaluation of production design data and documentation; and logistic supportability efforts. Quality Assurance includes the preparation of procedures and the conduct of inspections, examinations and test during production that are necessary to deliver an item of the required quality as specified by the terms of the contract. Product Improvement includes improving reliability/maintainability/availability, and the correction of deficiencies exclusive of contractual specifications. Acceptance Test and Evaluation of a production item includes preparation of test plans, testing, data analysis, and data evaluation. Contractor Engineering and Technical Services (CETS) includes the furnishing of advice, instruction, and training by commercial or industrial companies.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0900 / DDG Mod						Modification Number / Title: 3 / DM001 - DDG MODERNIZATION HME (DVSS)			
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: 0604567N					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> DM001 - DDG MODERNIZATION HME (DVSS)													
B Kits													
Recurring													
1.1.1) DVSS Equipment - NonOrganic ⁽⁹⁾	24 / 8.964	5 / 2.560	4 / 2.085	3 / 1.592	- / -	3 / 1.592	4 / 2.160	4 / 2.200	4 / 2.239	4 / 2.280	10 / 5.700	62 / 29.780	
<i>Subtotal: Recurring</i>	- / 8.964	- / 2.560	- / 2.085	- / 1.592	- / -	- / 1.592	- / 2.160	- / 2.200	- / 2.239	- / 2.280	- / 5.700	- / 29.780	
Non-Recurring													
1.2.1) DVSS 1st Article & NRE - Organic	- / 0.477	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.477	
<i>Subtotal: Non-Recurring</i>	- / 0.477	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 0.477	
<i>Subtotal: DM001 - DDG MODERNIZATION HME (DVSS)</i>	24 / 9.441	5 / 2.560	4 / 2.085	3 / 1.592	- / -	3 / 1.592	4 / 2.160	4 / 2.200	4 / 2.239	4 / 2.280	10 / 5.700	62 / 30.257	
<i>Subtotal: Procurement, All Modification Items</i>	- / 9.441	- / 2.560	- / 2.085	- / 1.592	- / -	- / 1.592	- / 2.160	- / 2.200	- / 2.239	- / 2.280	- / 5.700	- / 30.257	
Installation													
<i>Modification Item 1 of 1:</i> DM001 - DDG MODERNIZATION HME (DVSS)	- / 12.812	- / 2.508	- / 6.271	- / 4.378	- / 0.000	- / 4.378	- / 3.876	- / 3.681	- / 4.445	- / 4.411	- / 20.272	- / 62.654	
<i>Subtotal: Installation</i>	- / 12.812	- / 2.508	- / 6.271	- / 4.378	- / -	- / 4.378	- / 3.876	- / 3.681	- / 4.445	- / 4.411	- / 20.272	- / 62.654	
Total													
Total Cost (Procurement + Support + Installation)	22.253	5.068	8.356	5.970	0.000	5.970	6.036	5.881	6.684	6.691	25.972	92.911	

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Exhibit P-3a, Individual Modification: PB 2019 Navy												Date: February 2018																			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9								P-1 Line Item Number / Title: 0900 / DDG Mod								Modification Number / Title: 3 / DM001 - DDG MODERNIZATION HME (DVSS)															
ID Code (A=Service Ready, B=Not Service Ready) :												MDAP/MAIS Code:																			
Modification Item 1 of 1: DM001 - DDG MODERNIZATION HME (DVSS)																															
Manufacturer Information																															
Manufacturer Name: NSWC SSES												Manufacturer Location: Philadelphia, PA																			
Administrative Leadtime <i>(in Months)</i> : 6												Production Leadtime <i>(in Months)</i> : 16																			
Dates		FY 2017		FY 2018		FY 2019		FY 2020		FY 2021		FY 2022		FY 2023																	
Contract Dates		Jul 2017		Jul 2018		Jul 2019		Jul 2020		Jul 2021		May 2022		Jul 2023																	
Delivery Dates		Nov 2018		Nov 2019		Nov 2020		Nov 2021		Nov 2022		Sep 2023		Nov 2024																	
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: DVSS Equipment																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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		16 / 12.812	2 / 2.298	6 / 4.677	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	24 / 19.787																		
FY 2017		- / -	0 / 0.210	0 / 1.012	5 / 3.440	0 / 0.000	5 / 3.440	- / -	- / -	- / -	- / -	0 / 0.000	5 / 4.662																		
FY 2018		- / -	- / -	0 / 0.582	0 / 0.781	0 / 0.000	0 / 0.781	4 / 2.979	- / -	- / -	- / -	0 / 0.000	4 / 4.342																		
FY 2019		- / -	- / -	- / -	0 / 0.157	0 / 0.000	0 / 0.157	0 / 0.692	3 / 2.588	- / -	- / -	0 / 0.000	3 / 3.437																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.205	0 / 0.904	4 / 3.394	- / -	0 / 0.000	4 / 4.503																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.189	0 / 0.827	4 / 3.192	0 / 0.000	4 / 4.208																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.224	0 / 0.997	4 / 3.641	4 / 4.862																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.222	4 / 4.593	4 / 4.815																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 12.038	10 / 12.038																		
Total		16 / 12.812	2 / 2.508	6 / 6.271	5 / 4.378	0 / 0.000	5 / 4.378	4 / 3.876	3 / 3.681	4 / 4.445	4 / 4.411	18 / 20.272	62 / 62.654																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	16	-	-	1	1	-	3	2	1	-	4	-	1	-	2	-	2	-	2	1	-	-	4	-	-	-	4	-	-	18	62
Out	15	-	-	-	1	-	-	1	1	1	-	4	1	1	1	2	1	-	1	2	1	-	1	-	2	-	4	-	-	22	62
Footnotes:																															
⁽⁹⁾ Installation costs across the FYDP vary depending on current port rates - avails not designated with a specific execution port (TBD) have a generic rate for budgeting, and install costs will be updated once an execution port is assigned. Port rates are updated every year by CNRMC based on the forecasted port loading model. Port loading rate forecasts are the rates recommended for all budgeted maintenance and																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0900 / DDG Mod	Modification Number / Title: 3 / DM001 - DDG MODERNIZATION HME (DVSS)
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
organic modernization within a specific port. Individual ship's availability durations vary dependent upon the integration of ship's maintenance and modernization work packages. Large funding increase in FY 18 due to increase in DDG Modernization installations from 2 in FY 17 to 6 in FY 18.		

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Exhibit P-3a, Individual Modification: PB 2019 Navy						Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0900 / DDG Mod				Modification Number / Title: 4 / DM001 - DDG MODERNIZATION HME (WIRELESS COMMUNICATIONS)			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	12.962	2.097	2.419	1.912	0.000	1.912	1.328	1.542	1.041	0.602	0.000	23.903
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	12.962	2.097	2.419	1.912	0.000	1.912	1.328	1.542	1.041	0.602	0.000	23.903
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	12.962	2.097	2.419	1.912	0.000	1.912	1.328	1.542	1.041	0.602	0.000	23.903
(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:

Shipwide Interior Wireless Communication System (SIWCS) - provides point-to-point coverage throughout the internal spaces of the ship as well as topside, topside-to-interior, line of sight ship-to-ship & line of sight ship-to-shore communications capabilities. All FLT IIAs (DDG 79+) have a version of SIWCS installed.

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0900 / DDG Mod					Modification Number / Title: 4 / DM001 - DDG MODERNIZATION HME (WIRELESS COMMUNICATIONS)			
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: 0604567N					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> DM001 - DDG MODERNIZATION HME (WIRELESS COMMUNICATIONS)													
B Kits													
Recurring													
1.1.1) Wireless Communications Equipment - NonOrganic ⁽¹⁰⁾	15 / 5.713	3 / 1.301	- / -	1 / 0.449	- / -	1 / 0.449	1 / 0.457	1 / 0.466	- / -	- / -	- / -	21 / 8.386	
<i>Subtotal: Recurring</i>	- / 5.713	- / 1.301	- / -	- / 0.449	- / -	- / 0.449	- / 0.457	- / 0.466	- / -	- / -	- / 0.000	- / 8.386	
<i>Subtotal: DM001 - DDG MODERNIZATION HME (WIRELESS COMMUNICATIONS)</i>	15 / 5.713	3 / 1.301	- / -	1 / 0.449	- / -	1 / 0.449	1 / 0.457	1 / 0.466	- / -	- / -	- / -	21 / 8.386	
<i>Subtotal: Procurement, All Modification Items</i>	- / 5.713	- / 1.301	- / -	- / 0.449	- / -	- / 0.449	- / 0.457	- / 0.466	- / -	- / -	- / 0.000	- / 8.386	
Installation													
<i>Modification Item 1 of 1:</i> DM001 - DDG MODERNIZATION HME (WIRELESS COMMUNICATIONS)													
	- / 7.249	- / 0.796	- / 2.419	- / 1.463	- / 0.000	- / 1.463	- / 0.871	- / 1.076	- / 1.041	- / 0.602	- / 0.000	- / 15.517	
<i>Subtotal: Installation</i>	- / 7.249	- / 0.796	- / 2.419	- / 1.463	- / -	- / 1.463	- / 0.871	- / 1.076	- / 1.041	- / 0.602	- / 0.000	- / 15.517	
Total													
Total Cost (Procurement + Support + Installation)	12.962	2.097	2.419	1.912	0.000	1.912	1.328	1.542	1.041	0.602	0.000	23.903	

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Exhibit P-3a, Individual Modification: PB 2019 Navy												Date: February 2018																			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0900 / DDG Mod										Modification Number / Title: 4 / DM001 - DDG MODERNIZATION HME (WIRELESS COMMUNICATIONS)											
ID Code (A=Service Ready, B=Not Service Ready) :														MDAP/MAIS Code:																	
Modification Item 1 of 1: DM001 - DDG MODERNIZATION HME (WIRELESS COMMUNICATIONS)																															
Manufacturer Information																															
Manufacturer Name: Spawar Systems Center Atlantic													Manufacturer Location: Charleston, SC																		
Administrative Leadtime (<i>in Months</i>): 6													Production Leadtime (<i>in Months</i>): 16																		
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates		Jul 2017								Jul 2019				Jul 2020				Jul 2021													
Delivery Dates		Nov 2018								Nov 2020				Nov 2022				Nov 2022													
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: Wireless Communications Equipment																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		12 / 7.249		0 / 0.730		3 / 1.530		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		15 / 9.509							
FY 2017		- / -		0 / 0.066		0 / 0.852		3 / 1.123		0 / 0.000		3 / 1.123		- / -		- / -		- / -		- / -		0 / 0.000		3 / 2.041							
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2019		- / -		- / -		0 / 0.037		0 / 0.340		0 / 0.000		0 / 0.340		1 / 0.817		0 / 0.579		- / -		- / -		0 / 0.000		1 / 1.773							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.054		0 / 0.441		1 / 0.591		- / -		0 / 0.000		1 / 1.086							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.056		0 / 0.450		1 / 0.602		0 / 0.000		1 / 1.108							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		12 / 7.249		0 / 0.796		3 / 2.419		3 / 1.463		0 / 0.000		3 / 1.463		1 / 0.871		0 / 1.076		1 / 1.041		1 / 0.602		0 / 0.000		21 / 15.517							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	12	-	-	-	-	-	1	1	1	-	2	-	1	-	-	-	1	-	-	-	-	-	1	-	-	-	1	-	-	-	21
Out	11	-	-	-	1	-	-	-	-	1	-	1	1	1	1	-	1	-	-	1	-	-	-	-	-	-	1	-	-	1	21
Footnotes: ⁽¹⁰⁾ All flight I & II require SIWCS with the exception of DDGs 53-56 and 63 (previously installed). All flight IIA's have a version of SIWCS installed. Installation costs across the FYDP vary depending on current port rates - avails not designated with a specific execution port (TBD) have a generic rate for budgeting, and install costs will be updated once an execution port is assigned. Port rates are updated every year																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0900 / DDG Mod	Modification Number / Title: 4 / DM001 - DDG MODERNIZATION HME (WIRELESS COMMUNICATIONS)
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
by CNRMC based on the forecasted port loading model. Port loading rate forecasts are the rates recommended for all budgeted maintenance and organic modernization within a specific port. Individual ship's availability durations vary dependent upon the integration of ship's maintenance and modernization work packages.		

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0900 / DDG Mod					Modification Number / Title: 5 / DM001 - DDG MODERNIZATION HME (IBNS)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	134.133	28.429	33.560	25.451	0.000	25.451	27.640	28.033	30.206	30.536	108.923	446.911
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	134.133	28.429	33.560	25.451	0.000	25.451	27.640	28.033	30.206	30.536	108.923	446.911
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	134.133	28.429	33.560	25.451	0.000	25.451	27.640	28.033	30.206	30.536	108.923	446.911
<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 Integrated Bridge & Navigation System (IBNS) replaces obsolete bridge consoles and introduces flexibility with how the pilot house is managed during navigation. The key benefit is the ability for operating with fewer watch-standers, reduced watch standard workloads, and improved safety of navigation. Engineering Services: Production Support Services are phased over a three (3) year span starting two (2) years prior to installation on a per hull basis. It includes five (5) elements that are related to the production and delivery of a usable end-item: Production Engineering, Quality Assurance, Product Improvement, Acceptance Test and Evaluation, and Contractor Engineering and Technical Services (CETS). Due to the phasing of the requirement over a three year period, engineering services will fluctuate depending on the number of ships in each year. Five (5) elements and approximate breakdown is as follows: Production Engineering includes preparation, test and technical evaluation of engineering changes to correct deficiencies in the production items; production configuration control; review and evaluation of production design data and documentation; and logistic supportability efforts. Quality Assurance includes the preparation of procedures and the conduct of inspections, examinations and test during production that are necessary to deliver an item of the required quality as specified by the terms of the contract. Product Improvement includes improving reliability/maintainability/availability, and the correction of deficiencies exclusive of contractual specifications. Acceptance Test and Evaluation of a production item includes preparation of test plans, testing, data analysis, and data evaluation. Contractor Engineering and Technical Services (CETS) includes the furnishing of advice, instruction, and training by commercial or industrial companies.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0900 / DDG Mod						Modification Number / Title: 5 / DM001 - DDG MODERNIZATION HME (IBNS)			
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: 0604567N					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: DM001 - DDG MODERNIZATION HME (IBNS)													
B Kits													
Recurring													
1.1.1) IBNS Equipment - NonOrganic ⁽¹¹⁾	24 / 74.781	5 / 16.381	4 / 13.340	3 / 10.185	- / -	3 / 10.185	4 / 13.824	4 / 14.073	4 / 14.327	4 / 14.585	10 / 36.463	62 / 207.959	
1.1.2) IBNS 1st Article & NRE - Organic	- / 4.186	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 4.186	
Subtotal: Recurring	- / 78.967	- / 16.381	- / 13.340	- / 10.185	- / -	- / 10.185	- / 13.824	- / 14.073	- / 14.327	- / 14.585	- / 36.463	- / 212.145	
Subtotal: DM001 - DDG MODERNIZATION HME (IBNS)	24 / 78.967	5 / 16.381	4 / 13.340	3 / 10.185	- / -	3 / 10.185	4 / 13.824	4 / 14.073	4 / 14.327	4 / 14.585	10 / 36.463	62 / 212.145	
Subtotal: Procurement, All Modification Items	- / 78.967	- / 16.381	- / 13.340	- / 10.185	- / -	- / 10.185	- / 13.824	- / 14.073	- / 14.327	- / 14.585	- / 36.463	- / 212.145	
Support (All Modification Items)													
2.1) IBNS ENGINEERING SERVICES	- / 6.425	- / 1.968	- / 1.468	- / 1.345	- / -	- / 1.345	- / 1.369	- / 1.394	- / 1.419	- / 1.444	- / 7.622	- / 24.454	
Subtotal: Support	- / 6.425	- / 1.968	- / 1.468	- / 1.345	- / -	- / 1.345	- / 1.369	- / 1.394	- / 1.419	- / 1.444	- / 7.622	- / 24.454	
Installation													
Modification Item 1 of 1: DM001 - DDG MODERNIZATION HME (IBNS)	- / 48.741	- / 10.080	- / 18.752	- / 13.921	- / 0.000	- / 13.921	- / 12.447	- / 12.566	- / 14.460	- / 14.507	- / 64.838	- / 210.312	
Subtotal: Installation	- / 48.741	- / 10.080	- / 18.752	- / 13.921	- / -	- / 13.921	- / 12.447	- / 12.566	- / 14.460	- / 14.507	- / 64.838	- / 210.312	
Total													
Total Cost (Procurement + Support + Installation)	134.133	28.429	33.560	25.451	0.000	25.451	27.640	28.033	30.206	30.536	108.923	446.911	

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Exhibit P-3a, Individual Modification: PB 2019 Navy												Date: February 2018																			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9								P-1 Line Item Number / Title: 0900 / DDG Mod								Modification Number / Title: 5 / DM001 - DDG MODERNIZATION HME (IBNS)															
ID Code (A=Service Ready, B=Not Service Ready) :												MDAP/MAIS Code:																			
Modification Item 1 of 1: DM001 - DDG MODERNIZATION HME (IBNS)																															
Manufacturer Information																															
Manufacturer Name: Northrop Grumman Sperry												Manufacturer Location: Charlottesville, VA																			
Administrative Leadtime <i>(in Months)</i> : 6												Production Leadtime <i>(in Months)</i> : 16																			
Dates		FY 2017		FY 2018		FY 2019		FY 2020		FY 2021		FY 2022		FY 2023																	
Contract Dates		Jul 2017		Jul 2018		Jul 2019		Jul 2020		Jul 2021		May 2022		Jul 2023																	
Delivery Dates		Nov 2018		Nov 2019		Nov 2020		Nov 2021		Nov 2022		Sep 2023		Nov 2024																	
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: IBNS Equipment																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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		16 / 48.741	2 / 9.344	6 / 12.651	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	24 / 70.736																		
FY 2017		- / -	0 / 0.736	0 / 5.415	5 / 9.193	0 / 0.000	5 / 9.193	- / -	- / -	- / -	- / -	0 / 0.000	5 / 15.344																		
FY 2018		- / -	- / -	0 / 0.686	0 / 4.173	0 / 0.000	0 / 4.173	4 / 8.022	- / -	- / -	- / -	0 / 0.000	4 / 12.881																		
FY 2019		- / -	- / -	- / -	0 / 0.555	0 / 0.000	0 / 0.555	0 / 3.699	3 / 7.060	- / -	- / -	0 / 0.000	3 / 11.314																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.726	0 / 4.840	4 / 9.246	- / -	0 / 0.000	4 / 14.812																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.666	4 / 4.429	0 / 8.491	0 / 0.000	4 / 13.586																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.785	4 / 5.235	0 / 9.972	4 / 15.992																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.781	4 / 15.118	4 / 15.899																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 39.748	10 / 39.748																		
Total		16 / 48.741	2 / 10.080	6 / 18.752	5 / 13.921	0 / 0.000	5 / 13.921	4 / 12.447	3 / 12.566	8 / 14.460	4 / 14.507	14 / 64.838	62 / 210.312																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	16	-	-	1	1	-	3	2	1	-	4	-	1	-	2	-	2	-	2	1	-	-	8	-	-	-	4	-	-	14	62
Out	15	-	-	-	1	-	-	1	1	1	-	4	1	1	1	2	1	-	1	2	1	-	-	1	2	-	8	-	-	18	62
Footnotes: ⁽¹¹⁾ Installation costs across the FYDP vary depending on current port rates - avails not designated with a specific execution port (TBD) have a generic rate for budgeting, and install costs will be updated once an execution port is assigned. Port rates are updated every year by CNRMC based on the forecasted port loading model. Port loading rate forecasts are the rates recommended for all budgeted maintenance and																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0900 / DDG Mod	Modification Number / Title: 5 / DM001 - DDG MODERNIZATION HME (IBNS)
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
organic modernization within a specific port. Individual ship's availability durations vary dependent upon the integration of ship's maintenance and modernization work packages. Large funding increase in FY 18 due to increase in DDG Modernization installations from 2 in FY 17 to 6 in FY 18.		

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0900 / DDG Mod	Modification Number / Title: 6 / DM003 - MK 160 MOD 15 GWS

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	47.096	9.827	15.229	12.020	0.000	12.020	16.347	16.128	20.870	21.453	73.998	232.968
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	47.096	9.827	15.229	12.020	0.000	12.020	16.347	16.128	20.870	21.453	73.998	232.968
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	47.096	9.827	15.229	12.020	0.000	12.020	16.347	16.128	20.870	21.453	73.998	232.968
<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:

Procures MK 160 Mod 15 Gun Weapon System (GWS) that includes equipment procurement, recurring engineering, equipment integration and Integrated Logistics Support (ILS) products for DDG 51 Class ships.

Engineering Services:

Production Support Services are phased over a three (3) year span starting two (2) years prior to installation on a per hull basis. It includes five (5) elements that are related to the production and delivery of a usable end-item: Production Engineering, Quality Assurance, Product Improvement, Acceptance Test and Evaluation, and Contractor Engineering and Technical Services (CETS). Due to the phasing of the requirement over a three year period, engineering services will fluctuate depending on the number of ships in each year.

Five (5) elements and approximate breakdown is as follows:

Production Engineering includes preparation, test and technical evaluation of engineering changes to correct deficiencies in the production items; production configuration control; review and evaluation of production design data and documentation; and logistic supportability efforts.

Quality Assurance includes the preparation of procedures and the conduct of inspections, examinations and test during production that are necessary to deliver an item of the required quality as specified by the terms of the contract.

Product Improvement includes improving reliability/maintainability/availability, and the correction of deficiencies exclusive of contractual specifications.

Acceptance Test and Evaluation of a production item includes preparation of test plans, testing, data analysis, and data evaluation.

Contractor Engineering and Technical Services (CETS) includes the furnishing of advice, instruction, and training by commercial or industrial companies.

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Exhibit P-3a, Individual Modification: PB 2019 Navy								Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0900 / DDG Mod				Modification Number / Title: 6 / DM003 - MK 160 MOD 15 GWS					
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: DM003 - MK 160 MOD 15 GWS													
B Kits													
Recurring													
1.1.1) MK 160 MOD 15 GWS EQUIPMENT - NonOrganic ⁽¹²⁾	9 / 27.501	2 / 6.658	3 / 10.167	2 / 6.900	- / -	2 / 6.900	3 / 10.536	3 / 10.725	4 / 14.559	4 / 14.820	10 / 37.050	40 / 138.916	
Subtotal: Recurring	- / 27.501	- / 6.658	- / 10.167	- / 6.900	- / -	- / 6.900	- / 10.536	- / 10.725	- / 14.559	- / 14.820	- / 37.050	- / 138.916	
Subtotal: DM003 - MK 160 MOD 15 GWS	9 / 27.501	2 / 6.658	3 / 10.167	2 / 6.900	- / -	2 / 6.900	3 / 10.536	3 / 10.725	4 / 14.559	4 / 14.820	10 / 37.050	40 / 138.916	
Subtotal: Procurement, All Modification Items	- / 27.501	- / 6.658	- / 10.167	- / 6.900	- / -	- / 6.900	- / 10.536	- / 10.725	- / 14.559	- / 14.820	- / 37.050	- / 138.916	
Support (All Modification Items)													
2.1) ENGINEERING SERVICES	- / 12.815	- / 1.703	- / 2.549	- / 2.335	- / -	- / 2.335	- / 2.377	- / 2.420	- / 2.464	- / 2.508	- / 13.234	- / 42.405	
Subtotal: Support	- / 12.815	- / 1.703	- / 2.549	- / 2.335	- / -	- / 2.335	- / 2.377	- / 2.420	- / 2.464	- / 2.508	- / 13.234	- / 42.405	
Installation													
Modification Item 1 of 1: DM003 - MK 160 MOD 15 GWS	- / 6.780	- / 1.466	- / 2.513	- / 2.785	- / 0.000	- / 2.785	- / 3.434	- / 2.983	- / 3.847	- / 4.125	- / 23.714	- / 51.647	
Subtotal: Installation	- / 6.780	- / 1.466	- / 2.513	- / 2.785	- / -	- / 2.785	- / 3.434	- / 2.983	- / 3.847	- / 4.125	- / 23.714	- / 51.647	
Total													
Total Cost (Procurement + Support + Installation)	47.096	9.827	15.229	12.020	0.000	12.020	16.347	16.128	20.870	21.453	73.998	232.968	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0900 / DDG Mod										Modification Number / Title: 6 / DM003 - MK 160 MOD 15 GWS																
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:																					
Modification Item 1 of 1: DM003 - MK 160 MOD 15 GWS																															
Manufacturer Information																															
Manufacturer Name: VARIOUS										Manufacturer Location: VARIOUS																					
Administrative Leadtime (in Months): 6										Production Leadtime (in Months): 18																					
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023																								
Contract Dates	Jun 2017	Jul 2018	Jul 2019	Jun 2020	Jun 2021	Mar 2022	May 2023																								
Delivery Dates	Dec 2018	Jan 2020	Jan 2021	Dec 2021	Dec 2022	Sep 2023	Oct 2024																								
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: MK 160 MOD 15 GWS EQUIPMENT																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total																		
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																
Prior Years		6 / 6.780	1 / 1.352	2 / 1.733	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	9 / 9.865																		
FY 2017		- / -	0 / 0.114	0 / 0.611	2 / 1.762	0 / 0.000	2 / 1.762	- / -	- / -	- / -	- / -	0 / 0.000	2 / 2.487																		
FY 2018		- / -	- / -	0 / 0.169	0 / 0.900	0 / 0.000	0 / 0.900	3 / 2.602	- / -	- / -	- / -	0 / 0.000	3 / 3.671																		
FY 2019		- / -	- / -	- / -	0 / 0.123	0 / 0.000	0 / 0.123	0 / 0.653	2 / 1.869	- / -	- / -	0 / 0.000	2 / 2.645																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.179	0 / 0.957	3 / 2.745	- / -	0 / 0.000	3 / 3.881																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.157	0 / 0.836	3 / 2.438	0 / 0.000	3 / 3.431																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.266	0 / 1.422	4 / 4.038	4 / 5.726																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.265	4 / 5.433	4 / 5.698																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 14.243	10 / 14.243																		
Total		6 / 6.780	1 / 1.466	2 / 2.513	2 / 2.785	0 / 0.000	2 / 2.785	3 / 3.434	2 / 2.983	3 / 3.847	3 / 4.125	18 / 23.714	40 / 51.647																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	6	-	-	1	-	-	2	-	-	-	2	-	-	-	2	-	1	-	2	-	-	-	3	-	-	-	3	-	-	18	40
Out	5	-	-	-	1	-	-	-	1	-	-	2	-	-	-	2	-	-	1	1	1	-	-	-	2	-	3	-	-	21	40
Footnotes: ⁽¹²⁾ Installation costs across the FYDP vary depending on current port rates - avails not designated with a specific execution port (TBD) have a generic rate for budgeting, and install costs will be updated once an execution port is assigned. Port rates are updated every year by CNRMC based on the forecasted port loading model. Port loading rate forecasts are the rates recommended for all budgeted maintenance and organic modernization within a specific port. Individual ship's availability durations vary dependent upon the integration of ship's maintenance and modernization work packages.																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy						Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0900 / DDG Mod				Modification Number / Title: 7 / DM004 - AWS UPGRADE			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	339.224	72.953	117.174	97.650	0.000	97.650	132.618	122.995	162.977	168.533	673.700	1,887.824
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	339.224	72.953	117.174	97.650	0.000	97.650	132.618	122.995	162.977	168.533	673.700	1,887.824
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	339.224	72.953	117.174	97.650	0.000	97.650	132.618	122.995	162.977	168.533	673.700	1,887.824
(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:

Procures equipment for the Aegis Weapon System (AWS) Upgrades that includes equipment procurement, recurring engineering, equipment integration and Integrated Logistics Support (ILS) products for DDG 51 Class ships.

Engineering Services:

Production Support Services are phased over a three (3) year span starting two (2) years prior to installation on a per hull basis. It includes five (5) elements that are related to the production and delivery of a usable end-item: Production Engineering, Quality Assurance, Product Improvement, Acceptance Test and Evaluation, and Contractor Engineering and Technical Services (CETS). Due to the phasing of the requirement over a three year period, engineering services will fluctuate depending on the number of ships in each year.

Five (5) elements and approximate breakdown is as follows:

Production Engineering includes preparation, test and technical evaluation of engineering changes to correct deficiencies in the production items; production configuration control; review and evaluation of production design data and documentation; and logistic supportability efforts.

Quality Assurance includes the preparation of procedures and the conduct of inspections, examinations and test during production that are necessary to deliver an item of the required quality as specified by the terms of the contract.

Product Improvement includes improving reliability/maintainability/availability, and the correction of deficiencies exclusive of contractual specifications.

Acceptance Test and Evaluation of a production item includes preparation of test plans, testing, data analysis, and data evaluation.

Contractor Engineering and Technical Services (CETS) includes the furnishing of advice, instruction, and training by commercial or industrial companies.

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Exhibit P-3a, Individual Modification: PB 2019 Navy									Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0900 / DDG Mod					Modification Number / Title: 7 / DM004 - AWS UPGRADE				
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: [No Model Specified]				Modification Type: TBD					Related RDT&E PEs:				
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: DM004 - AWS UPGRADE													
B Kits													
Recurring													
1.1.1) AWS EQUIPMENT - NonOrganic ⁽¹³⁾	9 / 188.822	2 / 41.121	3 / 62.792	2 / 38.884	- / -	2 / 38.884	3 / 59.376	3 / 60.445	4 / 82.044	4 / 83.520	10 / 208.800	40 / 825.804	
<i>Subtotal: Recurring</i>	- / 188.822	- / 41.121	- / 62.792	- / 38.884	- / -	- / 38.884	- / 59.376	- / 60.445	- / 82.044	- / 83.520	- / 208.800	- / 825.804	
<i>Subtotal: DM004 - AWS UPGRADE</i>	9 / 188.822	2 / 41.121	3 / 62.792	2 / 38.884	- / -	2 / 38.884	3 / 59.376	3 / 60.445	4 / 82.044	4 / 83.520	10 / 208.800	40 / 825.804	
<i>Subtotal: Procurement, All Modification Items</i>	- / 188.822	- / 41.121	- / 62.792	- / 38.884	- / -	- / 38.884	- / 59.376	- / 60.445	- / 82.044	- / 83.520	- / 208.800	- / 825.804	
Support (All Modification Items)													
2.1) ENGINEERING SERVICES	- / 15.414	- / 3.284	- / 4.272	- / 3.914	- / -	- / 3.914	- / 3.984	- / 4.056	- / 4.129	- / 4.204	- / 22.180	- / 65.437	
<i>Subtotal: Support</i>	- / 15.414	- / 3.284	- / 4.272	- / 3.914	- / -	- / 3.914	- / 3.984	- / 4.056	- / 4.129	- / 4.204	- / 22.180	- / 65.437	
Installation													
Modification Item 1 of 1: DM004 - AWS UPGRADE	- / 134.988	- / 28.548	- / 50.110	- / 54.852	- / 0.000	- / 54.852	- / 69.258	- / 58.494	- / 76.804	- / 80.809	- / 442.720	- / 996.583	
<i>Subtotal: Installation</i>	- / 134.988	- / 28.548	- / 50.110	- / 54.852	- / -	- / 54.852	- / 69.258	- / 58.494	- / 76.804	- / 80.809	- / 442.720	- / 996.583	
Total													
Total Cost (Procurement + Support + Installation)	339.224	72.953	117.174	97.650	0.000	97.650	132.618	122.995	162.977	168.533	673.700	1,887.824	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0900 / DDG Mod										Modification Number / Title: 7 / DM004 - AWS UPGRADE																
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:																					
Modification Item 1 of 1: DM004 - AWS UPGRADE																															
Manufacturer Information																															
Manufacturer Name: LOCKHEED MARTIN										Manufacturer Location: MOORESTOWN, NJ																					
Administrative Leadtime (in Months): 6										Production Leadtime (in Months): 20																					
Dates	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023						
Contract Dates	Apr 2017				May 2018				May 2019				Apr 2020				Apr 2021				Jan 2022				Mar 2023						
Delivery Dates	Dec 2018				Jan 2020				Jan 2021				Dec 2021				Dec 2022				Sep 2023				Oct 2024						
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: AWS EQUIPMENT																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total																		
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																		
Prior Years		6 / 134.988	1 / 26.428	2 / 36.328	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	9 / 197.744																		
FY 2017		- / -	0 / 2.120	0 / 10.648	2 / 36.883	0 / 0.000	2 / 36.883	- / -	- / -	- / -	- / -	0 / 0.000	2 / 49.651																		
FY 2018		- / -	- / -	0 / 3.134	0 / 15.686	0 / 0.000	0 / 15.686	3 / 54.546	- / -	- / -	- / -	0 / 0.000	3 / 73.366																		
FY 2019		- / -	- / -	- / -	0 / 2.283	0 / 0.000	0 / 2.283	0 / 11.369	2 / 38.917	- / -	- / -	0 / 0.000	2 / 52.569																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	0 / 3.343	0 / 16.651	3 / 57.249	- / -	0 / 0.000	3 / 77.243																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 2.926	0 / 14.576	3 / 51.437	0 / 0.000	3 / 68.939																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 4.979	0 / 24.792	4 / 83.584	4 / 113.355																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 4.580	4 / 99.338	4 / 103.918																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 259.798	10 / 259.798																		
Total		6 / 134.988	1 / 28.548	2 / 50.110	2 / 54.852	0 / 0.000	2 / 54.852	3 / 69.258	2 / 58.494	3 / 76.804	3 / 80.809	18 / 442.720	40 / 996.583																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	6	-	-	1	-	-	2	-	-	-	2	-	-	-	2	-	1	-	2	-	-	-	3	-	-	-	3	-	-	18	40
Out	5	-	-	-	1	-	-	-	1	-	-	2	-	-	-	2	-	-	1	1	1	-	-	-	2	-	3	-	-	21	40
Footnotes: ⁽¹³⁾ Installation costs across the FYDP vary depending on current port rates - avails not designated with a specific execution port (TBD) have a generic rate for budgeting, and install costs will be updated once an execution port is assigned. Port rates are updated every year by CNRMC based on the forecasted port loading model. Port loading rate forecasts are the rates recommended for all budgeted maintenance and organic modernization within a specific port. Individual ship's availability durations vary dependent upon the integration of ship's maintenance and modernization work packages.																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0900 / DDG Mod					Modification Number / Title: 8 / DM005 - MULTI-MISSION SIGPRO		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	189.600	39.251	59.572	44.301	0.000	44.301	64.087	63.427	84.774	86.688	266.538	898.238
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	189.600	39.251	59.572	44.301	0.000	44.301	64.087	63.427	84.774	86.688	266.538	898.238
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	189.600	39.251	59.572	44.301	0.000	44.301	64.087	63.427	84.774	86.688	266.538	898.238
<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: Procures Multi-Mission SIGPRO combat systems that includes equipment procurement, recurring engineering, equipment integration and Integrated Logistics Support (ILS) products for DDG 51 Class ships. Engineering Services: Production Support Services are phased over a three (3) year span starting two (2) years prior to installation on a per hull basis. It includes five (5) elements that are related to the production and delivery of a usable end-item: Production Engineering, Quality Assurance, Product Improvement, Acceptance Test and Evaluation, and Contractor Engineering and Technical Services (CETS). Due to the phasing of the requirement over a three year period, engineering services will fluctuate depending on the number of ships in each year. Five (5) elements and approximate breakdown is as follows: Production Engineering includes preparation, test and technical evaluation of engineering changes to correct deficiencies in the production items; production configuration control; review and evaluation of production design data and documentation; and logistic supportability efforts. Quality Assurance includes the preparation of procedures and the conduct of inspections, examinations and test during production that are necessary to deliver an item of the required quality as specified by the terms of the contract. Product Improvement includes improving reliability/maintainability/availability, and the correction of deficiencies exclusive of contractual specifications. Acceptance Test and Evaluation of a production item includes preparation of test plans, testing, data analysis, and data evaluation. Contractor Engineering and Technical Services (CETS) includes the furnishing of advice, instruction, and training by commercial or industrial companies.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy									Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0900 / DDG Mod					Modification Number / Title: 8 / DM005 - MULTI-MISSION SIGPRO				
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> DM005 - MULTI-MISSION SIGPRO													
B Kits													
Recurring													
1.1.1) MULTI-MISSION SIGPRO EQUIPMENT - NonOrganic ⁽¹⁴⁾	10 / 153.852	2 / 32.098	3 / 49.014	2 / 33.264	- / -	2 / 33.264	3 / 50.794	3 / 51.709	4 / 70.186	4 / 71.449	10 / 178.623	41 / 690.989	
<i>Subtotal: Recurring</i>	- / 153.852	- / 32.098	- / 49.014	- / 33.264	- / -	- / 33.264	- / 50.794	- / 51.709	- / 70.186	- / 71.449	- / 178.623	- / 690.989	
<i>Subtotal: DM005 - MULTI-MISSION SIGPRO</i>	10 / 153.852	2 / 32.098	3 / 49.014	2 / 33.264	- / -	2 / 33.264	3 / 50.794	3 / 51.709	4 / 70.186	4 / 71.449	10 / 178.623	41 / 690.989	
<i>Subtotal: Procurement, All Modification Items</i>	- / 153.852	- / 32.098	- / 49.014	- / 33.264	- / -	- / 33.264	- / 50.794	- / 51.709	- / 70.186	- / 71.449	- / 178.623	- / 690.989	
Support (All Modification Items)													
2.1) ENGINEERING SERVICES	- / 14.463	- / 2.793	- / 2.865	- / 2.625	- / -	- / 2.625	- / 2.672	- / 2.720	- / 2.769	- / 2.819	- / 14.875	- / 48.601	
<i>Subtotal: Support</i>	- / 14.463	- / 2.793	- / 2.865	- / 2.625	- / -	- / 2.625	- / 2.672	- / 2.720	- / 2.769	- / 2.819	- / 14.875	- / 48.601	
Installation													
<i>Modification Item 1 of 1:</i> DM005 - MULTI-MISSION SIGPRO	- / 21.285	- / 4.360	- / 7.693	- / 8.412	- / 0.000	- / 8.412	- / 10.621	- / 8.998	- / 11.819	- / 12.420	- / 73.040	- / 158.648	
<i>Subtotal: Installation</i>	- / 21.285	- / 4.360	- / 7.693	- / 8.412	- / -	- / 8.412	- / 10.621	- / 8.998	- / 11.819	- / 12.420	- / 73.040	- / 158.648	
Total													
Total Cost (Procurement + Support + Installation)	189.600	39.251	59.572	44.301	0.000	44.301	64.087	63.427	84.774	86.688	266.538	898.238	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0900 / DDG Mod										Modification Number / Title: 8 / DM005 - MULTI-MISSION SIGPRO											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: DM005 - MULTI-MISSION SIGPRO																															
Manufacturer Information																															
Manufacturer Name: LOCKHEED MARTIN															Manufacturer Location: MOORESTOWN, NJ																
Administrative Leadtime (in Months): 6															Production Leadtime (in Months): 18																
Dates	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023						
Contract Dates	Jun 2017				Jul 2018				Jul 2019				Jun 2020				Jun 2021				Mar 2022				May 2023						
Delivery Dates	Dec 2018				Jan 2020				Jan 2021				Dec 2021				Dec 2022				Sep 2023				Oct 2024						
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: MULTI-MISSION SIGPRO EQUIPMENT																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total																		
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																
Prior Years		7 / 21.285	1 / 4.017	2 / 5.557	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	10 / 30.859																		
FY 2017		- / -	0 / 0.343	0 / 1.627	2 / 5.647	0 / 0.000	2 / 5.647	- / -	- / -	- / -	- / -	0 / 0.000	2 / 7.617																		
FY 2018		- / -	- / -	0 / 0.509	0 / 2.397	0 / 0.000	0 / 2.397	3 / 8.344	- / -	- / -	- / -	0 / 0.000	3 / 11.250																		
FY 2019		- / -	- / -	- / -	0 / 0.368	0 / 0.000	0 / 0.368	0 / 1.737	2 / 5.982	- / -	- / -	0 / 0.000	2 / 8.087																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.540	0 / 2.544	3 / 8.789	- / -	0 / 0.000	3 / 11.873																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.472	0 / 2.227	3 / 7.832	0 / 0.000	3 / 10.531																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.803	0 / 3.788	4 / 12.912	4 / 17.503																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.800	4 / 16.608	4 / 17.408																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 43.520	10 / 43.520																		
Total		7 / 21.285	1 / 4.360	2 / 7.693	2 / 8.412	0 / 0.000	2 / 8.412	3 / 10.621	2 / 8.998	3 / 11.819	3 / 12.420	18 / 73.040	41 / 158.648																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	-	-	1	-	-	2	-	-	-	2	-	-	-	2	-	1	-	2	-	-	-	-	3	-	-	3	-	-	18	41
Out	6	-	-	-	1	-	-	-	1	-	-	2	-	-	-	2	-	-	1	1	1	-	-	-	2	-	3	-	-	21	41
Footnotes: ⁽¹⁴⁾ Installation costs across the FYDP vary depending on current port rates - avails not designated with a specific execution port (TBD) have a generic rate for budgeting, and install costs will be updated once an execution port is assigned. Port rates are updated every year by CNRMC based on the forecasted port loading model. Port loading rate forecasts are the rates recommended for all budgeted maintenance and organic modernization within a specific port. Individual ship's availability durations vary dependent upon the integration of ship's maintenance and modernization work packages.																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0900 / DDG Mod						Modification Number / Title: 9 / DM006 - MULTI-MISSION SSA/CWI MICROWAVE TUBES		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	9.830	2.095	3.199	2.171	0.000	2.171	3.315	3.375	4.581	4.664	11.660	44.890
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	9.830	2.095	3.199	2.171	0.000	2.171	3.315	3.375	4.581	4.664	11.660	44.890
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	9.830	2.095	3.199	2.171	0.000	2.171	3.315	3.375	4.581	4.664	11.660	44.890
<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: Procures Multi-Mission Solid State Amplifier (SSA)/Continuous Wave Illumination (CWI) Microwave Tubes upgrades for DDG Modernization Program that includes equipment procurement, recurring engineering, equipment integration and Integrated Logistics Support (ILS) products for DDG 51 Class ships.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0900 / DDG Mod						Modification Number / Title: 9 / DM006 - MULTI-MISSION SSA/CWI MICROWAVE TUBES			
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> DM006 - MULTI-MISSION SSA/CWI MICROWAVE TUBES													
B Kits													
Recurring													
1.1.1) MULTI-MISSION SSA/CWI MICROWAVE TUBES EQUIPMENT - Organic ⁽¹⁵⁾	10 / 9.830	2 / 2.095	3 / 3.199	2 / 2.171	- / -	2 / 2.171	3 / 3.315	3 / 3.375	4 / 4.581	4 / 4.664	10 / 11.660	41 / 44.890	
<i>Subtotal: Recurring</i>	- / 9.830	- / 2.095	- / 3.199	- / 2.171	- / -	- / 2.171	- / 3.315	- / 3.375	- / 4.581	- / 4.664	- / 11.660	- / 44.890	
<i>Subtotal: DM006 - MULTI-MISSION SSA/CWI MICROWAVE TUBES</i>	10 / 9.830	2 / 2.095	3 / 3.199	2 / 2.171	- / -	2 / 2.171	3 / 3.315	3 / 3.375	4 / 4.581	4 / 4.664	10 / 11.660	41 / 44.890	
<i>Subtotal: Procurement, All Modification Items</i>	- / 9.830	- / 2.095	- / 3.199	- / 2.171	- / -	- / 2.171	- / 3.315	- / 3.375	- / 4.581	- / 4.664	- / 11.660	- / 44.890	
Installation													
<i>Subtotal: Installation</i>	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	
Total													
Total Cost (Procurement + Support + Installation)	9.830	2.095	3.199	2.171	0.000	2.171	3.315	3.375	4.581	4.664	11.660	44.890	

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Exhibit P-3a, Individual Modification: PB 2019 Navy				Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9		P-1 Line Item Number / Title: 0900 / DDG Mod			Modification Number / Title: 9 / DM006 - MULTI-MISSION SSA/CWI MICROWAVE TUBES		
ID Code (A=Service Ready, B=Not Service Ready) :				MDAP/MAIS Code:			
Modification Item 1 of 1: DM006 - MULTI-MISSION SSA/CWI MICROWAVE TUBES							
Manufacturer Information							
Manufacturer Name: VARIOUS				Manufacturer Location: VARIOUS			
Administrative Leadtime (in Months): 6				Production Leadtime (in Months): 18			
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Contract Dates	Jun 2017	Jul 2018	Jul 2019	Jun 2020	Jun 2021	Mar 2022	May 2023
Delivery Dates	Dec 2018	Jan 2020	Jan 2021	Dec 2021	Dec 2022	Sep 2023	Oct 2024

Footnotes:
(15) Installation costs for this equipment are captured in P40A/DM6IN-Installation.

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy						Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0900 / DDG Mod				Modification Number / Title: 10 / DM007 - SPY-1D TRANSMITTER UPGRADES			

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

Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	47.177	10.331	15.634	10.836	0.000	10.836	11.031	0.903	0.919	0.936	4.938	102.705
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	47.177	10.331	15.634	10.836	0.000	10.836	11.031	0.903	0.919	0.936	4.938	102.705
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	47.177	10.331	15.634	10.836	0.000	10.836	11.031	0.903	0.919	0.936	4.938	102.705

(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:

Procures SPY-1D Transmitter Upgrades combat systems that includes equipment procurement, recurring engineering, equipment integration and Integrated Logistics Support (ILS) products for DDG 51 Class ships.

Engineering Services:

Production Support Services are phased over a three (3) year span starting two (2) years prior to installation on a per hull basis. It includes five (5) elements that are related to the production and delivery of a usable end-item: Production Engineering, Quality Assurance, Product Improvement, Acceptance Test and Evaluation, and Contractor Engineering and Technical Services (CETS). Due to the phasing of the requirement over a three year period, engineering services will fluctuate depending on the number of ships in each year.

Five (5) elements and approximate breakdown is as follows:

Production Engineering includes preparation, test and technical evaluation of engineering changes to correct deficiencies in the production items; production configuration control; review and evaluation of production design data and documentation; and logistic supportability efforts.

Quality Assurance includes the preparation of procedures and the conduct of inspections, examinations and test during production that are necessary to deliver an item of the required quality as specified by the terms of the contract.

Product Improvement includes improving reliability/maintainability/availability, and the correction of deficiencies exclusive of contractual specifications.

Acceptance Test and Evaluation of a production item includes preparation of test plans, testing, data analysis, and data evaluation.

Contractor Engineering and Technical Services (CETS) includes the furnishing of advice, instruction, and training by commercial or industrial companies.

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0900 / DDG Mod						Modification Number / Title: 10 / DM007 - SPY-1D TRANSMITTER UPGRADES			
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: DM007 - SPY-1D TRANSMITTER UPGRADES													
B Kits													
Recurring													
1.1.1) SPY-1D TRANSMITTER UPGRADES EQUIPMENT - Organic ⁽¹⁶⁾	10 / 44.185	2 / 9.616	3 / 14.683	2 / 9.965	- / -	2 / 9.965	2 / 10.144	- / -	- / -	- / -	- / -	19 / 88.593	
<i>Subtotal: Recurring</i>	- / 44.185	- / 9.616	- / 14.683	- / 9.965	- / -	- / 9.965	- / 10.144	- / -	- / -	- / -	- / 0.000	- / 88.593	
<i>Subtotal: DM007 - SPY-1D TRANSMITTER UPGRADES</i>	10 / 44.185	2 / 9.616	3 / 14.683	2 / 9.965	- / -	2 / 9.965	2 / 10.144	- / -	- / -	- / -	- / -	19 / 88.593	
<i>Subtotal: Procurement, All Modification Items</i>	- / 44.185	- / 9.616	- / 14.683	- / 9.965	- / -	- / 9.965	- / 10.144	- / -	- / -	- / -	- / 0.000	- / 88.593	
Support (All Modification Items)													
2.1) ENGINEERING SERVICES	- / 2.992	- / 0.715	- / 0.951	- / 0.871	- / -	- / 0.871	- / 0.887	- / 0.903	- / 0.919	- / 0.936	- / 4.938	- / 14.112	
<i>Subtotal: Support</i>	- / 2.992	- / 0.715	- / 0.951	- / 0.871	- / -	- / 0.871	- / 0.887	- / 0.903	- / 0.919	- / 0.936	- / 4.938	- / 14.112	
Installation													
<i>Subtotal: Installation</i>	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	
Total													
Total Cost (Procurement + Support + Installation)	47.177	10.331	15.634	10.836	0.000	10.836	11.031	0.903	0.919	0.936	4.938	102.705	

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Exhibit P-3a, Individual Modification: PB 2019 Navy					Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9			P-1 Line Item Number / Title: 0900 / DDG Mod			Modification Number / Title: 10 / DM007 - SPY-1D TRANSMITTER UPGRADES	
ID Code (A=Service Ready, B=Not Service Ready) :					MDAP/MAIS Code:		
Modification Item 1 of 1: DM007 - SPY-1D TRANSMITTER UPGRADES							
Manufacturer Information							
Manufacturer Name: Raytheon					Manufacturer Location: Marlborough, MA		
Administrative Leadtime <i>(in Months)</i> : 6					Production Leadtime <i>(in Months)</i> : 18		
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Contract Dates	Jun 2017	Jul 2018	Jul 2019	Jun 2020	Jun 2021		
Delivery Dates	Dec 2018	Jan 2020	Jan 2021	Dec 2022	Dec 2022		
Footnotes: ⁽¹⁶⁾ SPY-1D Transmitter Upgrades aren't required for DDG 91 and follow. Installation costs for this equipment are captured in P40A/DM6IN-Installation.							

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0900 / DDG Mod					Modification Number / Title: 11 / DM008 - MULTI-MISSION BMD CAPABILITY		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	16.940	3.482	5.317	3.608	0.000	3.608	5.510	5.609	7.613	7.750	19.375	75.204
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	16.940	3.482	5.317	3.608	0.000	3.608	5.510	5.609	7.613	7.750	19.375	75.204
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	16.940	3.482	5.317	3.608	0.000	3.608	5.510	5.609	7.613	7.750	19.375	75.204
<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: Procures Multi-Mission Ballistic Missile Defense (BMD) Capability combat systems that includes equipment procurement, recurring engineering, equipment integration and Integrated Logistics Support (ILS) products for DDG 51 Class ships.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0900 / DDG Mod						Modification Number / Title: 11 / DM008 - MULTI-MISSION BMD CAPABILITY			
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> DM008 - MULTI-MISSION BMD CAPABILITY													
B Kits													
Recurring													
1.1.1) MULTI-MISSION BMD EQUIPMENT - Organic (17)	10 / 16.940	2 / 3.482	3 / 5.317	2 / 3.608	- / -	2 / 3.608	3 / 5.510	3 / 5.609	4 / 7.613	4 / 7.750	10 / 19.375	41 / 75.204	
<i>Subtotal: Recurring</i>	- / 16.940	- / 3.482	- / 5.317	- / 3.608	- / -	- / 3.608	- / 5.510	- / 5.609	- / 7.613	- / 7.750	- / 19.375	- / 75.204	
<i>Subtotal: DM008 - MULTI-MISSION BMD CAPABILITY</i>	10 / 16.940	2 / 3.482	3 / 5.317	2 / 3.608	- / -	2 / 3.608	3 / 5.510	3 / 5.609	4 / 7.613	4 / 7.750	10 / 19.375	41 / 75.204	
<i>Subtotal: Procurement, All Modification Items</i>	- / 16.940	- / 3.482	- / 5.317	- / 3.608	- / -	- / 3.608	- / 5.510	- / 5.609	- / 7.613	- / 7.750	- / 19.375	- / 75.204	
Installation													
<i>Subtotal: Installation</i>	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	
Total													
Total Cost (Procurement + Support + Installation)	16.940	3.482	5.317	3.608	0.000	3.608	5.510	5.609	7.613	7.750	19.375	75.204	

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Exhibit P-3a, Individual Modification: PB 2019 Navy				Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9		P-1 Line Item Number / Title: 0900 / DDG Mod			Modification Number / Title: 11 / DM008 - MULTI-MISSION BMD CAPABILITY		
ID Code (A=Service Ready, B=Not Service Ready) :				MDAP/MAIS Code:			
Modification Item 1 of 1: DM008 - MULTI-MISSION BMD CAPABILITY							
Manufacturer Information							
Manufacturer Name: LOCKHEED MARTIN				Manufacturer Location: MOORESTOWN, NJ			
Administrative Leadtime (in Months): 6				Production Leadtime (in Months): 18			
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Contract Dates	Jun 2017	Jul 2018	Jul 2019	Jun 2020	Jun 2021	Mar 2022	May 2023
Delivery Dates	Dec 2018	Jan 2020	Jan 2021	Dec 2021	Dec 2022	Sep 2023	Oct 2024

Footnotes:
(17) Installation costs for this equipment are captured in P40A/DM6IN-Installation.

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Exhibit P-3a, Individual Modification: PB 2019 Navy									Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0900 / DDG Mod					Modification Number / Title: 12 / DM009 - VLS UPGRADES			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	85.206	18.329	25.990	20.723	0.000	20.723	27.586	27.251	34.754	35.612	126.745	402.196
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	85.206	18.329	25.990	20.723	0.000	20.723	27.586	27.251	34.754	35.612	126.745	402.196
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	85.206	18.329	25.990	20.723	0.000	20.723	27.586	27.251	34.754	35.612	126.745	402.196
(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: Procures Vertical Launch System (VLS) Modifications, Evolved Sea Sparrow Missile VLS Modifications, SM3 Operability Heating Ventilation Air Conditioning (HVAC) and VLS MODS for SM3 Block 3 combat systems that includes equipment procurement, recurring engineering, equipment integration and Integrated Logistics Support (ILS) products for DDG 51 Class ships.												
Engineering Services: Production Support Services are phased over a three (3) year span starting two (2) years prior to installation on a per hull basis. It includes five (5) elements that are related to the production and delivery of a usable end-item: Production Engineering, Quality Assurance, Product Improvement, Acceptance Test and Evaluation, and Contractor Engineering and Technical Services (CETS). Due to the phasing of the requirement over a three year period, engineering services will fluctuate depending on the number of ships in each year. Five (5) elements and approximate breakdown is as follows: Production Engineering includes preparation, test and technical evaluation of engineering changes to correct deficiencies in the production items; production configuration control; review and evaluation of production design data and documentation; and logistic supportability efforts. Quality Assurance includes the preparation of procedures and the conduct of inspections, examinations and test during production that are necessary to deliver an item of the required quality as specified by the terms of the contract. Product Improvement includes improving reliability/maintainability/availability, and the correction of deficiencies exclusive of contractual specifications. Acceptance Test and Evaluation of a production item includes preparation of test plans, testing, data analysis, and data evaluation. Contractor Engineering and Technical Services (CETS) includes the furnishing of advice, instruction, and training by commercial or industrial companies. [VLS EQUIPMENT] Engineering services increase in FY 18 due to increased number of Combat System availabilities in FY 20.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0900 / DDG Mod						Modification Number / Title: 12 / DM009 - VLS UPGRADES			
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: DM009 - VLS UPGRADES													
B Kits													
Recurring													
1.1.1) VLS EQUIPMENT - NonOrganic ⁽¹⁸⁾	9 / 53.727	2 / 10.471	3 / 15.989	2 / 10.851	- / -	2 / 10.851	3 / 16.570	3 / 16.868	4 / 22.896	4 / 23.308	10 / 58.270	40 / 228.950	
<i>Subtotal: Recurring</i>	- / 53.727	- / 10.471	- / 15.989	- / 10.851	- / -	- / 10.851	- / 16.570	- / 16.868	- / 22.896	- / 23.308	- / 58.270	- / 228.950	
<i>Subtotal: DM009 - VLS UPGRADES</i>	9 / 53.727	2 / 10.471	3 / 15.989	2 / 10.851	- / -	2 / 10.851	3 / 16.570	3 / 16.868	4 / 22.896	4 / 23.308	10 / 58.270	40 / 228.950	
<i>Subtotal: Procurement, All Modification Items</i>	- / 53.727	- / 10.471	- / 15.989	- / 10.851	- / -	- / 10.851	- / 16.570	- / 16.868	- / 22.896	- / 23.308	- / 58.270	- / 228.950	
Support (All Modification Items)													
2.1) ENGINEERING SERVICES	- / 20.689	- / 5.656	- / 6.158	- / 5.642	- / -	- / 5.642	- / 5.743	- / 5.847	- / 5.952	- / 6.059	- / 31.971	- / 93.717	
<i>Subtotal: Support</i>	- / 20.689	- / 5.656	- / 6.158	- / 5.642	- / -	- / 5.642	- / 5.743	- / 5.847	- / 5.952	- / 6.059	- / 31.971	- / 93.717	
Installation													
Modification Item 1 of 1: DM009 - VLS UPGRADES	- / 10.790	- / 2.202	- / 3.843	- / 4.230	- / 0.000	- / 4.230	- / 5.273	- / 4.536	- / 5.906	- / 6.245	- / 36.504	- / 79.529	
<i>Subtotal: Installation</i>	- / 10.790	- / 2.202	- / 3.843	- / 4.230	- / -	- / 4.230	- / 5.273	- / 4.536	- / 5.906	- / 6.245	- / 36.504	- / 79.529	
Total													
Total Cost (Procurement + Support + Installation)	85.206	18.329	25.990	20.723	0.000	20.723	27.586	27.251	34.754	35.612	126.745	402.196	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0900 / DDG Mod										Modification Number / Title: 12 / DM009 - VLS UPGRADES																
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:																					
Modification Item 1 of 1: DM009 - VLS UPGRADES																															
Manufacturer Information																															
Manufacturer Name: LOCKHEED MARTIN										Manufacturer Location: MOORESTOWN, NJ																					
Administrative Leadtime (<i>in Months</i>): 6										Production Leadtime (<i>in Months</i>): 18																					
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023																								
Contract Dates	Jun 2017	Jul 2018	Jul 2019	Jul 2020	Mar 2021	Mar 2022	May 2023																								
Delivery Dates	Dec 2018	Jan 2020	Jan 2021	Dec 2021	Sep 2023	Sep 2023	Oct 2024																								
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: VLS EQUIPMENT																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total																		
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																	
Prior Years		6 / 10.790	1 / 2.023	2 / 2.704	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	9 / 15.517																		
FY 2017		- / -	0 / 0.179	0 / 0.873	2 / 2.751	0 / 0.000	2 / 2.751	- / -	- / -	- / -	- / -	0 / 0.000	2 / 3.803																		
FY 2018		- / -	- / -	0 / 0.266	0 / 1.286	0 / 0.000	0 / 1.286	3 / 4.059	- / -	- / -	- / -	0 / 0.000	3 / 5.611																		
FY 2019		- / -	- / -	- / -	0 / 0.193	0 / 0.000	0 / 0.193	0 / 0.932	2 / 2.924	- / -	- / -	0 / 0.000	2 / 4.049																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.282	0 / 1.365	3 / 4.290	- / -	0 / 0.000	3 / 5.937																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.247	0 / 1.194	3 / 3.795	0 / 0.000	3 / 5.236																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.422	0 / 2.032	4 / 6.336	4 / 8.790																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.418	4 / 8.321	4 / 8.739																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 21.847	10 / 21.847																		
Total		6 / 10.790	1 / 2.202	2 / 3.843	2 / 4.230	0 / 0.000	2 / 4.230	3 / 5.273	2 / 4.536	3 / 5.906	3 / 6.245	18 / 36.504	40 / 79.529																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	6	-	-	1	-	-	2	-	-	-	2	-	-	-	2	-	1	-	2	-	-	-	-	3	-	-	3	-	-	18	40
Out	5	-	-	-	1	-	-	-	1	-	-	2	-	-	-	2	-	-	1	1	1	-	-	-	2	-	-	3	-	21	40
Footnotes: ⁽¹⁸⁾ Installation costs across the FYDP vary depending on current port rates - avails not designated with a specific execution port (TBD) have a generic rate for budgeting, and install costs will be updated once an execution port is assigned. Port rates are updated every year by CNRMC based on the forecasted port loading model. Port loading rate forecasts are the rates recommended for all budgeted maintenance and organic modernization within a specific port. Individual ship's availability durations vary dependent upon the integration of ship's maintenance and modernization work packages.																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy						Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0900 / DDG Mod				Modification Number / Title: 13 / DM010 - FCS STAMO			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	14.843	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	14.843
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	14.843	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	14.843
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	14.843	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	14.843
(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:

Procures Stabilized Master Oscillator (STAMO) combat systems that include equipment procurement, recurring engineering, equipment integration and Integrated Logistics Support (ILS) products for DDG 51 Class ships.

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0900 / DDG Mod										Modification Number / Title: 13 / DM010 - FCS STAMO																
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:																					
Modification Item 1 of 1: DM010 - FCS STAMO																															
Manufacturer Information																															
Manufacturer Name: Raytheon										Manufacturer Location: Marlborough, MA																					
Administrative Leadtime (in Months): 6										Production Leadtime (in Months): 18																					
Dates	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023						
Contract Dates																															
Delivery Dates																															
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: FCS STAMO EQUIPMENT																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total																		
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																		
Prior Years		6 / 2.100	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	6 / 2.100																		
FY 2017		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		6 / 2.100	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	6 / 2.100																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
Out	5	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
Footnotes: ⁽¹⁹⁾ STAMO has previously been installed on all DDG Flight IIA's, i.e. DDG 79 and follow previously received STAMO. Installation costs across the FYDP may vary depending on current port rates. Port rates are updated every year by a CNRMC letter based on the forecasted port loading model. Port loading rate forecasts are the rates recommended for all budgeted maintenance and organic modernization within a specific port. Individual ship's availability durations vary dependent upon the integration of ship's maintenance and modernization work packages.																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0900 / DDG Mod	Modification Number / Title: 14 / DM011 - AN/SQQ-89 A(V15)

ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	120.350	13.185	10.859	5.908	0.000	5.908	11.384	12.750	8.147	7.087	16.709	206.379
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	120.350	13.185	10.859	5.908	0.000	5.908	11.384	12.750	8.147	7.087	16.709	206.379
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	120.350	13.185	10.859	5.908	0.000	5.908	11.384	12.750	8.147	7.087	16.709	206.379
<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:

Procures improved AN/SQQ-89 A(V)15 with Multi-Functional Towed Array (MFTA) combat systems to replace the installed MIL-STD AN/SQQ-89(V) that includes equipment procurement, recurring engineering, equipment integration and Integrated Logistics Support (ILS) products for DDG 51 Class ships. Flight IIA DDGs have previously received an SQQ-89(A)V15 installation.

Engineering Services:

Production Support Services are phased over a three (3) year span starting two (2) years prior to installation on a per hull basis. It includes five (5) elements that are related to the production and delivery of a usable end-item: Production Engineering, Quality Assurance, Product Improvement, Acceptance Test and Evaluation, and Contractor Engineering and Technical Services (CETS). Due to the phasing of the requirement over a three year period, engineering services will fluctuate depending on the number of ships in each year.

Five (5) elements and approximate breakdown is as follows:

Production Engineering includes preparation, test and technical evaluation of engineering changes to correct deficiencies in the production items; production configuration control; review and evaluation of production design data and documentation; and logistic supportability efforts.

Quality Assurance includes the preparation of procedures and the conduct of inspections, examinations and test during production that are necessary to deliver an item of the required quality as specified by the terms of the contract.

Product Improvement includes improving reliability/maintainability/availability, and the correction of deficiencies exclusive of contractual specifications.

Acceptance Test and Evaluation of a production item includes preparation of test plans, testing, data analysis, and data evaluation.

Contractor Engineering and Technical Services (CETS) includes the furnishing of advice, instruction, and training by commercial or industrial companies.

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Exhibit P-3a, Individual Modification: PB 2019 Navy									Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0900 / DDG Mod					Modification Number / Title: 14 / DM011 - AN/SQQ-89 A(V15)				
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: DM011 - AN/SQQ-89 A(V15)													
B Kits													
Recurring													
1.1.1) AN/SQQ-89 EQUIPMENT A(V15) - NonOrganic (20)	9 / 69.110	1 / 7.985	- / -	- / -	- / -	- / -	1 / 8.424	1 / 8.576	- / -	- / -	- / -	12 / 94.095	
Subtotal: Recurring	- / 69.110	- / 7.985	- / -	- / -	- / -	- / -	- / 8.424	- / 8.576	- / -	- / -	- / 0.000	- / 94.095	
Subtotal: DM011 - AN/SQQ-89 A(V15)	9 / 69.110	1 / 7.985	- / -	- / -	- / -	- / -	1 / 8.424	1 / 8.576	- / -	- / -	- / -	12 / 94.095	
Subtotal: Procurement, All Modification Items	- / 69.110	- / 7.985	- / -	- / -	- / -	- / -	- / 8.424	- / 8.576	- / -	- / -	- / 0.000	- / 94.095	
Support (All Modification Items)													
2.1) ENGINEERING SERVICES	- / 18.931	- / 2.845	- / 2.896	- / 2.654	- / -	- / 2.654	- / 2.702	- / 2.750	- / 2.800	- / 2.850	- / 16.709	- / 55.137	
Subtotal: Support	- / 18.931	- / 2.845	- / 2.896	- / 2.654	- / -	- / 2.654	- / 2.702	- / 2.750	- / 2.800	- / 2.850	- / 16.709	- / 55.137	
Installation													
Modification Item 1 of 1: DM011 - AN/SQQ-89 A(V15)	- / 32.309	- / 2.355	- / 7.963	- / 3.254	- / 0.000	- / 3.254	- / 0.258	- / 1.424	- / 5.347	- / 4.237	- / 0.000	- / 57.147	
Subtotal: Installation	- / 32.309	- / 2.355	- / 7.963	- / 3.254	- / -	- / 3.254	- / 0.258	- / 1.424	- / 5.347	- / 4.237	- / 0.000	- / 57.147	
Total													
Total Cost (Procurement + Support + Installation)	120.350	13.185	10.859	5.908	0.000	5.908	11.384	12.750	8.147	7.087	16.709	206.379	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0900 / DDG Mod					Modification Number / Title: 14 / DM011 - AN/SQQ-89 A(V15)																					
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:																					
Modification Item 1 of 1: DM011 - AN/SQQ-89 A(V15)																															
Manufacturer Information																															
Manufacturer Name: Lockheed Martin										Manufacturer Location: Syracuse, NY																					
Administrative Leadtime (in Months): 6										Production Leadtime (in Months): 18																					
Dates		FY 2017		FY 2018		FY 2019		FY 2020		FY 2021		FY 2022		FY 2023																	
Contract Dates		Dec 2017						Jul 2020		Jun 2021																					
Delivery Dates		Jun 2019						Jan 2022		Dec 2022																					
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: AN/SQQ-89 EQUIPMENT A(V15)																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 / 32.309	0 / 2.133	2 / 7.085	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	9 / 41.527																		
FY 2017		- / -	0 / 0.222	0 / 0.878	1 / 3.254	0 / 0.000	1 / 3.254	- / -	- / -	- / -	- / -	0 / 0.000	1 / 4.354																		
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.258	0 / 1.161	1 / 4.163	- / -	0 / 0.000	1 / 5.582																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.263	0 / 1.184	1 / 4.237	0 / 0.000	1 / 5.684																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		7 / 32.309	0 / 2.355	2 / 7.963	1 / 3.254	0 / 0.000	1 / 3.254	0 / 0.258	0 / 1.424	1 / 5.347	1 / 4.237	0 / 0.000	12 / 57.147																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	-	-	-	-	-	-	1	1	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	12
Out	7	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	1	12
Footnotes:																															
(20) Flight IIA DDGs have previously received an SQQ-89(A)V15 installation. Installation costs across the FYDP vary depending on current port rates - avails not designated with a specific execution port (TBD) have a generic rate for budgeting, and install costs will be updated once an execution port is assigned. Port rates are updated every year by CNRMC based on the forecasted port loading model. Port loading rate forecasts are the rates recommended for all budgeted maintenance and organic modernization within a specific port. Individual ship's availability durations vary dependent upon the integration of ship's maintenance and modernization work packages.																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0900 / DDG Mod	Modification Number / Title: 15 / DM012 - CEC

ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	42.143	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	42.143
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	42.143	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	42.143
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	42.143	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	42.143
<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:

Procures Cooperative Engagement Capability (CEC) combat systems that includes equipment procurement, recurring engineering, equipment integration and Integrated Logistics Support (ILS) products for DDG 51 Class ships. Flight IIA DDGs have previously received CEC installation.

Engineering Services:

Production Support Services are phased over a three (3) year span starting two (2) years prior to installation on a per hull basis. It includes five (5) elements that are related to the production and delivery of a usable end-item: Production Engineering, Quality Assurance, Product Improvement, Acceptance Test and Evaluation, and Contractor Engineering and Technical Services (CETS). Due to the phasing of the requirement over a three year period, engineering services will fluctuate depending on the number of ships in each year.

Five (5) elements and approximate breakdown is as follows:

Production Engineering includes preparation, test and technical evaluation of engineering changes to correct deficiencies in the production items; production configuration control; review and evaluation of production design data and documentation; and logistic supportability efforts.

Quality Assurance includes the preparation of procedures and the conduct of inspections, examinations and test during production that are necessary to deliver an item of the required quality as specified by the terms of the contract.

Product Improvement includes improving reliability/maintainability/availability, and the correction of deficiencies exclusive of contractual specifications.

Acceptance Test and Evaluation of a production item includes preparation of test plans, testing, data analysis, and data evaluation.

Contractor Engineering and Technical Services (CETS) includes the furnishing of advice, instruction, and training by commercial or industrial companies.

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0900 / DDG Mod						Modification Number / Title: 15 / DM012 - CEC			
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> DM012 - CEC													
B Kits													
Recurring													
1.1.1) CEC EQUIPMENT - NonOrganic	6 / 26.790	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 26.790	
<i>Subtotal: Recurring</i>	- / 26.790	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 26.790	
<i>Subtotal: DM012 - CEC</i>	6 / 26.790	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 26.790	
<i>Subtotal: Procurement, All Modification Items</i>	- / 26.790	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 26.790	
Support (All Modification Items)													
2.1) ENGINEERING SERVICES	- / 1.362	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.362	
<i>Subtotal: Support</i>	- / 1.362	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 1.362	
Installation													
<i>Modification Item 1 of 1:</i> DM012 - CEC	- / 13.991	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 13.991	
<i>Subtotal: Installation</i>	- / 13.991	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 13.991	
Total													
Total Cost (Procurement + Support + Installation)	42.143	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	42.143	

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Exhibit P-3a, Individual Modification: PB 2019 Navy											Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9											P-1 Line Item Number / Title: 0900 / DDG Mod											Modification Number / Title: 15 / DM012 - CEC										
ID Code (A=Service Ready, B=Not Service Ready) :											MDAP/MAIS Code:																					
Modification Item 1 of 1: DM012 - CEC																																
Manufacturer Information																																
Manufacturer Name: Raytheon													Manufacturer Location: St. Petersburg, FL																			
Administrative Leadtime <i>(in Months)</i> : 6													Production Leadtime <i>(in Months)</i> : 18																			
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023						
Contract Dates																																
Delivery Dates																																
Installation Information																																
Method of Implementation: [none specified]:: Installation Name: CEC EQUIPMENT																																
Installation Cost		Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		To Complete		Total									
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)									
Prior Years		6 / 13.991		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		6 / 13.991								
FY 2017		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
Total		6 / 13.991		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		6 / 13.991								
Installation Schedule																																
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot	
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
In	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	
Out	5	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0900 / DDG Mod					Modification Number / Title: 16 / DM013 - (1 MC/DIAS UPGRADE)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	0.000	16.936	12.975	0.000	12.975	12.219	12.761	16.387	13.621	40.968	125.867
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	0.000	16.936	12.975	0.000	12.975	12.219	12.761	16.387	13.621	40.968	125.867
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	0.000	16.936	12.975	0.000	12.975	12.219	12.761	16.387	13.621	40.968	125.867
<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: Procures the Dynalec Integrated Announcing System (DIAS) that replaces the ship's existing obsolete and unreliable general announcing system, that enables key control stations to publish critical information to the ship by voice. Integrated Logistics Support includes development of ILS documentation, review and certification. Environmental Quality Testing includes Shock, Vibration and EMI certification to ensure DIAS meets survivability requirements.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy									Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0900 / DDG Mod					Modification Number / Title: 16 / DM013 - (1 MC/DIAS UPGRADE)				
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: [No Model Specified]				Modification Type: TBD					Related RDT&E PEs:				
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> DM013 - (1 MC/DIAS UPGRADE)													
B Kits													
Recurring													
1.1.1) 1 MC/DIAS EQUIPMENT - NonOrganic ⁽²¹⁾	6 / 0.000	5 / 0.000	4 / 1.168	3 / 0.892	- / -	3 / 0.892	4 / 1.210	4 / 1.232	4 / 1.254	4 / 1.277	10 / 3.193	44 / 10.226	
<i>Subtotal: Recurring</i>	- / 0.000	- / -	- / 1.168	- / 0.892	- / -	- / 0.892	- / 1.210	- / 1.232	- / 1.254	- / 1.277	- / 3.193	- / 10.226	
<i>Subtotal: DM013 - (1 MC/DIAS UPGRADE)</i>	6 / 0.000	5 / 0.000	4 / 1.168	3 / 0.892	- / -	3 / 0.892	4 / 1.210	4 / 1.232	4 / 1.254	4 / 1.277	10 / 3.193	44 / 10.226	
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.000	- / -	- / 1.168	- / 0.892	- / -	- / 0.892	- / 1.210	- / 1.232	- / 1.254	- / 1.277	- / 3.193	- / 10.226	
Installation													
<i>Modification Item 1 of 1:</i> DM013 - (1 MC/DIAS UPGRADE)													
	- / 0.000	- / 0.000	- / 15.768	- / 12.083	- / 0.000	- / 12.083	- / 11.009	- / 11.529	- / 15.133	- / 12.344	- / 37.775	- / 115.641	
<i>Subtotal: Installation</i>	- / 0.000	- / -	- / 15.768	- / 12.083	- / -	- / 12.083	- / 11.009	- / 11.529	- / 15.133	- / 12.344	- / 37.775	- / 115.641	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	16.936	12.975	0.000	12.975	12.219	12.761	16.387	13.621	40.968	125.867	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0900 / DDG Mod										Modification Number / Title: 16 / DM013 - (1 MC/DIAS UPGRADE)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: DM013 - (1 MC/DIAS UPGRADE)																															
Manufacturer Information																															
Manufacturer Name: Spawar Systems Center Atlantic															Manufacturer Location: Charleston, SC																
Administrative Leadtime (in Months): 6															Production Leadtime (in Months): 16																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates						Jul 2018				Jul 2019				Jul 2020				Jul 2021				Jul 2022				Jul 2023					
Delivery Dates						Nov 2019				Nov 2020				Nov 2021				Nov 2022				Nov 2023				Nov 2024					
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: 1 MC/DIAS EQUIPMENT																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		- / -		- / -		6 / 12.291		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		6 / 12.291					
FY 2017		- / -		- / -		0 / 2.929		5 / 8.856		0 / 0.000		5 / 8.856		- / -		- / -		- / -		- / -		- / -		0 / 0.000		5 / 11.785					
FY 2018		- / -		- / -		0 / 0.548		0 / 2.748		0 / 0.000		0 / 2.748		4 / 7.765		- / -		- / -		- / -		- / -		0 / 0.000		4 / 11.061					
FY 2019		- / -		- / -		- / -		0 / 0.479		0 / 0.000		0 / 0.479		0 / 2.434		3 / 6.848		- / -		- / -		- / -		0 / 0.000		3 / 9.761					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.810		0 / 4.106		4 / 11.537		- / -		- / -		0 / 0.000		4 / 16.453					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.575		0 / 2.916		4 / 8.223		0 / 0.000		4 / 11.714							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.680		0 / 3.446		4 / 9.677		4 / 13.803							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.675		4 / 13.048		4 / 13.723							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		10 / 15.050		10 / 15.050					
Total		- / -		- / -		6 / 15.768		5 / 12.083		0 / 0.000		5 / 12.083		4 / 11.009		3 / 11.529		4 / 15.133		4 / 12.344		18 / 37.775		44 / 115.641							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	3	2	1	-	4	-	1	-	2	-	2	-	2	1	-	-	4	-	-	-	4	-	-	18	44
Out	-	-	-	-	-	-	-	-	-	1	-	4	1	1	1	2	1	-	1	2	1	-	-	1	2	-	4	-	-	22	44
Footnotes: ⁽²¹⁾ Installation costs across the FYDP vary depending on current port rates - avails not designated with a specific execution port (TBD) have a generic rate for budgeting, and install costs will be updated once an execution port is assigned. Port rates are updated every year by CNRMC based on the forecasted port loading model. Port loading rate forecasts are the rates recommended for all budgeted maintenance and organic modernization within a specific port. Individual ship's availability durations vary dependent upon the integration of ship's maintenance and modernization work packages. Procurement costs for FY 16 &																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0900 / DDG Mod	Modification Number / Title: 16 / DM013 - (1 MC/DIAS UPGRADE)
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
FY 17 are shown in Conjunctive Alteration Definition and Integration P40-A. Installation cost for FY 16 & FY 17 are shown in DM6IN Installation P40-A. All cost from FY 18 and follows will be captured in this P3-A exhibit.		

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Exhibit P-3a, Individual Modification: PB 2019 Navy						Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0900 / DDG Mod				Modification Number / Title: 17 / DM013 - (MORIAH WIND SYSTEM)			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	0.000	0.000	7.065	5.304	0.000	5.304	5.189	5.535	5.901	5.684	14.241	48.919
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	0.000	0.000	7.065	5.304	0.000	5.304	5.189	5.535	5.901	5.684	14.241	48.919
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	0.000	0.000	7.065	5.304	0.000	5.304	5.189	5.535	5.901	5.684	14.241	48.919
(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:

Procures the Moriah Wind System (MWS) that provides DDGs with a digital wind speed and directional information to support safe execution of air, combat and casualty operations.

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0900 / DDG Mod						Modification Number / Title: 17 / DM013 - (MORIAH WIND SYSTEM)			
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> DM013 - (MORIAH WIND SYSTEM)													
B Kits													
Recurring													
1.1.1) MORIAH WIND SYSTEM EQUIPMENT - NonOrganic ⁽²²⁾	6 / 0.000	5 / 0.000	4 / 1.211	3 / 0.924	- / -	3 / 0.924	4 / 1.255	4 / 1.277	4 / 1.300	3 / 0.993	10 / 3.310	43 / 10.270	
<i>Subtotal: Recurring</i>	- / 0.000	- / -	- / 1.211	- / 0.924	- / -	- / 0.924	- / 1.255	- / 1.277	- / 1.300	- / 0.993	- / 3.310	- / 10.270	
<i>Subtotal: DM013 - (MORIAH WIND SYSTEM)</i>	6 / 0.000	5 / 0.000	4 / 1.211	3 / 0.924	- / -	3 / 0.924	4 / 1.255	4 / 1.277	4 / 1.300	3 / 0.993	10 / 3.310	43 / 10.270	
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.000	- / -	- / 1.211	- / 0.924	- / -	- / 0.924	- / 1.255	- / 1.277	- / 1.300	- / 0.993	- / 3.310	- / 10.270	
Installation													
<i>Modification Item 1 of 1:</i> DM013 - (MORIAH WIND SYSTEM)	- / 0.000	- / 0.000	- / 5.854	- / 4.380	- / 0.000	- / 4.380	- / 3.934	- / 4.258	- / 4.601	- / 4.691	- / 10.931	- / 38.649	
<i>Subtotal: Installation</i>	- / 0.000	- / -	- / 5.854	- / 4.380	- / -	- / 4.380	- / 3.934	- / 4.258	- / 4.601	- / 4.691	- / 10.931	- / 38.649	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	7.065	5.304	0.000	5.304	5.189	5.535	5.901	5.684	14.241	48.919	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0900 / DDG Mod										Modification Number / Title: 17 / DM013 - (MORIAH WIND SYSTEM)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: DM013 - (MORIAH WIND SYSTEM)																															
Manufacturer Information																															
Manufacturer Name: NAWCAD LAKEHURST															Manufacturer Location: LAKEHURST, NEW JERSEY																
Administrative Leadtime (<i>in Months</i>): 6															Production Leadtime (<i>in Months</i>): 16																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates						Jul 2018				Jul 2019				Jul 2020				Jul 2021				May 2022				Jul 2023					
Delivery Dates						Nov 2019				Nov 2020				Nov 2021				Nov 2022				Sep 2023				Nov 2024					
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: MORIAH WIND SYSTEM EQUIPMENT																															
Installation Cost		Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		To Complete		Total								
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)								
Prior Years		- / -	- / -		6 / 2.949		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		6 / 2.949								
FY 2017		- / -	- / -		0 / 2.695		5 / 2.131		0 / 0.000		5 / 2.131		- / -		- / -		- / -		- / -		0 / 0.000		5 / 4.826								
FY 2018		- / -	- / -		0 / 0.210		0 / 2.066		0 / 0.000		0 / 2.066		4 / 1.863		- / -		- / -		- / -		0 / 0.000		4 / 4.139								
FY 2019		- / -	- / -		- / -		0 / 0.183		0 / 0.000		0 / 0.183		0 / 1.830		3 / 1.644		- / -		- / -		0 / 0.000		3 / 3.657								
FY 2020		- / -	- / -		- / -		- / -		- / -		- / -		0 / 0.241		0 / 2.394		4 / 2.150		- / -		0 / 0.000		4 / 4.785								
FY 2021		- / -	- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.220		0 / 2.192		4 / 1.973		0 / 0.000		4 / 4.385								
FY 2022		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.259		4 / 2.589		0 / 2.322		4 / 5.170								
FY 2023		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.129		3 / 2.439		3 / 2.568								
To Complete		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		10 / 6.170		10 / 6.170								
Total		- / -	- / -		6 / 5.854		5 / 4.380		0 / 0.000		5 / 4.380		4 / 3.934		3 / 4.258		4 / 4.601		8 / 4.691		13 / 10.931		43 / 38.649								
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	3	2	1	-	4	-	1	-	2	-	2	-	2	1	-	-	4	-	-	-	8	-	-	13	43
Out	-	-	-	-	-	-	-	-	-	1	-	4	1	1	1	2	1	-	1	2	1	-	-	1	2	-	4	-	-	21	43
Footnotes: ⁽²²⁾ Installation costs across the FYDP vary depending on current port rates - avails not designated with a specific execution port (TBD) have a generic rate for budgeting, and install costs will be updated once an execution port is assigned. Port rates are updated every year by CNRMC based on the forecasted port loading model. Port loading rate forecasts are the rates recommended for all budgeted maintenance and organic modernization within a specific port. Individual ship's availability durations vary dependent upon the integration of ship's maintenance and modernization work packages. Procurement costs for FY17																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0900 / DDG Mod	Modification Number / Title: 17 / DM013 - (MORIAH WIND SYSTEM)
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
and prior are captured in the Conjunctive Alteration Definition and Integration P40A (DM013), installation costs FY17 and prior are captured in the DM6IN installation P40A. All costs from FY18 and out will be captured in this P3A exhibit.		

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Exhibit P-3a, Individual Modification: PB 2019 Navy						Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0900 / DDG Mod				Modification Number / Title: 18 / DM013 - (IVCS UPGRADE)			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	0.000	0.000	18.984	18.778	0.000	18.778	25.027	22.730	30.146	31.288	106.423	253.376
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	0.000	0.000	18.984	18.778	0.000	18.778	25.027	22.730	30.146	31.288	106.423	253.376
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	0.000	0.000	18.984	18.778	0.000	18.778	25.027	22.730	30.146	31.288	106.423	253.376
(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:

Procures the AN/STC-3(V)3 Internal Voice Communication System that replaces the ship's existing obsolete telephone services system that provides voice communications between spaces in the ship, along with ship to shore services.

Integrated Logistics Support includes development of ILS documentation, review and certification.

Environmental Quality Testing includes Shock, Vibration and EMI certification to ensure IVCS meets survivability requirements.

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Exhibit P-3a, Individual Modification: PB 2019 Navy									Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0900 / DDG Mod					Modification Number / Title: 18 / DM013 - (IVCS UPGRADE)				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: [No Model Specified]			Modification Type: TBD						Related RDT&E PEs:				
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: DM013 - (IVCS UPGRADE)													
B Kits													
Recurring													
1.1.1) IVCS EQUIPMENT - NonOrganic ⁽²³⁾		2 / 0.000	2 / 0.000	3 / 7.902	2 / 5.363	- / -	2 / 5.363	3 / 8.189	3 / 8.336	4 / 11.315	4 / 11.519	10 / 28.798	33 / 81.422
Subtotal: Recurring		- / 0.000	- / -	- / 7.902	- / 5.363	- / -	- / 5.363	- / 8.189	- / 8.336	- / 11.315	- / 11.519	- / 28.798	- / 81.422
Subtotal: DM013 - (IVCS UPGRADE)		2 / 0.000	2 / 0.000	3 / 7.902	2 / 5.363	- / -	2 / 5.363	3 / 8.189	3 / 8.336	4 / 11.315	4 / 11.519	10 / 28.798	33 / 81.422
Subtotal: Procurement, All Modification Items		- / 0.000	- / -	- / 7.902	- / 5.363	- / -	- / 5.363	- / 8.189	- / 8.336	- / 11.315	- / 11.519	- / 28.798	- / 81.422
Installation													
Modification Item 1 of 1: DM013 - (IVCS UPGRADE)		- / 0.000	- / 0.000	- / 11.082	- / 13.415	- / 0.000	- / 13.415	- / 16.838	- / 14.394	- / 18.831	- / 19.769	- / 77.625	- / 171.954
Subtotal: Installation		- / 0.000	- / -	- / 11.082	- / 13.415	- / -	- / 13.415	- / 16.838	- / 14.394	- / 18.831	- / 19.769	- / 77.625	- / 171.954
Total													
Total Cost (Procurement + Support + Installation)		0.000	0.000	18.984	18.778	0.000	18.778	25.027	22.730	30.146	31.288	106.423	253.376

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0900 / DDG Mod					Modification Number / Title: 18 / DM013 - (IVCS UPGRADE)																					
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:																					
Modification Item 1 of 1: DM013 - (IVCS UPGRADE)																															
Manufacturer Information																															
Manufacturer Name: Spawar Systems Center Atlantic										Manufacturer Location: Charleston, SC																					
Administrative Leadtime <i>(in Months)</i> : 6										Production Leadtime <i>(in Months)</i> : 16																					
Dates	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023						
Contract Dates					Jul 2018				Jul 2019				Jun 2020				Jun 2021				Mar 2022				May 2023						
Delivery Dates					Jan 2020				Jan 2021				Dec 2021				Dec 2022				Sep 2023				Oct 2024						
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: IVCS EQUIPMENT																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total																		
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																		
Prior Years		- / -	- / -	2 / 8.714	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 8.714																		
FY 2017		- / -	- / -	0 / 1.481	2 / 8.869	0 / 0.000	2 / 8.869	- / -	- / -	- / -	- / -	0 / 0.000	2 / 10.350																		
FY 2018		- / -	- / -	0 / 0.887	0 / 3.929	0 / 0.000	0 / 3.929	3 / 13.088	- / -	- / -	- / -	0 / 0.000	3 / 17.904																		
FY 2019		- / -	- / -	- / -	0 / 0.617	0 / 0.000	0 / 0.617	0 / 2.847	2 / 9.433	- / -	- / -	0 / 0.000	2 / 12.897																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.903	0 / 4.171	3 / 13.836	- / -	0 / 0.000	3 / 18.910																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.790	0 / 3.651	3 / 12.225	0 / 0.000	3 / 16.666																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 1.344	0 / 6.209	4 / 20.459	4 / 28.012																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 1.335	4 / 26.516	4 / 27.851																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 30.650	10 / 30.650																		
Total		- / -	- / -	2 / 11.082	2 / 13.415	0 / 0.000	2 / 13.415	3 / 16.838	2 / 14.394	3 / 18.831	3 / 19.769	18 / 77.625	33 / 171.954																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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						
In	-	-	-	-	-	-	2	-	-	-	2	-	-	-	2	-	1	-	2	-	-	-	3	-	-	-	3	-	-	18	33
Out	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	1	1	1	-	2	-	-	-	3	-	-	21	33
Footnotes: ⁽²³⁾ Installation costs across the FYDP vary depending on current port rates - avails not designated with a specific execution port (TBD) have a generic rate for budgeting, and install costs will be updated once an execution port is assigned. Port rates are updated every year by CNRMC based on the forecasted port loading model. Port loading rate forecasts are the rates recommended for all budgeted maintenance and organic modernization within a specific port. Individual ship's availability durations vary dependent upon the integration of ship's maintenance and modernization work packages. Procurement costs for FY17																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0900 / DDG Mod	Modification Number / Title: 18 / DM013 - (IVCS UPGRADE)
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
and prior are captured in the Conjunctive Alteration Definition and Integration P40A (DM013), installation costs FY17 and prior are captured in the DM6IN installation P40A. All costs from FY18 and out will be captured in this P3A exhibit.		

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Exhibit P-3a, Individual Modification: PB 2019 Navy									Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0900 / DDG Mod					Modification Number / Title: 19 / DM013 - Slewing Arm Davit (SLAD)				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total	
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-	
Gross/Weapon System Cost (\$ in Millions)	0.000	0.000	2.360	1.799	0.000	1.799	2.630	2.528	3.426	3.484	11.655	27.882	
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-	
Net Procurement (P-1) (\$ in Millions)	0.000	0.000	2.360	1.799	0.000	1.799	2.630	2.528	3.426	3.484	11.655	27.882	
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-	
Total Obligation Authority (\$ in Millions)	0.000	0.000	2.360	1.799	0.000	1.799	2.630	2.528	3.426	3.484	11.655	27.882	
(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: Procures Slewing Arm Davit (SLAD) that replaces current SLAD with an all-electric davit, leveraging the current Navy Standard SLAD design. Legacy system has documented reliability and maintenance issues.													

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0900 / DDG Mod						Modification Number / Title: 19 / DM013 - Slewing Arm Davit (SLAD)			
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: DM013 - Slewing Arm Davit (SLAD)													
B Kits													
Recurring													
1.1.1) SLAD EQUIPMENT - NonOrganic ⁽²⁴⁾	2 / 0.000	2 / 0.000	3 / 1.832	2 / 1.244	- / -	2 / 1.244	3 / 1.899	3 / 1.933	4 / 2.624	4 / 2.671	10 / 6.678	33 / 18.881	
<i>Subtotal: Recurring</i>	- / 0.000	- / -	- / 1.832	- / 1.244	- / -	- / 1.244	- / 1.899	- / 1.933	- / 2.624	- / 2.671	- / 6.678	- / 18.881	
<i>Subtotal: DM013 - Slewing Arm Davit (SLAD)</i>	2 / 0.000	2 / 0.000	3 / 1.832	2 / 1.244	- / -	2 / 1.244	3 / 1.899	3 / 1.933	4 / 2.624	4 / 2.671	10 / 6.678	33 / 18.881	
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.000	- / -	- / 1.832	- / 1.244	- / -	- / 1.244	- / 1.899	- / 1.933	- / 2.624	- / 2.671	- / 6.678	- / 18.881	
Installation													
Modification Item 1 of 1: DM013 - Slewing Arm Davit (SLAD)													
	- / 0.000	- / 0.000	- / 0.528	- / 0.555	- / 0.000	- / 0.555	- / 0.731	- / 0.595	- / 0.802	- / 0.813	- / 4.977	- / 9.001	
<i>Subtotal: Installation</i>	- / 0.000	- / -	- / 0.528	- / 0.555	- / -	- / 0.555	- / 0.731	- / 0.595	- / 0.802	- / 0.813	- / 4.977	- / 9.001	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	2.360	1.799	0.000	1.799	2.630	2.528	3.426	3.484	11.655	27.882	

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Exhibit P-3a, Individual Modification: PB 2019 Navy											Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9											P-1 Line Item Number / Title: 0900 / DDG Mod											Modification Number / Title: 19 / DM013 - Slewing Arm Davit (SLAD)										
ID Code (A=Service Ready, B=Not Service Ready) :																MDAP/MAIS Code:																
Modification Item 1 of 1: DM013 - Slewing Arm Davit (SLAD)																																
Manufacturer Information																																
Manufacturer Name: NSWC SSES														Manufacturer Location: Philadelphia, PA																		
Administrative Leadtime (<i>in Months</i>): 6														Production Leadtime (<i>in Months</i>): 16																		
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023						
Contract Dates						Jul 2018				Jul 2019				Jul 2020				Jul 2021				May 2022				Jul 2023						
Delivery Dates						Nov 2019				Nov 2020				Nov 2021				Nov 2022				Sep 2023				Nov 2024						
Installation Information																																
Method of Implementation: [none specified]:: Installation Name: SLAD EQUIPMENT																																
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		To Complete		Total								
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)								
Prior Years		- / -		- / -		2 / 0.404		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 0.404								
FY 2017		- / -		- / -		0 / 0.091		2 / 0.411		0 / 0.000		2 / 0.411		- / -		- / -		- / -		- / -		0 / 0.000		2 / 0.502								
FY 2018		- / -		- / -		0 / 0.033		0 / 0.120		0 / 0.000		0 / 0.120		3 / 0.608		- / -		- / -		- / -		0 / 0.000		3 / 0.761								
FY 2019		- / -		- / -		- / -		0 / 0.024		0 / 0.000		0 / 0.024		0 / 0.087		2 / 0.434		- / -		- / -		0 / 0.000		2 / 0.545								
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.036		0 / 0.129		3 / 0.638		- / -		0 / 0.000		3 / 0.803								
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.032		0 / 0.111		3 / 0.571		0 / 0.000		3 / 0.714								
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.053		0 / 0.190		4 / 0.934		4 / 1.177								
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.052		4 / 1.118		4 / 1.170								
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		10 / 2.925		10 / 2.925								
Total		- / -		- / -		2 / 0.528		2 / 0.555		0 / 0.000		2 / 0.555		3 / 0.731		2 / 0.595		3 / 0.802		3 / 0.813		18 / 4.977		33 / 9.001								
Installation Schedule																																
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	-	1	-	2	-	-	-	3	-	-	-	3	-	-	18	33	
Out	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2	-	-	2	1	-	-	-	-	2	-	3	-	-	21	33	
Footnotes: ⁽²⁴⁾ Installation costs across the FYDP vary depending on current port rates - avails not designated with a specific execution port (TBD) have a generic rate for budgeting, and install costs will be updated once an execution port is assigned. Port rates are updated every year by CNRMC based on the forecasted port loading model. Port loading rate forecasts are the rates recommended for all budgeted maintenance and organic modernization within a specific port. SLAD is upgraded on Flight IIA's only due to a design change in previous SLAD onboard Flight I and Flight II DDG's. Individual ship's availability durations vary																																

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0900 / DDG Mod	Modification Number / Title: 19 / DM013 - Slewing Arm Davit (SLAD)
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
dependent upon the integration of ship's maintenance and modernization work packages. Procurement costs for FY 16 & FY 17 are shown in Conjunctive Alteration Definition and Integration P40-A. Installation cost for FY 16 & FY 17 are shown in DM6IN Installation P40-A. All cost from FY 18 and follows will be captured in this P3-A exhibit.		

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0900 / DDG Mod					Modification Number / Title: 20 / DM013 - AN/SPA-25H		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	0.000	1.227	1.796	0.000	1.796	1.745	2.110	2.321	3.063	9.466	21.728
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	0.000	1.227	1.796	0.000	1.796	1.745	2.110	2.321	3.063	9.466	21.728
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	0.000	1.227	1.796	0.000	1.796	1.745	2.110	2.321	3.063	9.466	21.728
<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: Procures AN/SPA-25H Radar Indicator Group that replaces the legacy AN/SPA-25G												

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Exhibit P-3a, Individual Modification: PB 2019 Navy									Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0900 / DDG Mod					Modification Number / Title: 20 / DM013 - AN/SPA-25H				
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: DM013 - AN/SPA-25H													
B Kits													
Recurring													
1.1.1) AN/SPA-25H EQUIPMENT - NonOrganic ⁽²⁵⁾		2 / 0.000	2 / 0.000	3 / 0.561	2 / 0.380	- / -	2 / 0.380	3 / 0.581	3 / 0.592	4 / 0.803	4 / 0.818	10 / 2.045	33 / 5.780
Subtotal: Recurring		- / 0.000	- / -	- / 0.561	- / 0.380	- / -	- / 0.380	- / 0.581	- / 0.592	- / 0.803	- / 0.818	- / 2.045	- / 5.780
Subtotal: DM013 - AN/SPA-25H		2 / 0.000	2 / 0.000	3 / 0.561	2 / 0.380	- / -	2 / 0.380	3 / 0.581	3 / 0.592	4 / 0.803	4 / 0.818	10 / 2.045	33 / 5.780
Subtotal: Procurement, All Modification Items		- / 0.000	- / -	- / 0.561	- / 0.380	- / -	- / 0.380	- / 0.581	- / 0.592	- / 0.803	- / 0.818	- / 2.045	- / 5.780
Installation													
Modification Item 1 of 1: DM013 - AN/SPA-25H		- / 0.000	- / 0.000	- / 0.666	- / 1.416	- / 0.000	- / 1.416	- / 1.164	- / 1.518	- / 1.518	- / 2.245	Continuing	Continuing
Subtotal: Installation		- / 0.000	- / -	- / 0.666	- / 1.416	- / -	- / 1.416	- / 1.164	- / 1.518	- / 1.518	- / 2.245	Continuing	Continuing
Total													
Total Cost (Procurement + Support + Installation)		0.000	0.000	1.227	1.796	0.000	1.796	1.745	2.110	2.321	3.063	9.466	21.728

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Exhibit P-3a, Individual Modification: PB 2019 Navy											Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9											P-1 Line Item Number / Title: 0900 / DDG Mod											Modification Number / Title: 20 / DM013 - AN/SPA-25H										
ID Code (A=Service Ready, B=Not Service Ready) :																MDAP/MAIS Code:																
Modification Item 1 of 1: DM013 - AN/SPA-25H																																
Manufacturer Information																																
Manufacturer Name: CDSA DAM NECK														Manufacturer Location: DAM NECK, VA																		
Administrative Leadtime <i>(in Months)</i> : 6														Production Leadtime <i>(in Months)</i> : 16																		
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023						
Contract Dates						Jul 2018				Jul 2019				Jun 2020				Jun 2021				Mar 2022				May 2023						
Delivery Dates						Jan 2020				Jan 2021				Dec 2021				Dec 2022				Sep 2023				Oct 2024						
Installation Information																																
Method of Implementation: [none specified]:: Installation Name: AN/SPA-25H EQUIPMENT																																
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		To Complete		Total								
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)								
Prior Years		- / -		- / -		2 / 0.127		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 0.127								
FY 2017		- / -		- / -		0 / 0.464		2 / 0.130		0 / 0.000		2 / 0.130		- / -		- / -		- / -		- / -		0 / 0.000		2 / 0.594								
FY 2018		- / -		- / -		0 / 0.075		0 / 1.231		0 / 0.000		0 / 1.231		3 / 0.191		- / -		- / -		- / -		0 / 0.000		3 / 1.497								
FY 2019		- / -		- / -		- / -		0 / 0.055		0 / 0.000		0 / 0.055		0 / 0.893		2 / 0.139		- / -		- / -		0 / 0.000		2 / 1.087								
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.080		0 / 1.308		3 / 0.204		- / -		0 / 0.000		3 / 1.592								
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.071		0 / 1.196		3 / 0.179		Continuing		Continuing								
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.118		0 / 1.947		4 / 0.301		4 / 2.366								
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.119		4 / 2.235		4 / 2.354								
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		10 / 5.885		10 / 5.885								
Total		- / -		- / -		2 / 0.666		2 / 1.416		0 / 0.000		2 / 1.416		3 / 1.164		2 / 1.518		3 / 1.518		3 / 2.245		Continuing		Continuing								
Installation Schedule																																
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	-	1	-	2	-	-	-	3	-	-	-	3	-	-	18	33	
Out	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	1	1	1	-	2	-	-	-	3	-	-	21	33	
Footnotes: ⁽²⁵⁾ Installation costs across the FYDP vary depending on current port rates - avails not designated with a specific execution port (TBD) have a generic rate for budgeting, and install costs will be updated once an execution port is assigned. Port rates are updated every year by CNRMC based on the forecasted port loading model. Port loading rate forecasts are the rates recommended for all budgeted maintenance and organic modernization within a specific port. Individual ship's availability durations vary dependent upon the integration of ship's maintenance and modernization work packages. Procurement costs for FY 16 &																																

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0900 / DDG Mod	Modification Number / Title: 20 / DM013 - AN/SPA-25H
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
FY 17 are shown in Conjunctive Alteration Definition and Integration P40-A. Installation cost for FY 16 & FY 17 are shown in DM6IN Installation P40-A. All cost from FY 18 and follows will be captured in this P3-A exhibit.		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy								Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment							P-1 Line Item Number / Title: 0910 / Firefighting 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	88.799	13.752	15.887	28.143	0.000	28.143	18.320	17.295	17.575	17.954	270.863	488.588
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	88.799	13.752	15.887	28.143	0.000	28.143	18.320	17.295	17.575	17.954	270.863	488.588
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	88.799	13.752	15.887	28.143	0.000	28.143	18.320	17.295	17.575	17.954	270.863	488.588
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Description:												
The FY 2019 funding request was reduced by \$0.175 million to reflect the Department of Navy's effort to support the Office of Management and Budget directed reforms for Efficiency and Effectiveness that include a lean, accountable, more efficient government.												
The Department decided that a number of survivability improvements needed to be incorporated into mission-essential ship and combat systems during their acquisition and modernization. Shipboard fires have emphasized the urgent need to upgrade features and design standards that contribute to survivability.												
[P40A / HB003 - EMERGENCY ESCAPE BREATHING DEVICE (EEBD)]: Emergency Escape Breathing Device (EEBD) breathing apparatus for firefighters are reaching their service life of 15 years and must be replaced. EEBDs address a high priority CNO effort to replace expired breathing equipment aboard ships throughout the Fleet. The requirement for this capability has been validated by the experience of numerous shipboard casualties. EEBD replacement is required to ensure that ships will deploy with operational safety equipment on-board to allow for emergency escape from shipboard fires.												
[P40A / HB830 - PRODUCTION ENGINEERING (PE)]: PE includes development of technical manuals, Planned Maintenance System (PMS), Provisioning Technical Documentation (PTD), Program Support Data (PSD) and Allowance Parts List (APLs); engineering to manage procurement and material; support of design reviews.												
[P3A / HB002 - MAGAZINE SPRINKLING IMPROVEMENT]: Replaces the detection system designed in the 1960s which has performance deficiencies and is difficult to support and maintain. Replacement includes the Fire Detection and Actuation System (FDAS) and the Motor-Operated Pilot Valves (MOPV). When the FDAS detects a fire, the MOPV opens to provide the sprinkling for the magazine. The FDAS consists of heat detectors, smoke detectors for amphibious ships, and associated controls. MOPV is the same item procured under HB007 - SOPV Replacement. FDAS/MOPV provides increased fire performance and reduced unit and logistics costs.												
[P3A - 2 / HB007 - SOPV REPLACEMENT]: The Solenoid Operated Pilot Valve (SOPV) provides a way for remote control of the Aqueous Film Forming Foam (AFFF) and Countermeasure Wash Down (CMWD) systems. Existing SOPVs are unreliable, costly to repair, and produce the longest downtime for the AFFF system. Top Management Attention/Top Management Initiative (TMA/TMI) and INSURV interest due to impact of this item on AFFF system operation. Replacement of the SOPV with the Motor Operated Pilot Valve (MOPV) is required to ensure these systems are operational for emergencies. MOPV has a 50 year service life and will provide a significant reduction in preventative maintenance and cost.												

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment		P-1 Line Item Number / Title: 0910 / Firefighting 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		
[P3A - 3 / HB008 - SCBA REPLACEMENT]: Self-Contained Breathing Apparatus (SCBA) is a compressed air breathing device compatible with a firefighter's protective wear and helmet, and other damage control equipment. The SCBA are reaching the end of their service life of 15 years and are being replaced with 30 year cylinders. SCBA replacement is required to ensure that ships will deploy with operational safety equipment on-board to provide breathable air while fighting shipboard fires. [P3A - 4 / HB009 - FIREFIGHTER ACCESS]: Funds the Firefighter Extraction System (FES) and Ladder Safety System (LSS) installations. FES provides rescue lifting capability to remove injured or exhausted firefighters from the bottom of escape trunks. LSS provides firefighters fall protection while using escape trunks for vertical entry firefighting.		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy								Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment						P-1 Line Item Number / Title: 0910 / Firefighting 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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	Firefighting Equipment	P-5a			- / 45.301	- / 4.979	- / 2.926	- / 3.144	- / -	- / 3.144
P-3a	1 / HB002 - MAGAZINE SPRINKLING IMPROVEMENT (FDAS/MOPV Installation)				- / 1.792	- / 0.000	- / 1.632	- / 5.780	- / 0.000	- / 5.780
P-3a	2 / HB007 - SOPV REPLACEMENT (SOPV REPLACEMENT)				- / 2.947	- / 0.190	- / 1.077	- / 5.071	- / 0.000	- / 5.071
P-3a	3 / HB008 - SCBA REPLACEMENT (SCBA REPLACEMENT)				- / 31.077	- / 8.583	- / 10.099	- / 14.148	- / 0.000	- / 14.148
P-3a	4 / HB009 - FIREFIGHTER ACCESS (FES/LSS Installation)				- / 7.682	- / 0.000	- / 0.153	- / 0.000	- / 0.000	- / 0.000
P-40	Total Gross/Weapon System Cost				- / 88.799	- / 13.752	- / 15.887	- / 28.143	- / 0.000	- / 28.143
Exhibits Schedule					FY 2020	FY 2021	FY 2022	FY 2023	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	Firefighting Equipment	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / HB002 - MAGAZINE SPRINKLING IMPROVEMENT (FDAS/MOPV Installation)				- / 4.452	- / 3.560	- / 5.959	- / 9.310	- / 194.428	- / 226.913
P-3a	2 / HB007 - SOPV REPLACEMENT (SOPV REPLACEMENT)				- / 4.056	- / 3.857	- / 2.882	- / 5.317	- / 65.487	- / 90.884
P-3a	3 / HB008 - SCBA REPLACEMENT (SCBA REPLACEMENT)				- / 8.098	- / 5.365	- / 6.599	- / 0.951	- / 0.000	- / 84.920
P-3a	4 / HB009 - FIREFIGHTER ACCESS (FES/LSS Installation)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 7.835
P-40	Total Gross/Weapon System Cost				- / 18.320	- / 17.295	- / 17.575	- / 17.954	- / 270.863	- / 488.588
*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 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9							P-1 Line Item Number / Title: 0910 / Firefighting Equipment							Aggregated Items Title: Firefighting Equipment						
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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) HB003 - EMERGENCY ESCAPE BREATHING DEVICE (EEBD) ⁽¹⁾																				
1.1) EEBD REPLACEMENT ^(†)	A		294,076.92	91	26.761	250,357.14	14	3.505	258,857.14	7	1.812	204,750.00	8	1.638	-	-	-	204,750.00	8	1.638
Subtotal: 1) HB003 - EMERGENCY ESCAPE BREATHING DEVICE (EEBD)			-	-	26.761	-	-	3.505	-	-	1.812	-	-	1.638	-	-	-	-	-	1.638
2) HB830 - PRODUCTION ENGINEERING (PE)																				
2.1) PRODUCTION ENGINEERING ⁽²⁾	A		-	-	18.540	-	-	1.474	-	-	1.114	-	-	1.506	-	-	-	-	-	1.506
Subtotal: 2) HB830 - PRODUCTION ENGINEERING (PE)			-	-	18.540	-	-	1.474	-	-	1.114	-	-	1.506	-	-	-	-	-	1.506
Total			-	-	45.301	-	-	4.979	-	-	2.926	-	-	3.144	-	-	-	-	-	3.144

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 P40 unit costs are identified as costs per ship for EEBD. Unit costs can vary based on the distribution of ship classes planned during each FY, quantities per ship class, and the ship port location. Requirement is for CG-47, DDG-51 (Flight I,II,IIA), LCS-1, LCS-2, LHD-1, LSD-41, LSD-49, MCM-1, and PC-1 ship classes. PROCUREMENT: Funding includes the breathing apparatus, shipping, and distribution to ships. FY18 procurement is for one (1) CG-47 class ship (average \$212K), five (5) DDG-51 class ships (average \$213K), and one (1) LPD-17 class ship (\$535K) for a program total of \$1.812M. FY19 procurement is for two (2) DDG-51 class ships (average \$219K), two (2) LPD-17 class ships (\$550K), and four (4) PC-1 class ships (average \$25K) for a program total of \$1.638M.

⁽²⁾ PE costs are calculated for each FY based on the fielding plan distribution and installation level of effort for each FY across the FYDP.

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Exhibit P-5a, Procurement History and Planning: PB 2019 Navy									Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0910 / Firefighting Equipment					Aggregated Items: Firefighting Equipment			
Item Number / Title [DODIC]	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1) HB003 - EMERGENCY ESCAPE BREATHING DEVICE (EEBD)												
1.1) EEBD REPLACEMENT		2017 ⁽³⁾	OCENCO / PLEASANT PRAIRIE, WI	C / FP	NSWC, PCD	Jan 2017	Apr 2017	14	250,357.14	Y		
1.1) EEBD REPLACEMENT		2018 ⁽⁴⁾	OCENCO / PLEASANT PRAIRIE, WI	C / FP	NSWC, PCDNSWC, PCDNSWC, PCD	Jan 2018	Apr 2018	7	258,857.14	Y		
1.1) EEBD REPLACEMENT		2019 ⁽⁵⁾	OCENCO / PLEASANT PRAIRIE, WI	C / FP	NSWC, PCD	Jan 2019	Apr 2019	8	204,750.00	Y		

Footnotes:

⁽³⁾ In FY17, EEBDs for 14 ships will be awarded through competitive contract.

⁽⁴⁾ In FY18, EEBD's for 7 ships will be awarded through competitive contract.

⁽⁵⁾ In FY19, EEBD's for 8 ships will be awarded through competitive contract.

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0910 / Firefighting Equipment					Modification Number / Title: 1 / HB002 - MAGAZINE SPRINKLING IMPROVEMENT		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1.792	0.000	1.632	5.780	0.000	5.780	4.452	3.560	5.959	9.310	194.428	226.913
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1.792	0.000	1.632	5.780	0.000	5.780	4.452	3.560	5.959	9.310	194.428	226.913
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1.792	0.000	1.632	5.780	0.000	5.780	4.452	3.560	5.959	9.310	194.428	226.913
<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: Quantities are number of ships. FDAS/MOPV costs can vary significantly by ship class, quantity and/or size of the magazines, and ship port location. DDG-51 ships already have smoke detectors. PROCUREMENT: Procurement costs include FDAS and MOPV equipment, shipping, and distribution to ship. INSTALLATION (HB5IN/HB6IN): Funding includes all costs associated with the Fleet Modernization Program Magazine Sprinkling Improvement Design Support Allocation (DSA) and equipment installations onboard ships. DSA costs are budgeted in the FY prior to equipment procurement. FY18 procurement/equipment installation is for one (1) DDG-51 class ship and five (5) DSA for FY19 DDG-51 class ship installations for a program total of \$1.632M. FY19 procurement/equipment installation is for five (5) DDG-51 class ships and four (4) DSA for FY20 DDG-51 class ship installations for a program total of \$5.780M. Requirement is for all CG-47, DDG-51, LHA-6, LHD-1, LPD-17, LSD-41, and LSD-49 ship classes.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0910 / Firefighting Equipment					Modification Number / Title: 1 / HB002 - MAGAZINE SPRINKLING IMPROVEMENT			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: N/A				Modification Type: FDAS/MOPV Installation				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> HB002 - MAGAZINE SPRINKLING IMPROVEMENT													
B Kits													
Recurring													
1.1.1) MAGAZINE SPRINKLING IMPROVEMENT HW - NonOrganic ⁽⁶⁾	2 / 0.553	- / -	1 / 0.119	5 / 0.907	- / -	5 / 0.907	4 / 0.697	3 / 0.479	4 / 0.830	7 / 1.344	101 / 32.308	127 / 37.237	
<i>Subtotal: Recurring</i>	- / 0.553	- / -	- / 0.119	- / 0.907	- / -	- / 0.907	- / 0.697	- / 0.479	- / 0.830	- / 1.344	- / 32.308	- / 37.237	
<i>Subtotal: HB002 - MAGAZINE SPRINKLING IMPROVEMENT</i>	2 / 0.553	- / -	1 / 0.119	5 / 0.907	- / -	5 / 0.907	4 / 0.697	3 / 0.479	4 / 0.830	7 / 1.344	101 / 32.308	127 / 37.237	
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.553	- / -	- / 0.119	- / 0.907	- / -	- / 0.907	- / 0.697	- / 0.479	- / 0.830	- / 1.344	- / 32.308	- / 37.237	
Installation													
<i>Modification Item 1 of 1:</i> HB002 - MAGAZINE SPRINKLING IMPROVEMENT	- / 1.239	- / 0.000	- / 1.513	- / 4.873	- / 0.000	- / 4.873	- / 3.755	- / 3.081	- / 5.129	- / 7.966	- / 162.120	- / 189.676	
<i>Subtotal: Installation</i>	- / 1.239	- / -	- / 1.513	- / 4.873	- / -	- / 4.873	- / 3.755	- / 3.081	- / 5.129	- / 7.966	- / 162.120	- / 189.676	
Total													
Total Cost (Procurement + Support + Installation)	1.792	0.000	1.632	5.780	0.000	5.780	4.452	3.560	5.959	9.310	194.428	226.913	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0910 / Firefighting Equipment										Modification Number / Title: 1 / HB002 - MAGAZINE SPRINKLING IMPROVEMENT											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: HB002 - MAGAZINE SPRINKLING IMPROVEMENT																															
Manufacturer Information																															
Manufacturer Name: TBD ⁽⁷⁾															Manufacturer Location: New MFG - LocTBD																
Administrative Leadtime (in Months): 2															Production Leadtime (in Months): 4																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates						Jan 2018				Jan 2019				Jan 2020				Jan 2021				Jan 2022				Jan 2023					
Delivery Dates						May 2018				May 2019				May 2020				May 2021				May 2022				May 2023					
Installation Information																															
Method of Implementation: SHIPALT/DSA:: Installation Name: MAGAZINE SPRINKLING IMPROVEMENT HW																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		2 / 1.239		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 1.239					
FY 2017		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2018		- / -		- / -		1 / 1.513		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		1 / 1.513					
FY 2019		- / -		- / -		- / -		5 / 4.873		0 / 0.000		5 / 4.873		- / -		- / -		- / -		- / -		- / -		0 / 0.000		5 / 4.873					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		4 / 3.755		- / -		- / -		- / -		- / -		0 / 0.000		4 / 3.755					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		3 / 3.081		- / -		- / -		- / -		0 / 0.000		3 / 3.081					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		4 / 5.129		- / -		- / -		0 / 0.000		4 / 5.129					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		7 / 7.966		0 / 0.000		7 / 7.966					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		101 / 162.120		101 / 162.120					
Total		2 / 1.239		- / -		1 / 1.513		5 / 4.873		0 / 0.000		5 / 4.873		4 / 3.755		3 / 3.081		4 / 5.129		7 / 7.966		101 / 162.120		127 / 189.676							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	2	-	-	-	-	-	-	1	-	-	-	3	2	-	-	2	2	-	-	2	1	-	-	2	2	-	-	4	3	101	127
Out	2	-	-	-	-	-	-	-	-	1	-	3	2	-	-	2	2	-	-	2	1	-	-	2	2	-	-	4	3	101	127
Footnotes:																															
⁽⁶⁾ Installation quantities reflect number of SHIPALTS to be performed during each FY. DSA quantities are not shown. SHIPALT Costs/FY (Qty/(Cost (\$M))): PRIOR YEARS(2/ \$0.894),FY17(0/\$0.000),FY18(1/0.588),FY19(5/4.139),FY20(4/3.220),FY21(3/2.266),FY22(4/3.743),FY23(7/6.159),TO COMPLETE(101/140.695); DSA Costs/FY (Qty/(Cost (\$M))): PRIOR YEARS(3/0.345),FY17(0/0.000),FY18(5/0.925),FY19(4/0.734),FY20(3/0.535),FY21(4/0.815),FY22(7/1.386),FY23(9/1.807),TO COMPLETE(92/21.425)																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0910 / Firefighting Equipment	Modification Number / Title: 1 / HB002 - MAGAZINE SPRINKLING IMPROVEMENT
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
(7) Same contract for HB007 requirements		

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Exhibit P-3a, Individual Modification: PB 2019 Navy						Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0910 / Firefighting Equipment				Modification Number / Title: 2 / HB007 - SOPV REPLACEMENT			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	2.947	0.190	1.077	5.071	0.000	5.071	4.056	3.857	2.882	5.317	65.487	90.884
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	2.947	0.190	1.077	5.071	0.000	5.071	4.056	3.857	2.882	5.317	65.487	90.884
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	2.947	0.190	1.077	5.071	0.000	5.071	4.056	3.857	2.882	5.317	65.487	90.884
(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:

Quantities are number of ships. SOPV quantities/installation costs can vary significantly based on ship class and ship port location.

PROCUREMENT: Costs include SOPV equipment, shipping, and distribution to ship.

INSTALLATION (HB5IN/HB6IN): Funding includes all costs associated with the Fleet Modernization Program SOPV replacement Design Support Allocation (DSA) and equipment installations onboard ships. DSA costs are budgeted in the FY prior to equipment procurement.

FY18 procurement/equipment installation is for two (2) DDG-51 class ships and eleven (11) DSA in support of FY19 DDG-51 class ship planned installs for a program total of \$1.027M. FY19 procurement/equipment installation is for eleven (11) DDG-51 class ships and nine (9) DSA in support of FY20 DDG-51 class ship planned installs for a program total of \$5.071M.

Requirement is for CG-47, DDG-51, LHA-6, LHD-1, LPD-17, LSD-41, LSD-49 ship classes.

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LI 0910 - Firefighting Equipment
Navy

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Exhibit P-3a, Individual Modification: PB 2019 Navy												Date: February 2018																			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0910 / Firefighting Equipment										Modification Number / Title: 2 / HB007 - SOPV REPLACEMENT											
ID Code (A=Service Ready, B=Not Service Ready) :														MDAP/MAIS Code:																	
Modification Item 1 of 1: HB007 - SOPV REPLACEMENT																															
Manufacturer Information																															
Manufacturer Name: TBD ⁽⁹⁾														Manufacturer Location: New MFG - LocTBD																	
Administrative Leadtime <i>(in Months)</i> : 2														Production Leadtime <i>(in Months)</i> : 4																	
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates						Jan 2018				Jan 2019				Jan 2020				Jan 2021				Jan 2022				Jan 2023					
Delivery Dates						May 2018				May 2019				May 2020				May 2021				May 2022				May 2023					
Installation Information																															
Method of Implementation: SHIPALT/DSA:: Installation Name: HB007 - SOPV REPLACEMENT HW																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		8 / 2.022		0 / 0.190		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		8 / 2.212					
FY 2017		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2018		- / -		- / -		2 / 0.870		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 0.870					
FY 2019		- / -		- / -		- / -		11 / 4.008		0 / 0.000		11 / 4.008		- / -		- / -		- / -		- / -		- / -		0 / 0.000		11 / 4.008					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		9 / 3.229		- / -		- / -		- / -		- / -		0 / 0.000		9 / 3.229					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		8 / 3.040		- / -		- / -		- / -		0 / 0.000		8 / 3.040					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		6 / 2.336		- / -		- / -		0 / 0.000		6 / 2.336					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		8 / 4.126		- / -		0 / 0.000		8 / 4.126					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		74 / 49.363		74 / 49.363					
Total		8 / 2.022		0 / 0.190		2 / 0.870		11 / 4.008		0 / 0.000		11 / 4.008		9 / 3.229		8 / 3.040		6 / 2.336		8 / 4.126		74 / 49.363		126 / 69.184							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	8	-	-	-	-	-	1	1	-	-	6	5	-	-	5	4	-	-	4	4	-	-	3	3	-	-	4	4	-	74	126
Out	7	-	-	1	-	-	-	1	1	-	-	6	5	-	-	5	4	-	-	4	4	-	-	3	3	-	-	4	4	74	126
Method of Implementation (Organic): SOPV REPLACEMENT FIRST ARTICLES/TESTING - Not Installed																															
														Installation Quantity: 2																	
Footnotes:																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0910 / Firefighting Equipment	Modification Number / Title: 2 / HB007 - SOPV REPLACEMENT
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
(8) Installation quantities reflect number of SHIPALTS to be performed during each FY. DSA quantities are not shown. SHIPALT Costs/FY (Qty/(Cost (\$M))): PRIOR YEARS(8/1.420),FY17(1/0.150),FY18(2/0.595),FY19(11/3.795),FY20(9/3.017),FY21(8/2.900),FY22(6/2.023),FY23(8/3.740),TO COMPLETE(74/45.381); DSA Costs/FY (Qty/(Cost (\$M))): PRIOR YEARS(8/0.602),FY17(2/0.040),FY18(11/0.275),FY19(9/0.213),FY20(8/0.212),FY21(6/0.140),FY22(8/0.313),FY23 (10/0.386),TO COMPLETE(64/3.982) (9) Same contract provides motor-operated pilot valve requirements under HB002		

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0910 / Firefighting Equipment	Modification Number / Title: 3 / HB008 - SCBA REPLACEMENT

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	31.077	8.583	10.099	14.148	0.000	14.148	8.098	5.365	6.599	0.951	0.000	84.920
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	31.077	8.583	10.099	14.148	0.000	14.148	8.098	5.365	6.599	0.951	0.000	84.920
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	31.077	8.583	10.099	14.148	0.000	14.148	8.098	5.365	6.599	0.951	0.000	84.920
(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:

Quantities are number of ships. SCBA quantities/installation costs can vary significantly based on ship class and ship port location.

PROCUREMENT: Funding includes the breathing apparatus, 45-minute air cylinders, and 30-minute air cylinders, shipping, distribution to, and modifying stowage on ships. SCBA quantity and cost varies based on ship class and location.

INSTALLATION HBINS (HB5IN/HB6IN): Funding includes all costs associated with the Fleet Modernization Program SCBA equipment installations onboard ships.

FY18 procurement is for four (4) CG-47 class ships (average \$459K), nine (9) DDG-51 class ships (average \$575K), thirteen (13) LCU class ships (average \$75K), one (1) LPD-17 class ship (average \$1,335K), and one (1) LSD-41 class ship (average \$778K) for a program total of \$10.099M.

FY19 procurement is for one (1) CG-47 class ship (average \$475K), five (5) DDG-51 class ships (average \$555K), three (3) LHD-1 class ships (average \$1,550K), one (1) LPD-17 class ship (average \$1,338K), five (5) LSD-41/49 class ships (average \$775K), two (2) PC-1 class ships (average \$105K), and three (3) MCM-1 class ships (average \$275K) for a program total of \$14.148M.

Requirement is on AFDL, AFDM, CG-47, DDG-51 (Flight I,II,IIA), LCC-19, LCU, LHD-1, LPD-17, LSD-41, LSD-49, MCM-1, and PC-1 ship classes.

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Exhibit P-3a, Individual Modification: PB 2019 Navy									Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0910 / Firefighting Equipment					Modification Number / Title: 3 / HB008 - SCBA REPLACEMENT				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: N/A				Modification Type: SCBA REPLACEMENT				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> HB008 - SCBA REPLACEMENT													
B Kits													
Recurring													
1.1.1) HB008 - SCBA REPLACEMENT HW - NonOrganic	57 / 29.814	24 / 6.306	28 / 7.296	20 / 11.126	- / -	20 / 11.126	19 / 6.071	9 / 4.228	8 / 5.305	8 / 0.670	- / -	173 / 70.816	
<i>Subtotal: Recurring</i>	- / 29.814	- / 6.306	- / 7.296	- / 11.126	- / -	- / 11.126	- / 6.071	- / 4.228	- / 5.305	- / 0.670	- / 0.000	- / 70.816	
<i>Subtotal: HB008 - SCBA REPLACEMENT</i>	57 / 29.814	24 / 6.306	28 / 7.296	20 / 11.126	- / -	20 / 11.126	19 / 6.071	9 / 4.228	8 / 5.305	8 / 0.670	- / -	173 / 70.816	
<i>Subtotal: Procurement, All Modification Items</i>	- / 29.814	- / 6.306	- / 7.296	- / 11.126	- / -	- / 11.126	- / 6.071	- / 4.228	- / 5.305	- / 0.670	- / 0.000	- / 70.816	
Installation													
<i>Modification Item 1 of 1:</i> HB008 - SCBA REPLACEMENT	- / 1.263	- / 2.277	- / 2.803	- / 3.022	- / 0.000	- / 3.022	- / 2.027	- / 1.137	- / 1.294	- / 0.281	- / 0.000	- / 14.104	
<i>Subtotal: Installation</i>	- / 1.263	- / 2.277	- / 2.803	- / 3.022	- / -	- / 3.022	- / 2.027	- / 1.137	- / 1.294	- / 0.281	- / 0.000	- / 14.104	
Total													
Total Cost (Procurement + Support + Installation)	31.077	8.583	10.099	14.148	0.000	14.148	8.098	5.365	6.599	0.951	0.000	84.920	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0910 / Firefighting Equipment										Modification Number / Title: 3 / HB008 - SCBA REPLACEMENT											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: HB008 - SCBA REPLACEMENT																															
Manufacturer Information																															
Manufacturer Name: SCOTT HEALTH & SAFETY															Manufacturer Location: MONROE, NC																
Administrative Leadtime (in Months): 3															Production Leadtime (in Months): 3																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates		Jan 2017				Jan 2018				Jan 2019				Jan 2020				Jan 2021				Jan 2022				Jan 2023					
Delivery Dates		Apr 2017				Apr 2018				Apr 2019				Apr 2020				Apr 2021				Apr 2022				Apr 2023					
Installation Information																															
Method of Implementation: SHIPALT:: Installation Name: HB008 - SCBA REPLACEMENT HW																															
Installation Cost		Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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		57 / 1.263		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		57 / 1.263							
FY 2017		- / -		24 / 2.277		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		24 / 2.277							
FY 2018		- / -		- / -		28 / 2.803		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		28 / 2.803							
FY 2019		- / -		- / -		- / -		20 / 3.022		0 / 0.000		20 / 3.022		- / -		- / -		- / -		- / -		0 / 0.000		20 / 3.022							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		19 / 2.027		- / -		- / -		- / -		0 / 0.000		19 / 2.027							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		9 / 1.137		- / -		- / -		0 / 0.000		9 / 1.137							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		8 / 1.294		- / -		0 / 0.000		8 / 1.294							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		8 / 0.281		0 / 0.000		8 / 0.281							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		57 / 1.263		24 / 2.277		28 / 2.803		20 / 3.022		0 / 0.000		20 / 3.022		19 / 2.027		9 / 1.137		8 / 1.294		8 / 0.281		0 / 0.000		173 / 14.104							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	57	-	12	12	-	-	14	14	-	-	10	10	-	-	10	9	-	-	5	4	-	-	4	4	-	-	4	4	-	-	173
Out	57	-	-	12	12	-	-	14	14	-	-	10	10	-	-	10	9	-	-	5	4	-	-	4	4	-	-	4	4	-	173

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Exhibit P-3a, Individual Modification: PB 2019 Navy						Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0910 / Firefighting Equipment				Modification Number / Title: 4 / HB009 - FIREFIGHTER ACCESS			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	7.682	0.000	0.153	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.835
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	7.682	0.000	0.153	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.835
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	7.682	0.000	0.153	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.835
<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:

Quantities are number of ships. LSD-41/49 ship classes have four escape trunks to be modified. LPD-17 ship class has five trunks to be modified. FES/LSS quantities/installation costs can vary significantly based on ship class and ship port location.

PROCUREMENT: Funding includes the hardware for the FES and LSS, shipping, and distribution to ships.

INSTALLATION HBINS (HB5IN/HB6IN): Funding includes all costs associated with the Fleet Modernization Program FES/LSS equipment installations of the escape trunk ladder safety rails used in conjunction with safety belts and lifting pad-eyes installed at the top of the escape trunks onboard ships.

FY18 procurement/equipment installation is for one (1) LPD-17 class ship for a program total of \$0.153M.

Requirement is for LSD-41, LSD-49 and LPD-17 class hulls.

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Exhibit P-3a, Individual Modification: PB 2019 Navy									Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0910 / Firefighting Equipment					Modification Number / Title: 4 / HB009 - FIREFIGHTER ACCESS				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:						
Models of Systems Affected: N/A			Modification Type: FES/LSS Installation					Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> HB009 - FIREFIGHTER ACCESS													
B Kits													
Recurring													
1.1.1) FIREFIGHTER ACCESS HW - NonOrganic	52 / 3.151	- / -	1 / 0.063	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	53 / 3.214	
<i>Subtotal: Recurring</i>	- / 3.151	- / -	- / 0.063	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 3.214	
<i>Subtotal: HB009 - FIREFIGHTER ACCESS</i>	52 / 3.151	- / -	1 / 0.063	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	53 / 3.214	
<i>Subtotal: Procurement, All Modification Items</i>	- / 3.151	- / -	- / 0.063	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 3.214	
Installation													
<i>Modification Item 1 of 1:</i> HB009 - FIREFIGHTER ACCESS	- / 4.531	- / 0.000	- / 0.090	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 4.621	
<i>Subtotal: Installation</i>	- / 4.531	- / -	- / 0.090	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 4.621	
Total													
Total Cost (Procurement + Support + Installation)	7.682	0.000	0.153	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.835	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0910 / Firefighting Equipment										Modification Number / Title: 4 / HB009 - FIREFIGHTER ACCESS											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: HB009 - FIREFIGHTER ACCESS																															
Manufacturer Information																															
Manufacturer Name: SELSTROM MAN															Manufacturer Location: PALATINE, IL																
Administrative Leadtime (in Months): 0															Production Leadtime (in Months): 3																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates						Jan 2018																									
Delivery Dates						Apr 2018																									
Installation Information																															
Method of Implementation: SHIPALT:: Installation Name: FIREFIGHTER ACCESS HW																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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		52 / 4.531		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		52 / 4.531							
FY 2017		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2018		- / -		- / -		1 / 0.090		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		1 / 0.090							
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		52 / 4.531		- / -		1 / 0.090		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		53 / 4.621							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	52	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	53
Out	51	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	53

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment							P-1 Line Item Number / Title: 0925 / Command and Control Switchboard					
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	69.236	2.140	2.240	2.248	0.000	2.248	2.230	2.286	2.326	2.369	-	85.075
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	69.236	2.140	2.240	2.248	0.000	2.248	2.230	2.286	2.326	2.369	-	85.075
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	69.236	2.140	2.240	2.248	0.000	2.248	2.230	2.286	2.326	2.369	-	85.075
<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 2019 funding request was reduced by \$.016 million to reflect the Department of Navy's effort to support the Office of Management and Budget directed reforms for Efficiency and Effectiveness that include a lean, accountable, more efficient government. The switchboard program provides mission critical switching capability required to link shipboard combat equipment including weapons, launchers, sensors, computers and navigation equipment. In essence, switchboards serve as the central connection point for most elements of combat and weapon systems, interior communications, data transfer, and command and control systems. They are designed to accommodate either analog, digital interfaces, or a combination of both. In total, this budget item supports approximately 200 ships and 1,000 pieces of equipment throughout the acquisition life cycle. Functions include: data routing; action cutout; test and operating mode selection (including casualty back-up modes); power monitoring and control; circuit protection; peripheral equipment isolation; and signal processing, frequency conversion amplification and switching. In summary, the primary purpose is to provide systems intra and interface compatibility. Changes in other elements of the combat and Interior Communication (IC) systems will frequently mandate either conjunctive modification to switchboards via ship change documents (SCDs), ordnance alteration (ORDALT)/ field changes (FCs) or partial or complete replacement of existing switchboards. Typical switchboard mods include hardware/field change kits, ORDALT/SCD/FC instructions, technical manual updates and revisions to other supporting documentation. Hull unique switchboard configurations require hull unique documentation. Subsequent alterations to these switchboards require hull unique design, hardware, installation, and checkout procedures. New Switchboards are normally installed during a regular overhaul by a shipyard. Command and control switchboards are currently installed on and are required for almost all surface combatants and amphibious warfare ships. Individual switchboard unit cost varies from ship to ship, depending upon size,												

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment		P-1 Line Item Number / Title: 0925 / Command and Control Switchboard
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		
complexity, and whether analog or digital interfaces or some combination thereof are utilized. Modifications to existing switchboards via Ship Alterations (SHIPALTs), SCDs, ORDALTs or FCs are quantified by kits or change packages rather than individual units. The number of kits required for different classes of ships are as follows: DDGs/CGs require three to four (3 - 4) per ship, LSDs require two (2) per ship, LPDs require one (1) per ship, MCMS require (3) per ship and LHDs require two (2) per ship. The magnitude of modifications also varies, as Cruiser Modernization is considerably more complex than the Amphibious Class hulls. Switchboard hardware is normally procured by the Invitation For Bids (IFB) process, from manufacturers on Qualified Products List (QPL)-17000. There are currently six companies listed on QPL-17000. All contracts awarded are competitive, fixed price. [P40A / GE003 ENG UPGRADES/MODS TO EQUIPMENT & TECH DOCUMENTATION]: Combat Systems & Interior Communication Switchboard Engineering and Modifications Upgrades to Equipment, Drawings, Technical Manuals (TMs) Allowance Parts Lists (APLs) and Allowance Equipage Lists (AELs). This line covers the costs to upgrade/modify existing equipment and associated technical documentation to implement and validate upgraded switching configurations essential for the ships' switchboards to properly integrate all elements of the Combat System and Interior Communication interfaces. The upgraded engineering modification drives the procurement of hardware modification kits (i.e., ORDALTs & Field Changes). These engineering modifications are essential to the functional deployment of Battle Force Interoperability.		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy								Date: February 2018	
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment						P-1 Line Item Number / Title: 0925 / Command and Control Switchboard			
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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	COMMAND AND CONTROL SWITCHBOARD				- / 20.141	- / 1.545	- / 1.680	- / 1.674	- / -	- / 1.674
P-3a	1 / COMMAND AND CONTROL ORDALT/FIELD CHANGE KITS (TBD)				- / 49.095	- / 0.595	- / 0.560	- / 0.574	- / 0.000	- / 0.574
P-40	Total Gross/Weapon System Cost				- / 69.236	- / 2.140	- / 2.240	- / 2.248	- / 0.000	- / 2.248

Exhibits Schedule					FY 2020	FY 2021	FY 2022	FY 2023	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	COMMAND AND CONTROL SWITCHBOARD				- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / COMMAND AND CONTROL ORDALT/FIELD CHANGE KITS (TBD)				- / 0.614	- / 0.649	- / 0.646	- / 0.661	- / 0.000	- / 53.394
P-40	Total Gross/Weapon System Cost				- / 2.230	- / 2.286	- / 2.326	- / 2.369	- / -	- / 85.075

*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 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9								P-1 Line Item Number / Title: 0925 / Command and Control Switchboard							Aggregated Items Title: COMMAND AND CONTROL SWITCHBOARD					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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) GE003 ENG UPGRADES/MODS TO EQUIPMENT & TECH DOCUMENTATION																				
1.1) ENGINEERING UPGRADES/MODS TO EQUIPMENT & TECHNICAL DOCUMENTATION	A		-	-	20.141	-	-	1.545	-	-	1.680	-	-	1.674	-	-	-	-	-	1.674
Subtotal: 1) GE003 ENG UPGRADES/MODS TO EQUIPMENT & TECH DOCUMENTATION			-	-	20.141	-	-	1.545	-	-	1.680	-	-	1.674	-	-	-	-	-	1.674
Total			-	-	20.141	-	-	1.545	-	-	1.680	-	-	1.674	-	-	-	-	-	1.674

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 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0925 / Command and Control Switchboard						Modification Number / Title: 1 / COMMAND AND CONTROL ORDALT/FIELD CHANGE KITS		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	49.095	0.595	0.560	0.574	0.000	0.574	0.614	0.649	0.646	0.661	0.000	53.394
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	49.095	0.595	0.560	0.574	0.000	0.574	0.614	0.649	0.646	0.661	0.000	53.394
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	49.095	0.595	0.560	0.574	0.000	0.574	0.614	0.649	0.646	0.661	0.000	53.394
<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: Combat Systems & Interior Communication Switchboard Engineering and Modifications Upgrades to Equipment, Drawings, Technical Manuals (TMs) Allowance Parts Lists (APLs) and Allowance Equipage Lists (AELs). This line covers the costs to upgrade/modify existing equipment and associated technical documentation to implement and validate upgraded switching configurations essential for the ships' switchboards to properly integrate all elements of the Combat System and Interior Communication interfaces. The upgraded engineering modification drives the procurement of hardware modification kits (i.e., ORDALTs & Field Changes). These engineering modifications are essential to the functional deployment of Battle Force Interoperability.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0925 / Command and Control Switchboard					Modification Number / Title: 1 / COMMAND AND CONTROL ORDALT/FIELD CHANGE 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> COMMAND AND CONTROL ORDALT/FIELD CHANGE KITS													
B Kits													
Recurring													
1.1.1) Ordalt/Field Change Kits - NonOrganic ⁽¹⁾	135 / 49.095	16 / 0.595	14 / 0.560	14 / 0.574	- / -	14 / 0.574	14 / 0.614	14 / 0.649	14 / 0.646	14 / 0.661	- / -	235 / 53.394	
<i>Subtotal: Recurring</i>	- / 49.095	- / 0.595	- / 0.560	- / 0.574	- / -	- / 0.574	- / 0.614	- / 0.649	- / 0.646	- / 0.661	- / 0.000	- / 53.394	
<i>Subtotal: COMMAND AND CONTROL ORDALT/FIELD CHANGE KITS</i>	135 / 49.095	16 / 0.595	14 / 0.560	14 / 0.574	- / -	14 / 0.574	14 / 0.614	14 / 0.649	14 / 0.646	14 / 0.661	- / -	235 / 53.394	
<i>Subtotal: Procurement, All Modification Items</i>	- / 49.095	- / 0.595	- / 0.560	- / 0.574	- / -	- / 0.574	- / 0.614	- / 0.649	- / 0.646	- / 0.661	- / 0.000	- / 53.394	
Installation													
<i>Modification Item 1 of 1:</i> COMMAND AND CONTROL ORDALT/FIELD CHANGE KITS	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	
<i>Subtotal: Installation</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	
Total													
Total Cost (Procurement + Support + Installation)	49.095	0.595	0.560	0.574	0.000	0.574	0.614	0.649	0.646	0.661	0.000	53.394	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0925 / Command and Control Switchboard										Modification Number / Title: 1 / COMMAND AND CONTROL ORDALT/FIELD CHANGE KITS											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: COMMAND AND CONTROL ORDALT/FIELD CHANGE KITS																															
Manufacturer Information																															
Manufacturer Name: Valkyrie															Manufacturer Location: Oxnard, CA																
Administrative Leadtime (in Months): 0															Production Leadtime (in Months): 1																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates		Dec 2016				Nov 2017				Nov 2018				Nov 2019				Nov 2020				Nov 2021				Nov 2022					
Delivery Dates		Jan 2017				Dec 2017				Dec 2018				Dec 2019				Dec 2020				Jan 2022				Jan 2023					
Installation Information																															
Method of Implementation: ALT:: Installation Name: Ordalt/Field Change Kits																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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		135 / 0.000		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		135 / -							
FY 2017		- / -		16 / 0.000		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		16 / -							
FY 2018		- / -		- / -		14 / 0.000		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		14 / -							
FY 2019		- / -		- / -		- / -		14 / 0.000		0 / 0.000		14 / 0.000		- / -		- / -		- / -		- / -		0 / 0.000		14 / -							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		14 / 0.000		- / -		- / -		- / -		0 / 0.000		14 / -							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		14 / 0.000		- / -		- / -		0 / 0.000		14 / -							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		14 / 0.000		- / -		0 / 0.000		14 / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		14 / 0.000		0 / 0.000		14 / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		135 / 0.000		16 / 0.000		14 / 0.000		14 / 0.000		0 / 0.000		14 / 0.000		14 / 0.000		14 / 0.000		14 / 0.000		14 / 0.000		0 / 0.000		235 / -							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	135	2	6	4	4	-	4	3	7	8	1	3	2	6	3	3	2	6	3	3	2	2	4	6	2	2	4	6	2	-	235
Out	135	2	6	4	4	-	4	3	7	8	1	3	2	6	3	3	2	6	3	3	2	2	4	6	2	2	4	6	2	-	235
Footnotes:																															
(1) FY 2017 funding is for the procurement of 16 units to be installed on the following ship classes: 2 CG-Class (6 units), 2 DDG-Class (4 units), 2 LSD-Class (3 units) and 1 LHD-Class (3 units). FY 2018 funding is for the procurement of 14 units to be installed on the following ship classes: 1 CG-Class (3 units), 2 DDG-Class (4 units), 2 LSD-Class (4 units), 1 MCM-Class (1 unit), and 1 LHD-Class (2 units). FY 2019 funding is for the procurement of 14 units to be installed on the following ship classes: 3 CG-Class (6 units), 4 DDG-Class (4 units), 2 LSD-Class (2 units), and 1 LHD-Class (2 units).																															

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy								Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment						P-1 Line Item Number / Title: 0933 / LHA/LHD Midlife						
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	34.093	22.768	4.287	37.694	0.000	37.694	92.185	93.779	137.833	97.490	180.883	701.012
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	34.093	22.768	4.287	37.694	0.000	37.694	92.185	93.779	137.833	97.490	180.883	701.012
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	34.093	22.768	4.287	37.694	0.000	37.694	92.185	93.779	137.833	97.490	180.883	701.012
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Description:												
The FY 2019 funding request was reduced by \$.193 million to reflect the Department of Navy’s effort to support the Office of Management and Budget directed reforms for Efficiency and Effectiveness that include a lean, accountable, more efficient government.												
The FY 2019 funding request was reduced by \$3.714 million to account for the availability of prior year execution balances.												
This budget provides funding for modernization of Amphibious Assault Ships.												
Modernization efforts include the procurement and installation of: High Efficiency Small-Capacity (HES-C) Air Conditioning Compressors; Brushless Generators for the PMP; main feed pump replacement; Shipboard Air Traffic Control Communications (SATCC); and Navigation Critical Data System (NCDS/NavCrit).												
HES-C provides additional air conditioning capability to support growing electronic cooling requirements. Brushless Generator replacement will reduce down time, total ownership costs, and maintenance costs associated with antiquated brush type generators. Main feed pump procurement and install replaces obsolete main feed pumps for the main propulsion boiler. Additionally, funding supports procurement and installation of SATCC and Navigation Critical Data Distribution (NavCrit) systems in support of capability requirements on Amphibious Assault Ships.												
[P40A / Conjunctive HM&E Alterations]: LH002 Conjunctive HM&E Alterations includes design integration, equipment procurement, recurring equipment engineering, equipment integration and Integrated Logistics Services (ILS).												
[P40A / Conjunctive HM&E Alterations]: LH002 Conjunctive HM&E Alterations includes design integration, equipment procurement, recurring equipment engineering, equipment integration and Integrated Logistics Services (ILS).												
[P40A / DC & Ballast Control]: (P40A)												
[P40A / LH5IN-LHD MIDLIFE]: LH5IN: Conjunctive HM&E Alteration Installation include the DSA, Planning and Installation costs associated with Conjunctive HM&E Alterations including Degaussing Improvements, HYDRA LHD Upgrades, SCS-Gov LHD Upgrades, IVCN Tech Refresh, Amplified Announcing System Upgrades, Digital DCSS Upgrades, ICT Upgrades, and IVN Upgrades.												

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy				Date: February 2018	
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment				P-1 Line Item Number / Title: 0933 / LHA/LHD Midlife	
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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	LHA/LHD Midlife				- / 0.000	- / 9.208	- / -	- / 23.555	- / -	- / 23.555
P-3a	1 / LH001 - LHD Midlife, Brushless Generator for PMP (TBD)				- / 28.696	- / 9.719	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	2 / LH001 - LHD Midlife HVAC IMPROVEMENTS (HESC) (TBD)				- / 1.612	- / 1.587	- / 0.000	- / 6.785	- / 0.000	- / 6.785
P-3a	3 / LH001 - Main Feed Pump (TBD)				- / 0.885	- / 0.758	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	4 / LH001-Shipboard Air Traffic Control Communication (SATCC) (TBD)				- / 1.820	- / 0.000	- / 0.000	- / 0.360	- / 0.000	- / 0.360
P-3a	5 / LH001- Navigation Critical Data Distribution (NavCrit) (TBD)				- / 1.080	- / 1.496	- / 4.287	- / 1.577	- / 0.000	- / 1.577
P-3a	6 / LH001 Propulsion and Auxiliary Control System (PACS) (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 5.417	- / 0.000	- / 5.417
P-3a	7 / LH001 - Power Management Platform (Electric Plant Control) (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-40	Total Gross/Weapon System Cost				- / 34.093	- / 22.768	- / 4.287	- / 37.694	- / 0.000	- / 37.694

Exhibits Schedule					FY 2020	FY 2021	FY 2022	FY 2023	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	LHA/LHD Midlife				- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / LH001 - LHD Midlife, Brushless Generator for PMP (TBD)				- / 0.665	- / 2.982	- / 10.310	- / 7.860	- / 12.434	- / 72.666
P-3a	2 / LH001 - LHD Midlife HVAC IMPROVEMENTS (HESC) (TBD)				- / 1.900	- / 8.226	- / 0.000	- / 0.000	- / 0.000	- / 20.110
P-3a	3 / LH001 - Main Feed Pump (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 2.721	- / 5.214	- / 9.578
P-3a	4 / LH001-Shipboard Air Traffic Control Communication (SATCC) (TBD)				- / 3.338	- / 2.020	- / 0.000	- / 0.000	- / 0.000	- / 7.538
P-3a	5 / LH001- Navigation Critical Data Distribution (NavCrit) (TBD)				- / 7.339	- / 6.907	- / 8.586	- / 1.350	- / 11.812	- / 44.434
P-3a	6 / LH001 Propulsion and Auxiliary Control System (PACS) (TBD)				- / 12.095	- / 15.593	- / 32.410	- / 33.449	- / 72.815	- / 171.779
P-3a	7 / LH001 - Power Management Platform (Electric Plant Control) (TBD)				- / 10.973	- / 3.918	- / 34.242	- / 15.779	- / 49.856	- / 114.768
P-40	Total Gross/Weapon System Cost				- / 92.185	- / 93.779	- / 137.833	- / 97.490	- / 180.883	- / 701.012

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

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

Justification:
Funds provide for modernization of Amphibious Assault Ships.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy															Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9								P-1 Line Item Number / Title: 0933 / LHA/LHD Midlife							Aggregated Items Title: LHA/LHD Midlife				

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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) LH002 Conjunctive HM&E Alterations																				
1.1) Conjunctive HM&E Alterations	A		-	-	-	-	-	9.208	-	-	-	-	-	0.023	-	-	-	-	-	0.023
1.3) HYDRA LHD Upgrades ⁽¹⁾	A		-	-	-	-	-	-	-	-	-	-	-	3.217	-	-	-	-	-	3.217
1.4) SCS-GOV LHD ⁽²⁾	A		-	-	-	-	-	-	-	-	-	-	-	1.770	-	-	-	-	-	1.770
1.5) IVCN Tech Refresh ⁽³⁾	A		-	-	-	-	-	-	-	-	-	-	-	4.944	-	-	-	-	-	4.944
1.6) Amplified Announcing System Upgrade ⁽⁴⁾	A		-	-	-	-	-	-	-	-	-	-	-	2.755	-	-	-	-	-	2.755
1.7) Digital DCSS Upgrades ⁽⁵⁾	A		-	-	-	-	-	-	-	-	-	-	-	1.092	-	-	-	-	-	1.092
1.8) ICT Upgrade ⁽⁶⁾	A		-	-	-	-	-	-	-	-	-	-	-	3.061	-	-	-	-	-	3.061
1.10) DC & Ballast Control	A		-	-	-	-	-	-	-	-	-	-	-	5.264	-	-	-	-	-	5.264
1.11) LHD Cyber Resiliency ⁽⁷⁾	A		-	-	-	-	-	-	-	-	-	-	-	0.533	-	-	-	-	-	0.533
Subtotal: 1) LH002 Conjunctive HM&E Alterations			-	-	0.000	-	-	9.208	-	-	-	-	-	22.659	-	-	-	-	-	22.659
2) LH5IN-LHD MIDLIFE																				
2.1) LH5IN LHD Mid-Life HM&E Alteration Installation	A		-	-	-	-	-	-	-	-	-	-	-	0.896	-	-	-	-	-	0.896
Subtotal: 2) LH5IN-LHD MIDLIFE			-	-	0.000	-	-	-	-	-	-	-	-	0.896	-	-	-	-	-	0.896
Total			-	-	0.000	-	-	9.208	-	-	-	-	-	23.555	-	-	-	-	-	23.555

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

Footnotes:

⁽¹⁾ (P40A) LHD 1 Class Hierarchical Yet Dynamically Reprogrammable Architecture (HYDRA) modernization replaces the out of production P7100/MRK fixed and portable radios with XG-75 radios, replaces obsolete AN/SRC-55 (HYDRA) electronic components, adds vital wireless encrypted communications capability in below deck spaces, and incorporates the industry standard Association of Public Safety Communications Officials (APCO) P-25 signaling protocol. HYDRA Wireless Communication System provides wireless communications capability supporting Flight Deck, Small Boat operations, Damage Control, and Security efforts. HYDRA modernization will create commonality with equipment installed in the LSD 41/49 class, CG-47 class, and CVN-68 class, as well as new construction including LHA-7, LPD-28, CVN-79 and follow-on hulls.

⁽²⁾ (P40A) SCS-GOV (LHD7/8, LHA 6/7): The Ship Control System-Government (SCS-GOV) supports the standardization of hardware, software and design of the surface ship Ship Control Systems (SCS) to address hardware and software obsolescence issues. The installation will bring commonality across the LHD 1-8 and LHA-6 hulls. SCS-GOV replaces the analog Ship Control System (SCS) with a digital SCS. Analog systems are very maintenance intensive constantly requiring alignment of the amplifiers, indicators, and other transmitting devices. The existing system is also largely obsolete requiring cannibalization from decommissioned ships.

⁽³⁾ (P40A) Integrated Voice Communications Network (IVCN) Tech Refresh: Unifies the obsolete three Integrated Voice Network (IVN) and one J-Dial Private Branch exchange (PBX) switches into a single survivable and redundant distributed IP network. Replaces obsolete analog and digital telephone terminals. Includes a Wireless refresh with Digital Enhanced Cordless Telephone (DECT) technology.

⁽⁴⁾ Amplified Announcing System Upgrade: Replace the obsolete 1/2/3/5/6/10MC Announcing System with a common survival Digital Integrated Announcing System (DIAS).

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0933 / LHA/LHD Midlife	Aggregated Items Title: LHA/LHD Midlife
⁽⁵⁾ (P40A) Digital Defense Communications Subsystem (DCSS) Upgrade: Replaces four full size, 23", obsolete cabinets on LHD 5-7 and two full size, 23", legacy cabinets on LHD 8 and LHA 6 with two 2U ,19" rack mountable IP conference servers. Exterior net terminals and interior non-operational or materially deficient net terminals will be replaced. ⁽⁶⁾ (P40A) Integrated Communication Terminals (ICT) modernization replaces the obsolete 7300-Series Programmable Integrated Communications Terminals (PICTs). ICT modernization will align LHD1 - 7 configurations with LHD 8 to meet United States Marine Corp (USMC) requirements. ⁽⁷⁾ This solution proposed would implement core cyber resiliency principles, it would implement a Defense-in-Depth Functional Implementation Architecture (DFIA) and meet the requirements of the standards released by the Information Assurance Technical Authority Board (IA TAB) across all the H,M&E systems deploying the ability to protect, detect, react, and restore in a cyber contested environment		

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0933 / LHA/LHD Midlife						Modification Number / Title: 1 / LH001 - LHD Midlife, Brushless Generator for PMP		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	28.696	9.719	0.000	0.000	0.000	0.000	0.665	2.982	10.310	7.860	12.434	72.666
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	28.696	9.719	0.000	0.000	0.000	0.000	0.665	2.982	10.310	7.860	12.434	72.666
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	28.696	9.719	0.000	0.000	0.000	0.000	0.665	2.982	10.310	7.860	12.434	72.666
<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: Brushless Generator Upgrade replaces a LHD's (5) brush-type Ship's Service Turbine Generators that are plagued by severe reliability, maintenance and obsolescence problems. Brushless Generator Upgrade will reduce both S/F and depot level maintenance requirements, and increase a LHD's electric plant Operational Availability (Ao).												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0933 / LHA/LHD Midlife					Modification Number / Title: 1 / LH001 - LHD Midlife, Brushless Generator for PMP			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: LHD Midlife PMP				Modification Type: TBD				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> LH001 - LHD Midlife, Brushless Generator for PMP													
B Kits													
Recurring													
1.1.1) Brushless Generator for PMP - NonOrganic ⁽⁸⁾	2 / 13.199	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 6.590	- / -	3 / 19.789	
<i>Subtotal: Recurring</i>	- / 13.199	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 6.590	- / 0.000	- / 19.789	
<i>Subtotal: LH001 - LHD Midlife, Brushless Generator for PMP</i>	2 / 13.199	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 6.590	- / -	3 / 19.789	
<i>Subtotal: Procurement, All Modification Items</i>	- / 13.199	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 6.590	- / 0.000	- / 19.789	
Support (All Modification Items)													
2.1) Non-Recurring Engineering	- / 10.197	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.276	- / -	- / 10.473	
<i>Subtotal: Support</i>	- / 10.197	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.276	- / 0.000	- / 10.473	
Installation													
<i>Modification Item 1 of 1:</i> LH001 - LHD Midlife, Brushless Generator for PMP	- / 5.300	- / 9.719	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.665	- / 2.982	- / 10.310	- / 0.994	- / 12.434	- / 42.404	
<i>Subtotal: Installation</i>	- / 5.300	- / 9.719	- / -	- / -	- / -	- / -	- / 0.665	- / 2.982	- / 10.310	- / 0.994	- / 12.434	- / 42.404	
Total													
Total Cost (Procurement + Support + Installation)	28.696	9.719	0.000	0.000	0.000	0.000	0.665	2.982	10.310	7.860	12.434	72.666	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0933 / LHA/LHD Midlife										Modification Number / Title: 1 / LH001 - LHD Midlife, Brushless Generator for PMP																
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:																					
Modification Item 1 of 1: LH001 - LHD Midlife, Brushless Generator for PMP																															
Manufacturer Information																															
Manufacturer Name: KATO ENGINEERING										Manufacturer Location: MN																					
Administrative Leadtime (in Months): 0										Production Leadtime (in Months): 24																					
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023																								
Contract Dates							Jan 2023																								
Delivery Dates							Jan 2025																								
Installation Information																															
Method of Implementation: AIT/Industrial:: Installation Name: Brushless Generator for PMP																															
Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total																			
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																			
Prior Years	0 / 5.300	1 / 9.719	- / -	- / -	- / -	- / -	0 / 0.665	0 / 2.982	1 / 10.310	0 / 0.497	0 / 0.000	2 / 29.473																			
FY 2017	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.497	1 / 12.434	1 / 12.931																			
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																			
Total	0 / 5.300	1 / 9.719	- / -	- / -	- / -	- / -	0 / 0.665	0 / 2.982	1 / 10.310	0 / 0.994	1 / 12.434	3 / 42.404																			
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	3
Out	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	3
Footnotes:																															
⁽⁸⁾ Note (10) In FY16 one ship-set was procured for install in FY18, but was deferred due to budget marks. This ship-set will be installed in FY22.																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0933 / LHA/LHD Midlife					Modification Number / Title: 2 / LH001 - LHD Midlife HVAC IMPROVEMENTS (HESC)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1.612	1.587	0.000	6.785	0.000	6.785	1.900	8.226	0.000	0.000	0.000	20.110
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1.612	1.587	0.000	6.785	0.000	6.785	1.900	8.226	0.000	0.000	0.000	20.110
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1.612	1.587	0.000	6.785	0.000	6.785	1.900	8.226	0.000	0.000	0.000	20.110
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: The High Efficiency Super Capacity (HES-C) replaces the ship's existing 300-ton Air Conditioners (A/C) with a 450-ton capable A/C plant that meet the demand of new electronic warfare systems and will improve operational availability of the A/C plant.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0933 / LHA/LHD Midlife						Modification Number / Title: 2 / LH001 - LHD Midlife HVAC IMPROVEMENTS (HESC)			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: LHD Midlife HVAC				Modification Type: TBD				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> LH001 - LHD Midlife HVAC IMPROVEMENTS (HESC)													
B Kits													
Recurring													
1.1.1) HVAC IMPROVEMENTS (HESC) - NonOrganic	- / -	- / -	- / -	1 / 6.256	- / -	1 / 6.256	- / -	- / -	- / -	- / -	- / -	1 / 6.256	
<i>Subtotal: Recurring</i>	<i>- / 0.000</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 6.256</i>	<i>- / -</i>	<i>- / 6.256</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 0.000</i>	<i>- / 6.256</i>	
<i>Subtotal: LH001 - LHD Midlife HVAC IMPROVEMENTS (HESC)</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>1 / 6.256</i>	<i>- / -</i>	<i>1 / 6.256</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>1 / 6.256</i>	
<i>Subtotal: Procurement, All Modification Items</i>	<i>- / 0.000</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 6.256</i>	<i>- / -</i>	<i>- / 6.256</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 0.000</i>	<i>- / 6.256</i>	
Support (All Modification Items)													
2.1) Engineering Services ⁽⁹⁾	- / 1.612	- / 1.587	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 3.199	
<i>Subtotal: Support</i>	<i>- / 1.612</i>	<i>- / 1.587</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 0.000</i>	<i>- / 3.199</i>	
Installation													
<i>Modification Item 1 of 1:</i> LH001 - LHD Midlife HVAC IMPROVEMENTS (HESC)	- / 0.000	- / 0.000	- / 0.000	- / 0.529	- / 0.000	- / 0.529	- / 1.900	- / 8.226	- / 0.000	- / 0.000	- / 0.000	- / 10.655	
<i>Subtotal: Installation</i>	<i>- / 0.000</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 0.529</i>	<i>- / -</i>	<i>- / 0.529</i>	<i>- / 1.900</i>	<i>- / 8.226</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 0.000</i>	<i>- / 10.655</i>	
Total													
Total Cost (Procurement + Support + Installation)	1.612	1.587	0.000	6.785	0.000	6.785	1.900	8.226	0.000	0.000	0.000	20.110	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0933 / LHA/LHD Midlife										Modification Number / Title: 2 / LH001 - LHD Midlife HVAC IMPROVEMENTS (HESC)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: LH001 - LHD Midlife HVAC IMPROVEMENTS (HESC)																															
Manufacturer Information																															
Manufacturer Name: TBD															Manufacturer Location: TBD																
Administrative Leadtime <i>(in Months)</i> : 0															Production Leadtime <i>(in Months)</i> : 24																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates										Feb 2019																					
Delivery Dates										Feb 2021																					
Installation Information																															
Method of Implementation: AIT:: Installation Name: HVAC IMPROVEMENTS (HESC)																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		To Complete		Total							
		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>							
Prior Years		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2017		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2019		- / -		- / -		- / -		0 / 0.529		0 / 0.000		0 / 0.529		0 / 1.900		1 / 8.226		- / -		- / -		0 / 0.000		1 / 10.655							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
Total		- / -		- / -		- / -		0 / 0.529		0 / 0.000		0 / 0.529		0 / 1.900		1 / 8.226		- / -		- / -		0 / 0.000		1 / 10.655							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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
Footnotes: ⁽⁹⁾ FY 2017 funds are required for significant engineering services for Heating, Ventilation, and Air Conditioning (HVAC) improvements, which are required to resolve obsolescence issues in advance of the ship availability start in Q1 FY20. Funding In FY17 will be used to complete the HES-C Feasibility study, which will include NRE costs for the design of the chiller, production ROM costs, as well as start laying out the																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0933 / LHA/LHD Midlife	Modification Number / Title: 2 / LH001 - LHD Midlife HVAC IMPROVEMENTS (HESC)
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
interface control document for the chiller that will be required by PY to install. In FY17 detailed design and production prototype manufacture will begin and anticipates put that unit through full first article testing to support FY 19 procurement.		

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0933 / LHA/LHD Midlife	Modification Number / Title: 3 / LH001 - Main Feed Pump

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	0.885	0.758	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.721	5.214	9.578
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	0.885	0.758	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.721	5.214	9.578
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	0.885	0.758	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.721	5.214	9.578
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

[Main Feed Pump] Replacement of obsolete main feed pump with new shock qualified unit to meet service life.

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0933 / LHA/LHD Midlife						Modification Number / Title: 3 / LH001 - Main Feed Pump			
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> LH001 - Main Feed Pump													
B Kits													
Recurring													
1.1.1) Main Feed Pump - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 2.440	- / -	1 / 2.440
<i>Subtotal: Recurring</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 2.440	- / 0.000	- / 2.440
<i>Subtotal: LH001 - Main Feed Pump</i>	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 2.440	- / -	1 / 2.440
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 2.440	- / 0.000	- / 2.440
Support (All Modification Items)													
2.1) Non-Recurring Engineering ⁽¹⁰⁾	- / 0.885	- / 0.758	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.643
<i>Subtotal: Support</i>	- / 0.885	- / 0.758	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 1.643
Installation													
<i>Modification Item 1 of 1:</i> LH001 - Main Feed Pump	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.281	- / 5.214	- / 5.495
<i>Subtotal: Installation</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.281	- / 5.214	- / 5.495
Total													
Total Cost (Procurement + Support + Installation)	0.885	0.758	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.721	5.214	9.578

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0933 / LHA/LHD Midlife										Modification Number / Title: 3 / LH001 - Main Feed Pump											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: LH001 - Main Feed Pump																															
Manufacturer Information																															
Manufacturer Name: TBD															Manufacturer Location: TBD																
Administrative Leadtime <i>(in Months)</i> : 0															Production Leadtime <i>(in Months)</i> : 24																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates																						Jan 2023									
Delivery Dates																						Jan 2025									
Installation Information																															
Method of Implementation: Industrial:: Installation Name: Main Feed Pump																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total																		
		<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>																
Prior Years		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																	
FY 2017		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																	
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																	
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																	
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																	
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																	
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																	
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.281	1 / 5.214	1 / 5.495																	
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																	
Total		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.281	1 / 5.214	1 / 5.495																	
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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
Footnotes: ⁽¹⁰⁾ Non-reoccurring engineering in FY17 required for Main Feed Pump to procure test article and set up environmental quality testing for test article to ensure design is technically mature prior to procurement of first Ship-set. First procurement deferred from FY20 to FY23 due to budget cuts.																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy						Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0933 / LHA/LHD Midlife				Modification Number / Title: 4 / LH001-Shipboard Air Traffic Control Communication (SATCC)			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	1.820	0.000	0.000	0.360	0.000	0.360	3.338	2.020	0.000	0.000	0.000	7.538
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	1.820	0.000	0.000	0.360	0.000	0.360	3.338	2.020	0.000	0.000	0.000	7.538
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	1.820	0.000	0.000	0.360	0.000	0.360	3.338	2.020	0.000	0.000	0.000	7.538
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Shipboard Air Traffic Control Communication (SATCC) provides highly reliable Air Traffic Control (ATC) voice communications between pilots and ATC team, command and control, and connection to administrative jdal services throughout the ship. This installs a ruggedized, Commercial off the Shelf (COTS) system that addresses Safety of Flight concerns due to cumbersome communication controls that degrades ATC's situational awareness during flight operations. This install will establish commonality across CVN, LHD and LHA classes.

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0933 / LHA/LHD Midlife					Modification Number / Title: 4 / LH001-Shipboard Air Traffic Control Communication (SATCC)			
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: LH001-Shipboard Air Traffic Control Communication (SATCC)</i>													
B Kits													
Recurring													
1.1.1) Shipboard Air Traffic Control Communication (SATCC) - NonOrganic	1 / 1.820	- / -	- / -	- / -	- / -	- / -	1 / 0.984	- / -	- / -	- / -	- / -	2 / 2.804	
<i>Subtotal: Recurring</i>	<i>- / 1.820</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 0.984</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 0.000</i>	<i>- / 2.804</i>	
<i>Subtotal: LH001-Shipboard Air Traffic Control Communication (SATCC)</i>	<i>1 / 1.820</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>1 / 0.984</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>2 / 2.804</i>	
<i>Subtotal: Procurement, All Modification Items</i>	<i>- / 1.820</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 0.984</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 0.000</i>	<i>- / 2.804</i>	
Installation													
<i>Modification Item 1 of 1: LH001-Shipboard Air Traffic Control Communication (SATCC)</i>	<i>- / 0.000</i>	<i>- / 0.000</i>	<i>- / 0.000</i>	<i>- / 0.360</i>	<i>- / 0.000</i>	<i>- / 0.360</i>	<i>- / 2.354</i>	<i>- / 2.020</i>	<i>- / 0.000</i>	<i>- / 0.000</i>	<i>- / 0.000</i>	<i>- / 4.734</i>	
<i>Subtotal: Installation</i>	<i>- / 0.000</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 0.360</i>	<i>- / -</i>	<i>- / 0.360</i>	<i>- / 2.354</i>	<i>- / 2.020</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 0.000</i>	<i>- / 4.734</i>	
Total													
Total Cost (Procurement + Support + Installation)	1.820	0.000	0.000	0.360	0.000	0.360	3.338	2.020	0.000	0.000	0.000	7.538	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0933 / LHA/LHD Midlife										Modification Number / Title: 4 / LH001-Shipboard Air Traffic Control Communication (SATCC)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: LH001-Shipboard Air Traffic Control Communication (SATCC)																															
Manufacturer Information																															
Manufacturer Name: VARIOUS															Manufacturer Location: TBD																
Administrative Leadtime (in Months): 0															Production Leadtime (in Months): 12																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates																						Jan 2022									
Delivery Dates																						Jan 2023									
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: Shipboard Air Traffic Control Communication (SATCC)																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		- / -		- / -		- / -		0 / 0.360		0 / 0.000		0 / 0.360		1 / 1.990		- / -		- / -		- / -		0 / 0.000		1 / 2.350							
FY 2017		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.364		1 / 2.020		- / -		- / -		0 / 0.000		1 / 2.384							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		- / -		- / -		- / -		0 / 0.360		0 / 0.000		0 / 0.360		1 / 2.354		1 / 2.020		- / -		- / -		0 / 0.000		2 / 4.734							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	2
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	2

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Exhibit P-3a, Individual Modification: PB 2019 Navy					Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9			P-1 Line Item Number / Title: 0933 / LHA/LHD Midlife			Modification Number / Title: 5 / LH001- Navigation Critical Data Distribution (NavCrit)	

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

Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1.080	1.496	4.287	1.577	0.000	1.577	7.339	6.907	8.586	1.350	11.812	44.434
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1.080	1.496	4.287	1.577	0.000	1.577	7.339	6.907	8.586	1.350	11.812	44.434
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1.080	1.496	4.287	1.577	0.000	1.577	7.339	6.907	8.586	1.350	11.812	44.434
<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 Navigation Critical Distribution System (NCDS) procurements will be installed on LHD Class ships to replace and consolidate current analog Interior Communications (IC) data signals on the MK 70 and IC Switchboards, as well as analog indicators throughout the ships. The removal of the AN/USQ-82(V) Shipboard Data Multiplexer System (SDMS) will also be included. Network switches will be installed to provide data transmission from the NAVSSI Real Time Subsystem (RTS) to all clients and devices that require navigation data. Input Output Controllers (IOC) will be installed to convert the Navigation Sensor System Interface (NAVSSI) Standard Navigation Message from Ethernet to the required analog signal. Programmable Logic Controllers will be installed to handle all Navigation related alarms. Navigation Displays and Navigation Management Data Terminals (Alarm Panels) will be installed in various locations to provide the NAVCERT required data and alarms in the appropriate locations. A distributed IRIG-B timing architecture is also included, which includes IRIG-B clocks.

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0933 / LHA/LHD Midlife						Modification Number / Title: 5 / LH001- Navigation Critical Data Distribution (NavCrit)			
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: LH001- Navigation Critical Data Distribution (NavCrit)</i>													
<i>B Kits</i>													
<i>Recurring</i>													
1.1.1) Navigation Critical Data Distribution (NavCrit) - NonOrganic ⁽¹¹⁾	1 / 1.080	1 / 1.116	- / -	1 / 1.157	- / -	1 / 1.157	1 / 1.156	1 / 1.199	1 / 1.221	- / -	- / -	6 / 6.929	
<i>Subtotal: Recurring</i>	- / 1.080	- / 1.116	- / -	- / 1.157	- / -	- / 1.157	- / 1.156	- / 1.199	- / 1.221	- / -	- / 0.000	- / 6.929	
<i>Subtotal: LH001- Navigation Critical Data Distribution (NavCrit)</i>	1 / 1.080	1 / 1.116	- / -	1 / 1.157	- / -	1 / 1.157	1 / 1.156	1 / 1.199	1 / 1.221	- / -	- / -	6 / 6.929	
<i>Subtotal: Procurement, All Modification Items</i>	- / 1.080	- / 1.116	- / -	- / 1.157	- / -	- / 1.157	- / 1.156	- / 1.199	- / 1.221	- / -	- / 0.000	- / 6.929	
Installation													
<i>Modification Item 1 of 1: LH001- Navigation Critical Data Distribution (NavCrit)</i>	- / 0.000	- / 0.380	- / 4.287	- / 0.420	- / 0.000	- / 0.420	- / 6.183	- / 5.708	- / 7.365	- / 1.350	- / 11.812	- / 37.505	
<i>Subtotal: Installation</i>	- / 0.000	- / 0.380	- / 4.287	- / 0.420	- / -	- / 0.420	- / 6.183	- / 5.708	- / 7.365	- / 1.350	- / 11.812	- / 37.505	
Total													
Total Cost (Procurement + Support + Installation)	1.080	1.496	4.287	1.577	0.000	1.577	7.339	6.907	8.586	1.350	11.812	44.434	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0933 / LHA/LHD Midlife										Modification Number / Title: 5 / LH001- Navigation Critical Data Distribution (NavCrit)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: LH001- Navigation Critical Data Distribution (NavCrit)																															
Manufacturer Information																															
Manufacturer Name: VARIOUS															Manufacturer Location: TBD																
Administrative Leadtime (<i>in Months</i>): 0															Production Leadtime (<i>in Months</i>): 24																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates		Dec 2016								Feb 2019				Jun 2020				Jun 2021				Jan 2022									
Delivery Dates		Dec 2018								Feb 2021				Jun 2022				Jun 2023				Jan 2024									
Installation Information																															
Method of Implementation: Industrial:: Installation Name: Navigation Critical Data Distribution (NavCrit)																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		- / -		- / -		- / -		0 / 0.420		0 / 0.000		0 / 0.420		1 / 4.452		- / -		- / -		- / -		0 / 0.000		1 / 4.872							
FY 2017		- / -		0 / 0.380		1 / 4.287		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		1 / 4.667							
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		0 / 1.377		1 / 4.084		- / -		- / -		0 / 0.000		1 / 5.461							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.354		0 / 1.263		1 / 5.748		- / -		0 / 0.000		1 / 7.365							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.361		0 / 1.321		- / -		1 / 5.856		1 / 7.538							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.296		0 / 1.350		1 / 5.956		1 / 7.602							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		- / -		0 / 0.380		1 / 4.287		0 / 0.420		0 / 0.000		0 / 0.420		1 / 6.183		1 / 5.708		1 / 7.365		0 / 1.350		2 / 11.812		6 / 37.505							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	1	-	-	-	-	2	6
Out	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	3	6
Footnotes: ⁽¹¹⁾ NAVCRIT must be installed conjunctive with both SSDS MK II and CIC Room Rearrangement SCDs. Budget/funding must remain aligned across the FYDP. Increased install cost from FY 21 to FY 22 is greater than the inflation rate due to the difference in port man-day rate.																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0933 / LHA/LHD Midlife					Modification Number / Title: 6 / LH001 Propulsion and Auxiliary Control System (PACS)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	0.000	0.000	5.417	0.000	5.417	12.095	15.593	32.410	33.449	72.815	171.779
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	0.000	0.000	5.417	0.000	5.417	12.095	15.593	32.410	33.449	72.815	171.779
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	0.000	0.000	5.417	0.000	5.417	12.095	15.593	32.410	33.449	72.815	171.779
<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: [Propulsion and Auxiliary Control System (PACS) procurement] Damage Control (DC) & Ballast Control: Includes the installation of the DC & Ballast Control Systems as well as the Propulsion and Auxiliary Control Systems (PACS). The Damage Control System (DCS) and Ballast Control System (BCS) replace the existing consoles for the Ballast/DeBallast, Fireman, Fire Fighting, AFFF, and Tank Level Indication systems. This new system will provide greater situational awareness to watch standers as well as address critical obsolescence issue with the existing consoles. The PACS installation includes HM&E Network and Zonal Uninterruptible Power Supply (UPS) infrastructure necessary for the safety critical Ballast Control Console and Damage Control Console Replacement and also upgrades the Interior Communication System Monitoring (IC/SM) alarm switchboards.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0933 / LHA/LHD Midlife						Modification Number / Title: 6 / LH001 Propulsion and Auxiliary Control System (PACS)			
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: LH001 Propulsion and Auxiliary Control System (PACS)													
B Kits													
Recurring													
1.1.1) Propulsion and Auxiliary Control System (PACS) procurement - NonOrganic ⁽¹²⁾	- / -	- / -	- / -	- / -	- / -	- / -	1 / 5.712	1 / 5.826	1 / 5.943	1 / 6.061	1 / 6.183	5 / 29.725	
Subtotal: Recurring	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / 5.712	- / 5.826	- / 5.943	- / 6.061	- / 6.183	- / 29.725	
Subtotal: LH001 Propulsion and Auxiliary Control System (PACS)	- / -	- / -	- / -	- / -	- / -	- / -	1 / 5.712	1 / 5.826	1 / 5.943	1 / 6.061	1 / 6.183	5 / 29.725	
Subtotal: Procurement, All Modification Items	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / 5.712	- / 5.826	- / 5.943	- / 6.061	- / 6.183	- / 29.725	
Support (All Modification Items)													
2.1) Propulsion and Auxiliary Control System (PACS) Eng Services	- / -	- / -	- / -	- / 5.417	- / -	- / 5.417	- / 5.694	- / 6.244	- / 6.369	- / 7.064	- / 7.206	- / 37.994	
Subtotal: Support	- / 0.000	- / -	- / -	- / 5.417	- / -	- / 5.417	- / 5.694	- / 6.244	- / 6.369	- / 7.064	- / 7.206	- / 37.994	
Installation													
Modification Item 1 of 1: LH001 Propulsion and Auxiliary Control System (PACS)	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.689	- / 3.523	- / 20.098	- / 20.324	- / 59.426	- / 104.060	
Subtotal: Installation	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / 0.689	- / 3.523	- / 20.098	- / 20.324	- / 59.426	- / 104.060	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	0.000	5.417	0.000	5.417	12.095	15.593	32.410	33.449	72.815	171.779	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0933 / LHA/LHD Midlife										Modification Number / Title: 6 / LH001 Propulsion and Auxiliary Control System (PACS)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: LH001 Propulsion and Auxiliary Control System (PACS)																															
Manufacturer Information																															
Manufacturer Name: New MFG - Name															Manufacturer Location: TBD																
Administrative Leadtime (in Months): 0															Production Leadtime (in Months): 24																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates														Jun 2020				Jun 2021				Apr 2022				Jan 2023					
Delivery Dates														Jun 2022				Jun 2023				Apr 2024				Jan 2025					
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: Propulsion and Auxiliary Control System (PACS) procurement																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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 2017		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.689		0 / 2.524		1 / 16.807		- / -		0 / 0.000		1 / 20.020					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.999		0 / 2.574		1 / 17.112		0 / 0.000		1 / 20.685					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.717		0 / 2.626		1 / 17.454		1 / 20.797					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.586		1 / 20.482		1 / 21.068					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 21.490		1 / 21.490					
Total		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.689		0 / 3.523		1 / 20.098		1 / 20.324		3 / 59.426		5 / 104.060					
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	-	3	5
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	4	5
Footnotes: ⁽¹²⁾ Increase in Engineering Services from FY 20 to FY 21 and follows, is due to Engineering Services requirements for FY 22 and FY 23 install. Increased install cost from FY 22 to FY 23 is greater than the inflation rate due to the difference in port man-day rate.																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0933 / LHA/LHD Midlife					Modification Number / Title: 7 / LH001 - Power Management Platform (Electric Plant Control)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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	10.973	3.918	34.242	15.779	49.856	114.768
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	10.973	3.918	34.242	15.779	49.856	114.768
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	10.973	3.918	34.242	15.779	49.856	114.768
<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: [PMP (Set 19) Procurement] Power Management Platform (PMP) modernization converts legacy controls to a digital automated control system. This system gathers and combines all Electric plant data so that it is available at any electric plant control station. PMP simplifies multiple step control sequences into single step operations and makes possible control capabilities that were previously too cumbersome for operators to perform. i.e. Baseload, and Real / Reactive power balancing. PMP implements a gradual Ship Service Turbine Generator (SSTG) turbine startup/shutdown sequence which allows the turbine to achieve stabilized temperatures more consistently, reducing stress on components and contributing to prolonged service life. System automation reduces electrical system transients and stress on breaker components by employing a Zero Power Transfer (ZPT) strategy, which limits the current flow through an individual breaker to zero during open/close evolutions. Switchboard Breaker Upgrade and Power Management Platform (Electric Plant Controls) must be installed concurrently. Collectively, these two non-severable modernization efforts provide enhanced electric plant (EP) situational awareness, reliability flexibility, and survivability through replacement of obsolete breakers with breakers currently used in other ship classes and through installation of modern electric plant controls and alarms. Brushless Generator Install must be accomplished prior to or concurrent with Switchboard Breaker Upgrade and Power Management Platform (Electric Plant Controls).												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0933 / LHA/LHD Midlife						Modification Number / Title: 7 / LH001 - Power Management Platform (Electric Plant Control)			
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> LH001 - Power Management Platform (Electric Plant Control)													
B Kits													
Recurring													
1.1.1) PMP (Set 19) Procurement - NonOrganic ⁽¹³⁾	- / -	- / -	- / -	- / -	- / -	- / -	1 / 9.798	- / -	1 / 10.178	1 / 10.380	- / -	3 / 30.356	
<i>Subtotal: Recurring</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / 9.798	- / -	- / 10.178	- / 10.380	- / 0.000	- / 30.356	
<i>Subtotal: LH001 - Power Management Platform (Electric Plant Control)</i>	- / -	- / -	- / -	- / -	- / -	- / -	1 / 9.798	- / -	1 / 10.178	1 / 10.380	- / -	3 / 30.356	
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / 9.798	- / -	- / 10.178	- / 10.380	- / 0.000	- / 30.356	
Installation													
<i>Modification Item 1 of 1:</i> LH001 - Power Management Platform (Electric Plant Control)	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 1.030	- / 3.771	- / 23.959	- / 5.250	- / 49.856	- / 83.866	
<i>Subtotal: Installation</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / 1.030	- / 3.771	- / 23.959	- / 5.250	- / 49.856	- / 83.866	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	0.000	0.000	0.000	0.000	10.973	3.918	34.242	15.779	49.856	114.768	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0933 / LHA/LHD Midlife										Modification Number / Title: 7 / LH001 - Power Management Platform (Electric Plant Control)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: LH001 - Power Management Platform (Electric Plant Control)																															
Manufacturer Information																															
Manufacturer Name: TBD															Manufacturer Location: TBDBTD																
Administrative Leadtime (in Months): 0															Production Leadtime (in Months): 24																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates														Jun 2020								Apr 2022				Jan 2023					
Delivery Dates														Jun 2022								Apr 2022				Jan 2025					
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: PMP (Set 19) Procurement																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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 2017		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 1.030		0 / 3.771		1 / 22.888		- / -		0 / 0.000		1 / 27.689					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 1.071		1 / 3.922		0 / 23.813		1 / 28.806					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 1.328		1 / 26.043		1 / 27.371					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
Total		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 1.030		0 / 3.771		1 / 23.959		1 / 5.250		1 / 49.856		3 / 83.866					
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	1	3
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	2	3
Footnotes: ⁽¹³⁾ Recommend Power Management Platform (PMP) be installed concurrently with Brushless Generator to leverage access cuts and interference removal, reducing total install cost.																															

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment	P-1 Line Item Number / Title: 0935 / Pollution Control 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	408.626	16.510	17.293	20.883	0.000	20.883	24.063	23.233	23.627	24.122	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	408.626	16.510	17.293	20.883	0.000	20.883	24.063	23.233	23.627	24.122	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	408.626	16.510	17.293	20.883	0.000	20.883	24.063	23.233	23.627	24.122	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>)	-	0.078	0.129	0.044	-	0.044	-	-	-	-	-	0.251
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

POLLUTION CONTROL SYSTEMS/EQUIPMENT: This item provides funds for the procurement of pollution control systems and equipment that are required by Navy ships in order for them to comply with international regulations, federal laws, DOD Directives and Navy environmental protection regulations. These regulations, laws and directives restrict the discharge of oily waste, sewage, solid waste, plastic waste, medical waste and hazardous waste. Most of these applicable regulations require Navy ships to comply by fixed deadlines. Failure to comply carries potential personal, civil, and criminal liability, and significantly imposes constraints on the operational capabilities of Navy ships. In some instances, the compliance schedule has required an acceleration of the normal schedules in the procurement process.

SHORE BASED POLLUTION EQUIPMENT - (Logistics)

The shore based funds provide for equipment required to clean up Navy oil spills on the open sea as required by the Federal Water Pollution Control Act - Public Law 92-500. The law created a National Oil and Hazardous Substance Pollution Contingency Plan, and designates the Department of Defense as one of the primary agencies responsible for promotion of effective operation of the plan. The Supervisor of Salvage is assigned the responsibility to provide technical expertise, resources, and equipment for cleaning Navy-originated spills of oil and other hazardous material in coastal waters or the open sea. Major items of procurement are:

[P40A / HF040 FIELD SUPPORT SYSTEMS]: These systems provide the auxiliary support required to keep Navy oil spill responders operating in the field without significant lapse of response time in all Navy Areas of Responsibility (AoR) according to Federal Law 33 CFR 155 and 154 and implemented by OPNAV5090.1D. As such, many Navy areas of operation are in remote and austere parts of the world with little to no operational support available, therefore the inventory objectives of equipment procured under this cost code are set to support emergency personnel in responding to the Navy's worst case oil or hazardous substance (OHS) discharge scenario in all AoR's and to be pre-positioned in the Emergency Ship Salvage Material (ESSM) Bases world-wide. Systems include Boom Handling Boats, Boom Tending Boats, Personnel Transfer Boats, Field Command & Control Centers, Field Conference Centers, Field Rigging Lockers, Field Repair Workshops, Personnel Berthing Modules, Field-grade Satellite Communications Systems, and Oil Spill Aerial Surveillance Systems. Unit cost varies greatly between systems.

[P40A / HF051 OIL BOOM SYSTEMS]: These systems consist of inflatable or foam-filled oil booms of various sizes (18 inch, 26 inch, 42 inch). Inventory is based on the Federal requirements for Oil Spill Response Organizations (OSROs). Boom systems range in unit cost based on size (18 inch, 26 inch, 42 inch) and type (inflatable or non-inflatable). These systems include all associated equipment required to store, inflate, deploy, recover, and repair the boom, including lighting systems to mark the boom in navigable waterways. All inflatable boom systems also include shoreline transition booms to seal across beach areas. These systems are packaged in 8 foot x 8 foot x 20 foot standard shipping containers.

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment		P-1 Line Item Number / Title: 0935 / Pollution Control 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 / HF055 SALVAGE SUPPORT SYSTEMS]: These systems are a collection of small, special-purpose oil skimmers, containment booms, shoreline transition booms, transfer pumps, temporary oil storage, sorbents, and ancillary equipment intended as a stand-alone response package for small, salvage-related spills inside and adjacent to ships in distress or inland (river and lake) spills. These systems are packaged in an 8 foot x 8 foot x 20 foot standard shipping container.		
[P40A / HF056 EQUIPMENT CLEAN-UP SYSTEMS]: These systems provide a full array of tools and materials required to perform the extensive decontamination needed for oil spill and hazardous chemical response equipment and personnel during an operation and prior to demobilization once a spill has been contained and recovered.		
[P40A / HF057 OIL HANDLING SYSTEMS]: Oil handling systems provide the capability to recover and dispose of oil and debris during emergency oil spill response operations including temporary oil storage as required by 33 CFR 155 and 154. Equipment missions additionally include moving heavy oil or oil in cold conditions that exceed the capability of conventional skimmer systems and providing means of transferring oil from skimmers to temporary oil storage. Systems include Vacuum Pump Systems, Oil Bladder Transfer Systems, Annular Water Injection Systems, At-Sea Bladder Pumping Systems, and Temporary Oil Storage Systems (Bladders, Tanks, etc.)These different systems can range greatly in individual unit cost.		
[P40A / HF060 HOT TAP TRAINING SYSTEMS]: These systems are designed to train Fleet divers on the tools and techniques for penetrating into vessel oil tanks below the waterline. The hot tap training kit is a system that contains a cutting device, an underwater hydraulic drill to drive the cutting mechanism and all necessary flanges, fasteners, valves, pumps and ancillaries to use when tapping through shell plating into laden tanks to remove the contents. This training is required as a part of pre-deployment salvage preparations for Mobile Diving and Salvage Unit (MDSU) Companies to train for lightering or removal of oil from a vessel in distress.		
[P40A / HF062 LIGHTERING SYSTEMS]: These systems are specially designed for lightering oil from aboard ships in distress whose transfer systems are inoperative or inaccessible or for extracting oil from sunken vessels where drilling and pumping through the hull of the vessel is often necessary at depths up to 20,000 feet. Various pump sizes and types as well as extraction tools are packaged together in fly-away systems meant to pump oil product in almost any emergency scenario. These systems are packaged in 8 foot x 8 foot x 20 foot standard shipping containers.		
[P40A / HF063 VESSEL OF OPPORTUNITY SKIMMER SYSTEMS]: The Vessel of Opportunity Skimmer Systems are oil skimmers designed and packaged to be deployed aboard any vessel that is available during an emergency oil spill response operation with enough deck space to support the operating equipment. These systems allow for mechanical recovery of oil on the water in situations where traditional skimmers may not be practical, such as far offshore or in inclement weather or high currents. These systems include all the ancillary support equipment required to maintain oil spill recovery operations onboard a vessel for an extended period of time. These systems are packaged in an 8 foot x 8 foot x 20 foot standard shipping container with an 8 foot x 8 foot x 8 foot support container.		
[P40A / HF065 BOARDING KITS]: This is designed to be placed aboard a vessel with no power or support services. It contains all the safety and support equipment necessary to provide a team of salvors and pollution response personnel the means to work aboard a tanker or vessel in distress. This system includes certified SCBAs, non-sparking tools, gas monitors, various ladders, and communication devices all packaged in an 8 foot x 8 foot x 8 foot shipping container.		
[P40A / HF067 VESSEL SKIMMER SYSTEMS]: These systems are self-propelled skimmers designed for near-shore and low sea-state open ocean environments and are used in conjunction with oil containment boom for mechanical recovery of oil on the water. They are designed to be rapidly transportable to the scene of an oil spill.		
[P40A / HF031 POLLUTION CONTROL EQUIPMENT FIELD CHANGES]: HF031 - POLLUTION CONTROL EQUIPMENT FIELD CHANGES - Funds field changes for reliability and maintainability improvements and corrections of conventional pollution control equipment systems.		
Solid Waste Improvements: Air Warfare: Funding provided to support supplemental solid waste handling equipment on CVN platforms including compressed melt units and pulpers.		
[P40A / HF830 PRODUCTION ENGINEERING]: HF830 PRODUCTION ENGINEERING: Air conditioning plant kit and software quality control, technical manual and complete conversion instruction revisions, technical reports based on investigative efforts of OEM quality assurance or obsolescence issues, and support equipment removal from inactive ships or other Navy assets. Development of technical manuals, Planned Maintenance System (PMS), Provisioning Technical Documentation (PTD), Program Support Data (PSD) and allowance Parts List (APLs), engineering to manage procurement and material, and in support of design reviews.		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment		P-1 Line Item Number / Title: 0935 / Pollution Control 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		
[P3A / HF024 CFC-114 (R-114) AC CONVERSION]: HF024 - CFC CONVERSION PROGRAM The production of chlorofluorocarbon(CFC)-based refrigerants (including CFC-12 and CFC R-114) was prohibited after 31 DEC 95 by the Clean Air Act of 1990. Presidential Executive Order 13693 calls for federal agencies to " promote sustainable acquisition and procurement by ensuring that each of the following environmental performance and sustainability factors are included ... alternatives to ozone-depleting substances". The Navy is currently dependent on CFC-based refrigerants for the mission-critical cooling of (1) vital electronics and weapon systems, (2) food and medical stowage, and (3) inhabited spaces aboard surface ships and submarines. To counter the immediate threat of production cessation on uninterrupted Fleet operations, DoD directed the Defense Logistics Agency to establish a stockpile of CFC-based refrigerants. The stockpile was sized to support Fleet operations until the last CFC-based systems are retired or converted to ozone-friendly refrigerants. This program procures and installs conversion kits on existing CFC R-114 Air-Conditioning (A/C) plants onboard surface ships. The CFC R-114 conversion program began in FY 99 and is expected to complete FY2021. The inventory objective for CFC R-114 is 402 converted units. [P3A / HF024 CFC-114 (R-114) AC CONVERSION]: HF5IN - INSTALLATION OF EQUIPMENT - EXPEDITIONARY WARFARE Funding is for installation of equipment for the Fleet Modernization Program installations. HF6IN - INSTALLATION OF EQUIPMENT - SURFACE WARFARE Funding is for installation of equipment for the Fleet Modernization Program installations. [P3A - 2 / HF031 OPA IMPROVEMENTS]: Oil Pollution Abatement (OPA) Systems Improvements: Existing OPA systems have demonstrated poor operational availability, maintainability, and reliability. This comprehensive effort addresses the entire OPA system, from holding tanks to overboard discharge, leveraging recommended improvements new to the Fleet and approved, partially completed alterations. The alterations needed to correct design deficiencies are ship specific and require ship checks to confirm the current configuration as prior alterations may have completed one or several of the recommended improvements. The alterations may include, but are not limited to: installation of new tank level sensors; upgrades to the Oily Water Separator (OWS) and the Oil Content Monitor (OCM), correction of OWS suction problems, correction of OCM inlet & outlet piping including related of flush water piping configuration problems, and upgrade of oily waste transfer pump relief valve. Extensive work will occur with LHD-1 Class upgrades to convert the existing OWS to the VS-50 OWS and DDG-51 through DDG-88 ships will receive the Oily Waste Membrane System to produce an effluent that meets the 15 ppm maximum oil discharge requirement. [P3A - 3 / HF031 DRY WASTE PROCESSING SUITE IMPROVEMENTS]: Dry Waste Processing Suite Improvements: The Fleet's challenged to keep solid waste equipment operating and sanitary. The root cause of this is: 1) workload; 2) reliability; 3) the maintainability (parts availability); and 4) obsolescence. The improvement and application of current and new processing tools will ensure the safe and efficient management of these materials. The goal is to decrease labor-hours by improving operation and maintenance, increase system availability and address all current and projected obsolescence issues and reducing parts failures by redesign. Impacted equipment includes Compress Melt Units (CMUs), pulpers, shredders, incinerators, and compactors.		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy								Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment						P-1 Line Item Number / Title: 0935 / Pollution Control 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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	Pollution Control Equipment	P-5a			- / 63.654	- / 3.928	- / 3.240	- / 3.518	- / -	- / 3.518
P-3a	1 / HF024 CFC-114 (R-114) AC CONVERSION (AIT)				- / 338.528	- / 6.630	- / 6.262	- / 7.070	- / 0.000	- / 7.070
P-3a	2 / HF031 OPA IMPROVEMENTS (AIT)				- / 6.444	- / 5.952	- / 7.791	- / 10.295	- / 0.000	- / 10.295
P-3a	3 / HF031 DRY WASTE PROCESSING SUITE IMPROVEMENTS (AIT)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-40	Total Gross/Weapon System Cost				- / 408.626	- / 16.510	- / 17.293	- / 20.883	- / 0.000	- / 20.883
Exhibits Schedule					FY 2020	FY 2021	FY 2022	FY 2023	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	Pollution Control Equipment	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / HF024 CFC-114 (R-114) AC CONVERSION (AIT)				- / 7.085	- / 2.031	- / 0.000	- / 0.000	- / 0.000	- / 367.606
P-3a	2 / HF031 OPA IMPROVEMENTS (AIT)				- / 13.855	- / 18.316	- / 20.542	- / 20.627	- / 67.191	- / 171.013
P-3a	3 / HF031 DRY WASTE PROCESSING SUITE IMPROVEMENTS (AIT)				- / 0.000	- / 0.000	- / 0.000	- / 1.417	- / 168.813	- / 170.230
P-40	Total Gross/Weapon System Cost				- / 24.063	- / 23.233	- / 23.627	- / 24.122	Continuing	Continuing

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

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

Justification:

The FY 2019 funding request was reduced by \$0.304 million to reflect the Department of Navy's effort to support the Office of Management and Budget directed reforms for Efficiency and Effectiveness that include a lean, accountable, more efficient government.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy																Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9									P-1 Line Item Number / Title: 0935 / Pollution Control Equipment							Aggregated Items Title: Pollution Control Equipment					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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) LOGISTICS																					
1.1) HF040 FIELD SUPPORT SYSTEMS (1)(t)	A		294,423.73	59	17.371	360,500.00	6	2.163	349,500.00	2	0.699	-	-	-	-	-	-	-	-	-	
1.2) HF051 OIL BOOM SYSTEMS (†)	A		280,930.23	43	12.080	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1.3) HF055 SALVAGE SUPPORT SYSTEMS	A		397,000.00	4	1.588	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1.4) HF056 EQUIPMENT CLEAN-UP SYSTEMS (2)(†)	A		-	-	-	-	-	-	310,000.00	1	0.310	-	-	-	-	-	-	-	-	-	
1.5) HF057 OIL HANDLING SYSTEMS (3)(t)	A		290,142.86	7	2.031	-	-	-	150,666.67	6	0.904	-	-	-	-	-	-	-	-	-	
1.6) HF060 HOT TAP TRAINING SYSTEMS (†)	A		-	-	-	-	-	-	-	-	-	24,666.67	3	0.074	-	-	-	24,666.67	3	0.074	
1.7) HF062 LIGHTERING SYSTEMS (†)	A		268,900.00	10	2.689	393,000.00	1	0.393	-	-	-	-	-	-	-	-	-	-	-	-	
1.8) HF063 VESSEL OF OPPORTUNITY SKIMMER SYSTEMS (†)	A		198,600.00	20	3.972	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1.10) HF067 VESSEL SKIMMER SYSTEMS (†)	A		-	-	-	-	-	-	-	-	-	219,500.00	8	1.756	-	-	-	219,500.00	8	1.756	
Subtotal: 1) LOGISTICS			-	-	39.731	-	-	2.556	-	-	1.913	-	-	1.830	-	-	-	-	-	1.830	
2) EXPEDITIONARY WARFARE																					
2.1) HF031 POLLUTION CONTROL EQUIPMENT FIELD CHANGES (4)	A		-	-	1.988	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2.2) HF830 PRODUCTION ENGINEERING	A		-	-	3.711	-	-	-	-	-	-	-	-	0.185	-	-	-	-	-	0.185	
Subtotal: 2) EXPEDITIONARY WARFARE			-	-	5.699	-	-	-	-	-	-	-	-	0.185	-	-	-	-	-	0.185	
3) SURFACE WARFARE																					
3.1) HF031 POLLUTION CONTROL	A		-	-	4.390	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy															Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9								P-1 Line Item Number / Title: 0935 / Pollution Control Equipment							Aggregated Items Title: Pollution Control Equipment				

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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)
EQUIPMENT FIELD CHANGES ⁽⁵⁾																				
3.2) HF830 PRODUCTION ENGINEERING	A		-	-	7.663	-	-	0.300	-	-	0.180	-	-	0.366	-	-	-	-	-	0.366
Subtotal: 3) SURFACE WARFARE			-	-	12.053	-	-	0.300	-	-	0.180	-	-	0.366	-	-	-	-	-	0.366
4) AIR WARFARE																				
4.1) HF031 POLLUTION CONTROL EQUIPMENT FIELD CHANGES	A		-	-	6.171	-	-	1.072	-	-	1.147	-	-	1.137	-	-	-	-	-	1.137
Subtotal: 4) AIR WARFARE			-	-	6.171	-	-	1.072	-	-	1.147	-	-	1.137	-	-	-	-	-	1.137
Total			-	-	63.654	-	-	3.928	-	-	3.240	-	-	3.518	-	-	-	-	-	3.518

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

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

Footnotes:

- (1) HF040: Cost of all items includes design, engineering, procurement, manufacturing, outfitting with mandated safety equipment and personal protective equipment (PPE), packaging in 8 foot x 8 foot x 20 foot standard ISO shipping containers for fly-away capability, as well as generation of all necessary supporting documentation such as Maintenance Requirement Cards (MRCs), Navy operation manuals, NAVSEA engineering drawings and logistics support packages.
- (2) HF056: Inventory Objectives set at 1 system per Emergency Ship Salvage Material (ESSM) Base. Cost of all items includes design, engineering, procurement, manufacturing, outfitting with mandated safety equipment and personal protective equipment (PPE), packaging in 8 foot x 8 foot x 20 foot standard ISO shipping containers for fly-away capability, as well as generation of all necessary supporting documentation such as Maintenance Requirement Cards (MRCs), Navy operation manuals, NAVSEA engineering drawings and logistics support packages.
- (3) HF057: Cost of all items includes engineering and design, manufacturing, procurement, outfitting with mandated safety equipment and PPE for oil spill response operations, packaging in 8 foot x 8 foot x 20 foot standard shipping containers or flat racks for fly-away capability, as well as generation of all necessary supporting documentation such as Maintenance Requirement Cards (MRCs), Navy operation manuals, NAVSEA engineering drawings and logistics support packages.
- (4) HF031 Expeditionary Warfare: OPA Systems Improvements: PY 13, 14, 16 and FY 17-23 funding moved to P-3A HF031 OPA Improvements.
- (5) HF031 Surface Warfare: OPA Systems Improvements: PY16 and FY17-23 funding moved to P-3A OPA Improvements.

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Exhibit P-5a, Procurement History and Planning: PB 2019 Navy									Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0935 / Pollution Control Equipment					Aggregated Items: Pollution Control Equipment			
Item Number / Title [DODIC]	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1) LOGISTICS												
1.1) HF040 FIELD SUPPORT SYSTEMS ⁽¹⁾		2016	Metal Craft Marine, Inc. / Cape Vincent NY	C / IDIQ	WASHINGTON,DC	Mar 2016	Jan 2017	10	296,800.00	Y		
1.1) HF040 FIELD SUPPORT SYSTEMS ⁽¹⁾		2017	Metal Craft Marine, Inc. / Cape Vincent NY	C / IDIQ	WASHINGTON, DC	Feb 2017	Dec 2017	6	360,500.00	Y		
1.1) HF040 FIELD SUPPORT SYSTEMS ⁽¹⁾		2018	GPC / VA	C / CPAF	WASHINGTON, DC	Apr 2018	Dec 2018	2	349,500.00	Y		
1.2) HF051 OIL BOOM SYSTEMS		2015	GPC / VA	C / CPAF	WASHINGTON, DC	May 2015	May 2016	10	71,500.00	Y		
1.2) HF051 OIL BOOM SYSTEMS		2016	GPC / VA	C / CPAF	WASHINGTON, DC	Mar 2016	Mar 2017	4	92,500.00	Y		
1.4) HF056 EQUIPMENT CLEAN-UP SYSTEMS ⁽²⁾		2018	GPC / VA	C / CPAF	WASHINGTON, DC	Apr 2018	Apr 2019	1	310,000.00	Y		
1.5) HF057 OIL HANDLING SYSTEMS ⁽³⁾		2018	GPC / VA	C / CPAF	WASHINGTON, DC	Apr 2018	Apr 2019	6	150,666.67	Y		
1.6) HF060 HOT TAP TRAINING SYSTEMS		2019	TBD / TBD	C / TBD	WASHINGTON, DC	Apr 2019	Apr 2020	3	24,666.67	Y		
1.7) HF062 LIGHTERING SYSTEMS		2015	GPC / VA	C / CPAF	WASHINGTON, DC	May 2015	Feb 2016	1	384,000.00	Y		
1.7) HF062 LIGHTERING SYSTEMS		2017	TBD / TBD	C / CPAF	WASHINGTON, DC	Apr 2017	Jul 2017	1	393,000.00	Y		
1.8) HF063 VESSEL OF OPPORTUNITY SKIMMER SYSTEMS		2013	GPC / VA	C / CPAF	WASHINGTON, DC	Oct 2013	Oct 2014	3	300,000.00	Y		
1.8) HF063 VESSEL OF OPPORTUNITY SKIMMER SYSTEMS		2016	GPC / VA	C / CPAF	WASHINGTON, DC	Mar 2016	Mar 2017	8	31,250.00	Y		
1.10) HF067 VESSEL SKIMMER SYSTEMS		2019	TBD / TBD	C / TBD	WASHINGTON, DC	Apr 2019	Apr 2020	8	219,500.00	Y		

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0935 / Pollution Control Equipment						Modification Number / Title: 1 / HF024 CFC-114 (R-114) AC CONVERSION		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	338.528	6.630	6.262	7.070	0.000	7.070	7.085	2.031	0.000	0.000	0.000	367.606
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	338.528	6.630	6.262	7.070	0.000	7.070	7.085	2.031	0.000	0.000	0.000	367.606
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	338.528	6.630	6.262	7.070	0.000	7.070	7.085	2.031	0.000	0.000	0.000	367.606
<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 Navy is currently dependent on CFC-based refrigerants for the mission-critical cooling of (1) vital electronics and weapon systems, (2) food and medical stowage, and (3) inhabited spaces aboard surface ships and submarines. To counter the immediate threat of production cessation on uninterrupted Fleet operations, DoD directed the Defense Logistics Agency to establish a stockpile of CFC-based refrigerants. The stockpile was sized to support Fleet operations until the last CFC-based systems are retired or converted to ozone-friendly refrigerants. This program procures and installs conversion kits on existing CFC R-114 Air-Conditioning (A/C) plants onboard surface ships. The CFC R-114 conversion program began in FY 99 and is expected to complete in FY2021. The inventory objective for CFC R-114 is 402 converted units. [HF024 CFC-114 (R-114) AC CONVERSION] Average cost per unit in FY17 is lower than FY18-FY20 in part as result of utilization of reclaimed parts and equipment. The hardware procurement contracts are three-year contracts and FY18-FY20 procurements are estimated pending new contract award. The Program currently utilizes reclaimed equipment with cost avoidance in excess of \$200,000 per unit. The supply of reclaimed equipment will be exhausted in FY17; as a result, the FY18 equipment procurement unit cost exceeds standard inflation costs due to the unavailability of reclaimed parts.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy									Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0935 / Pollution Control Equipment					Modification Number / Title: 1 / HF024 CFC-114 (R-114) AC CONVERSION				
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: CFC R-114 Air- Conditioning (A/C) plants				Modification Type: AIT				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: HF024 CFC-114 (R-114) AC CONVERSION</i>													
<i>B Kits</i>													
<i>Recurring</i>													
1.1.1) HF024 CFC-114 (R-114) AC CONVERSION - NonOrganic ⁽⁶⁾	384 / 151.935	6 / 3.974	2 / 1.800	6 / 5.444	- / -	6 / 5.444	4 / 3.803	- / -	- / -	- / -	- / -	402 / 166.956	
<i>Subtotal: Recurring</i>	- / 151.935	- / 3.974	- / 1.800	- / 5.444	- / -	- / 5.444	- / 3.803	- / -	- / -	- / -	- / 0.000	- / 166.956	
<i>Subtotal: HF024 CFC-114 (R-114) AC CONVERSION</i>	384 / 151.935	6 / 3.974	2 / 1.800	6 / 5.444	- / -	6 / 5.444	4 / 3.803	- / -	- / -	- / -	- / -	402 / 166.956	
<i>Subtotal: Procurement, All Modification Items</i>	- / 151.935	- / 3.974	- / 1.800	- / 5.444	- / -	- / 5.444	- / 3.803	- / -	- / -	- / -	- / 0.000	- / 166.956	
Installation													
<i>Modification Item 1 of 1: HF024 CFC-114 (R-114) AC CONVERSION</i>	- / 186.593	- / 2.656	- / 4.462	- / 1.626	- / 0.000	- / 1.626	- / 3.282	- / 2.031	- / 0.000	- / 0.000	- / 0.000	- / 200.650	
<i>Subtotal: Installation</i>	- / 186.593	- / 2.656	- / 4.462	- / 1.626	- / -	- / 1.626	- / 3.282	- / 2.031	- / -	- / -	- / 0.000	- / 200.650	
Total													
Total Cost (Procurement + Support + Installation)	338.528	6.630	6.262	7.070	0.000	7.070	7.085	2.031	0.000	0.000	0.000	367.606	

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Exhibit P-3a, Individual Modification: PB 2019 Navy												Date: February 2018																			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9								P-1 Line Item Number / Title: 0935 / Pollution Control Equipment								Modification Number / Title: 1 / HF024 CFC-114 (R-114) AC CONVERSION															
ID Code (A=Service Ready, B=Not Service Ready) :												MDAP/MAIS Code:																			
Modification Item 1 of 1: HF024 CFC-114 (R-114) AC CONVERSION																															
Manufacturer Information																															
Manufacturer Name: YORK INTERNATIONAL												Manufacturer Location: PA																			
Administrative Leadtime (in Months): 2												Production Leadtime (in Months): 12																			
Dates		FY 2017		FY 2018		FY 2019		FY 2020		FY 2021		FY 2022		FY 2023																	
Contract Dates		Oct 2016		Oct 2017		Oct 2018		Oct 2019																							
Delivery Dates		Oct 2017		Oct 2018		Oct 2019		Oct 2020																							
Installation Information																															
Method of Implementation: AIT:: Installation Name: HF024 CFC-114 (R-114) AC CONVERSION																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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		379 / 186.593	5 / 2.656	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	384 / 189.249																		
FY 2017		- / -	- / -	6 / 4.462	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	6 / 4.462																		
FY 2018		- / -	- / -	- / -	2 / 1.626	0 / 0.000	2 / 1.626	- / -	- / -	- / -	- / -	0 / 0.000	2 / 1.626																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	6 / 3.282	- / -	- / -	- / -	0 / 0.000	6 / 3.282																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 2.031	- / -	- / -	0 / 0.000	4 / 2.031																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		379 / 186.593	5 / 2.656	6 / 4.462	2 / 1.626	0 / 0.000	2 / 1.626	6 / 3.282	4 / 2.031	- / -	- / -	0 / 0.000	402 / 200.650																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	379	-	2	-	3	4	2	-	-	-	2	-	-	-	2	4	-	-	-	4	-	-	-	-	-	-	-	-	-	-	402
Out	373	6	-	2	-	3	-	2	-	4	-	2	-	-	-	-	-	2	4	-	-	-	-	-	4	-	-	-	-	-	402
Footnotes:																															
⁽⁶⁾ Installation cost per unit varies as a result of installation location (East versus West Coast), the type of Ship being converted (Expeditionary Warfare versus Surface Warfare), and number of units being converted (2-4 units per ship). Specifically in FY18, the cost to install DDG-70 increased when the original planned installation location changed from San Diego shifted to Pearl Harbor. Installation costs also include Design Services Allocations (DSA) and Advanced Planning (AP) efforts which are funded one year prior to installation. In FY19, the cost includes DSA and AP efforts at \$649K for six (6) units.																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0935 / Pollution Control Equipment					Modification Number / Title: 2 / HF031 OPA IMPROVEMENTS		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	6.444	5.952	7.791	10.295	0.000	10.295	13.855	18.316	20.542	20.627	67.191	171.013
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	6.444	5.952	7.791	10.295	0.000	10.295	13.855	18.316	20.542	20.627	67.191	171.013
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	6.444	5.952	7.791	10.295	0.000	10.295	13.855	18.316	20.542	20.627	67.191	171.013
<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: HF031 Expeditionary Warfare: OPA Systems Improvements: These installations resolve issues with existing OPA systems including poor operational availability, maintainability, and reliability. Variations in costs are subject to specific ship needs and are confirmed based upon ship checks. Shipset install/hardware buys may include: VS-50 oily water separators, secondary membrane treatment system, oil content monitor datalogger(s), multiple pumps, valves, valve actuators, sensors, switches, placards, and hoses. HF031 Surface Warfare: OPA Systems Improvements: These installations resolve issues with existing OPA systems including poor operational availability, maintainability, and reliability. Variations in costs are subject to specific ship needs and are confirmed based upon ship checks. Shipset install/hardware buys may include: oily water transfer systems, secondary membrane treatment system, oil content monitor datalogger(s), multiple pumps, valves, valve actuators, sensors, switches, placards, and hoses. [HF031 OPA Improvements] Hardware funding includes Production Engineering (PE) efforts. Significant hardware suite cost variance is due to specific ship requirements. Each ship may require one or more of these improvements: datalogger, upgrades to oily waste transfer system, upgrades to primary treatment system, and upgrades to secondary treatment system. FY18 hardware funding will support: two (2) CG-47 class (SCD 13323) (one in Mayport and one Norfolk) at \$485K per suite, one (1) LHD-1 Class (SCD 13325) (in Norfolk) at \$1,575K, two (2) LPD-17 class (SCD 13326) (one in San Diego and one in Norfolk) at \$125K per suite and two (2) LSD-41 class (SCD 13336) (one in Sasebo and one in Mayport) at \$316K and \$285K per suite, respectively. FY19 hardware funding will support: one (1) DDG-51 class (SCD 13335) (in San Diego) at \$188K, one (1) LHD-1 Class (SCD 13325) (in San Diego) at \$1,687K, two (2) LHA-6 class (SCD 84365) (one in Norfolk and one in San Diego) at \$16K per suite and one (1) LPD-21 class (SCD 84365) (in San Diego) at \$32K.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0935 / Pollution Control Equipment					Modification Number / Title: 2 / HF031 OPA IMPROVEMENTS			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: Oil Pollution Abatement System					Modification Type: AIT					Related RDT&E PEs:			
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: HF031 OPA IMPROVEMENTS</i>													
<i>B Kits</i>													
<i>Recurring</i>													
1.1.1) HF031 OPA Improvements - NonOrganic ⁽⁷⁾	32 / 3.582	2 / 2.377	7 / 3.396	5 / 1.939	- / -	5 / 1.939	8 / 7.121	9 / 4.673	18 / 10.202	10 / 3.825	57 / 19.785	148 / 56.900	
<i>Subtotal: Recurring</i>	- / 3.582	- / 2.377	- / 3.396	- / 1.939	- / -	- / 1.939	- / 7.121	- / 4.673	- / 10.202	- / 3.825	- / 19.785	- / 56.900	
<i>Subtotal: HF031 OPA IMPROVEMENTS</i>	32 / 3.582	2 / 2.377	7 / 3.396	5 / 1.939	- / -	5 / 1.939	8 / 7.121	9 / 4.673	18 / 10.202	10 / 3.825	57 / 19.785	148 / 56.900	
<i>Subtotal: Procurement, All Modification Items</i>	- / 3.582	- / 2.377	- / 3.396	- / 1.939	- / -	- / 1.939	- / 7.121	- / 4.673	- / 10.202	- / 3.825	- / 19.785	- / 56.900	
Installation													
<i>Modification Item 1 of 1: HF031 OPA IMPROVEMENTS</i>	- / 2.862	- / 3.575	- / 4.395	- / 8.356	- / 0.000	- / 8.356	- / 6.734	- / 13.643	- / 10.340	- / 16.802	- / 47.406	- / 114.113	
<i>Subtotal: Installation</i>	- / 2.862	- / 3.575	- / 4.395	- / 8.356	- / -	- / 8.356	- / 6.734	- / 13.643	- / 10.340	- / 16.802	- / 47.406	- / 114.113	
Total													
Total Cost (Procurement + Support + Installation)	6.444	5.952	7.791	10.295	0.000	10.295	13.855	18.316	20.542	20.627	67.191	171.013	

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Exhibit P-3a, Individual Modification: PB 2019 Navy												Date: February 2018																			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0935 / Pollution Control Equipment										Modification Number / Title: 2 / HF031 OPA IMPROVEMENTS											
ID Code (A=Service Ready, B=Not Service Ready) :														MDAP/MAIS Code:																	
Modification Item 1 of 1: HF031 OPA IMPROVEMENTS																															
Manufacturer Information																															
Manufacturer Name: Various ⁽⁸⁾														Manufacturer Location: Various																	
Administrative Leadtime (in Months): 2														Production Leadtime (in Months): 12																	
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates		Dec 2016				Dec 2017				Dec 2018				Dec 2019				Dec 2020				Dec 2021				Dec 2022					
Delivery Dates		Dec 2017				Dec 2018				Dec 2019				Dec 2020				Dec 2021				Dec 2022				Dec 2023					
Installation Information																															
Method of Implementation: AIT:: Installation Name: HF031 OPA Improvements																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		26 / 2.862		6 / 3.575		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		32 / 6.437					
FY 2017		- / -		- / -		1 / 4.395		1 / 0.473		0 / 0.000		1 / 0.473		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 4.868					
FY 2018		- / -		- / -		- / -		7 / 7.883		0 / 0.000		7 / 7.883		- / -		- / -		- / -		- / -		- / -		0 / 0.000		7 / 7.883					
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		5 / 6.734		- / -		- / -		- / -		- / -		0 / 0.000		5 / 6.734					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		8 / 13.643		- / -		- / -		- / -		0 / 0.000		8 / 13.643					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		9 / 10.340		- / -		- / -		0 / 0.000		9 / 10.340					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		16 / 16.802		2 / 0.670		18 / 17.472							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		10 / 7.883		10 / 7.883							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		57 / 38.853		57 / 38.853							
Total		26 / 2.862		6 / 3.575		1 / 4.395		8 / 8.356		0 / 0.000		8 / 8.356		5 / 6.734		8 / 13.643		9 / 10.340		16 / 16.802		69 / 47.406		148 / 114.113							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	26	-	-	1	5	-	-	-	1	-	1	2	5	1	3	1	-	1	1	4	2	2	3	-	4	7	3	3	3	69	148
Out	14	-	5	2	4	1	-	-	2	1	1	4	-	1	2	3	4	-	2	1	2	2	2	2	-	6	2	6	5	74	148
Footnotes:																															
⁽⁷⁾ Installation cost variance is due to the scope of the hardware suite and the installation location. Installation costs include Design Services Allocations (DSA) and Advanced Planning (AP) efforts which are funded one year prior to installation. FY18 installation funding will support: one (1) LHD-1 Class (SCD 13325) installation (in Norfolk) at \$2,960K and eight (8) ship DSA and AP efforts at \$1,435K (DSA and AP costs in FY18 will range from \$50K for a LPD-17 class (SCD 13326) to \$530K for a LHD-1 class (SCD 13325)). FY19 installation funding will support: two (2) CG-47 class (SCD 13323) installations (one in Mayport and one in Norfolk) at \$1,113K per installation, one (1) DDG-51 class (SCD 13335) installation (in Norfolk) at \$473K, one (1) LHD-1 Class (SCD 13325) installation (in Norfolk) at \$3,020K, two (2)																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0935 / Pollution Control Equipment	Modification Number / Title: 2 / HF031 OPA IMPROVEMENTS
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
LPD-17 class (SCD 13326) installations (one in San Diego and one in Norfolk) at \$438K and \$398K per ship, respectively, and two (2) LSD-41 class (SCD 13336) installations (one in Sasebo and one in Mayport) at \$781K and \$678K per ship, respectively; and five (5) ship DSA and AP efforts at \$342K (DSA and AP costs in FY19 will range from \$3K for a LHA-6 class (SCD 84365) to \$100K for a DDG-51 class (SCD 13335)). (8) HF031 OPA Improvements Manufacturer Identification is a hardware suite and includes various part pieces and equipment procurements from multiple vendors per specific ship requirements.		

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0935 / Pollution Control Equipment					Modification Number / Title: 3 / HF031 DRY WASTE PROCESSING SUITE IMPROVEMENTS		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.417	168.813	170.230
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.417	168.813	170.230
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.417	168.813	170.230
<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: Dry Waste Processing Suite Improvements: Expeditionary Warfare: Funding provided to support dry waste handling equipment improvements on LHA, LHD, LPD and LSD platforms including compressed melt units, pulpers, shredders, incinerators, and compactors. Dry Waste Processing Suite Improvements: Air Warfare: Funding provided to support dry waste handling equipment improvements on CVN platforms including compressed melt units, pulpers, shredders, incinerators, and compactors.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0935 / Pollution Control Equipment					Modification Number / Title: 3 / HF031 DRY WASTE PROCESSING SUITE IMPROVEMENTS			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: Dry Waste Processing Equipment					Modification Type: AIT					Related RDT&E PEs:			
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> HF031 DRY WASTE PROCESSING SUITE IMPROVEMENTS													
B Kits													
Recurring													
1.1.1) Dry Waste Processing Suite Improvements - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 1.417	149 / 104.860	151 / 106.277
<i>Subtotal: Recurring</i>	<i>- / 0.000</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 1.417</i>	<i>- / 104.860</i>	<i>- / 106.277</i>
<i>Subtotal: HF031 DRY WASTE PROCESSING SUITE IMPROVEMENTS</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>2 / 1.417</i>	<i>149 / 104.860</i>	<i>151 / 106.277</i>
<i>Subtotal: Procurement, All Modification Items</i>	<i>- / 0.000</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 1.417</i>	<i>- / 104.860</i>	<i>- / 106.277</i>	
Installation													
<i>Modification Item 1 of 1:</i> HF031 DRY WASTE PROCESSING SUITE IMPROVEMENTS	<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>- / 0.000</i>	<i>- / 0.000</i>	<i>- / 0.000</i>	<i>- / 0.000</i>	<i>- / 63.953</i>	<i>- / 63.953</i>
<i>Subtotal: Installation</i>	<i>- / 0.000</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 63.953</i>	<i>- / 63.953</i>
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.417	168.813	170.230

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0935 / Pollution Control Equipment	Modification Number / Title: 3 / HF031 DRY WASTE PROCESSING SUITE IMPROVEMENTS

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

Modification Item 1 of 1: HF031 DRY WASTE PROCESSING SUITE IMPROVEMENTS

Manufacturer Information

Manufacturer Name: Various ⁽⁹⁾	Manufacturer Location: Various
Administrative Leadtime (in Months): 2	Production Leadtime (in Months): 12

Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Contract Dates							Dec 2022
Delivery Dates							Dec 2023

Installation Information

Method of Implementation: AIT:: Installation Name: Dry Waste Processing Suite Improvements

Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 2.334	2 / 2.334
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	149 / 61.619	149 / 61.619
Total	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	151 / 63.953	151 / 63.953

Installation Schedule

	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	151	151		
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	151	151		

Footnotes:

⁽⁹⁾ HF031 Dry Waste Processing Improvements Manufacturer Identification is a hardware suite and includes various part pieces and equipment procurements from multiple vendors per specific ship requirements.

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment	P-1 Line Item Number / Title: 0941 / Submarine 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	95.398	8.995	27.990	37.155	0.000	37.155	47.055	59.648	89.115	90.813	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	95.398	8.995	27.990	37.155	0.000	37.155	47.055	59.648	89.115	90.813	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	95.398	8.995	27.990	37.155	0.000	37.155	47.055	59.648	89.115	90.813	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 Submarine Support Equipment budget provides for equipment technical refresh and upgrades that consist of hardware, software, system engineering, integrated logistics support, system test and evaluation, training, data, alteration installation teams and program management. This funding also procures equipment and material used to implement the military high priority Submarine Silencing Program for operating nuclear submarines. These silencing program equipment technical refreshes and upgrades are not supported by other NAVSEA program offices and support SSN/SSBN/SSGN Class submarines and land based laboratories/facilities. As the VIRGINIA Class submarine program matures and more submarines enter the operational and sustainment phase of the lifecycle, Navy leadership made a decision to transfer funds for modernization and maintenance upgrades and obsolete equipment replacement from new construction program to the Submarine Support Equipment account for these items to be executed on operational VA class submarines.

The installation funds are provided for the Ship Service Turbine Generator (SSTG) Governors on SSN688 and SSN21 Class submarines, acoustic range array replacement, Ship Control System Processors for SEAWOLF Class submarines, and SSN Class Component Upgrades.

[P40A / Propulsor Upgrade Procurement]: Propulsor Upgrade SHIPALT 4548K - Current propulsor design on VA class in-service ships exhibits excessive corrosion problems. A SHIPALT has been developed to accomplish modifications to the propulsor, shaft, bearing snubber, forward outer structure cover plate, rotor tailcone, rope guard, fastener system, and associated local cathodic protection system, to achieve a 156 month corrosion protection system for the propulsor without interim repairs or replacement. Backfit installation was initially started by the VA Class program office and has transitioned to PMS392 to procure the remaining three ships of the five shipsets and install the remaining five shipsets.

[P40A / SSTG Digital Voltage Procurement]: SSTG Digital Voltage Regulator upgrade (SHIPALT 4884K) - Existing SSTGs on early VA Class submarines have analog voltage regulators, which are obsolete and unsustainable. SSN 780 and later ships were delivered with the new design Digital Voltage Regulator. A backfit SHIPALT has been developed to replace the analog voltage regulators on SSN 774-779 with the new digital design, targeted to begin in FY18. This effort began under budget line item 0942 and has transitioned to 0941 beginning in FY18 where the remaining shipsets will be procured and installed.

[P40A / ICS Block 1 & 2 Design Change Procurement]: Integrated Communications System (ICS) Block 1 & 2 and Block 4 - The interior Integrated Communication System installation on VA Class ships Block 1 & 2 hulls is a COTS based system designed in the mid-1990s and first installed in 2002. Much of the design is now obsolete and unsupported. The ICS must be operational to meet underway requirements. To resolve current parts obsolescence, procurement and backfit of key replacement components (example, processor cards, graphics cards, Asynchronous Transfer Mode switches, Linear Displacement Transducers) on Block 1 & 2 platforms is required to ensure continued operation in the near term. This effort began in line item 0942 and transitioned to 0941 in FY18. To address continuing future obsolescence of the ICS, a system redesign and replacement via SHIPALT is required. SHIPALT development leveraging the Block 4 ICS design will commence in FY19 with procurements and installs in following years.

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment		P-1 Line Item Number / Title: 0941 / Submarine 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 / Bulkhead 6 Tile Maintenance SA 4563K Procurement]: Bulkhead 6 Tile Replacement (SHIPALT 4563K) - Modifies the Bulkhead 6 damping tile arrangement and tile design in the Main Ballast Tank to facilitate required recurring maintenance including ultrasonic hull inspection efforts, eliminating the need to remove/replace the attached damping tiles during scheduled availabilities, which is a significant cost and schedule savings during planned depot availabilities. This effort began under budget line item 0942 and has transitioned to 0941 beginning in FY18 where the remaining four of five shipsets will be procured and all five will be installed. [P40A / DGIOTS Shock Modification SA 4776K Procurement]: Diesel Generator Independent Over Speed Trip System (DGIOTS) Shock Modification (SHIPALT 4778K) - The DGIOTS control panel on VA Class Blocks I/II has obsolete components and fails to meet requirements for shock and vibration. SHIPALT 4778K provides a shock/vibration-qualified control panel using current, supportable technology. Backfit installation of the SHIPALT is planned for SSN 774-781 (782 - 783 received at PSA). Material lead time is less than 12 months. [P40A / Fwd Automatic Bus Transfer Pwr Mod Procurement]: SSN Class Component Upgrades - Forward ABT Power Modification - The in-service VA ships in Block I/II have received the Hotel Services SHIPALT which included Static ABTs and power transformers to support increased forward electronics processing capability for continuing SWFTS sonar/fire control tech insertions. At-sea operations have since identified problems with loss of electronics processing in conjunction with a loss of power to a forward electrical bus. A new construction change for blocks III/IV platforms is in progress, but a backfit SHIPALT for a power distribution upgrade on blocks I/II must be developed and fielded on SSN 774-783. Material lead time is estimated to be less than 12 months. [P40A / MRO Shock Mod SA 4629K Procurement]: MRO Shock Modification (SHIPALT 4620K) - Accomplishes design changes on 20 MROs per ship to meet shock qualification requirement. The MROs are for valves AHP-33, TD-138, DSW-1, DSW-2, TD-128, TD-65, TD-129, SDA-81, PL-2, SDA-82, TD-127, TD-49, SDA-53, SDA-54, SDA-41, TD-125, PL-81, EAFW-244, EAFW-245 and EAFW-67. Backfit installation of the SHIPALT is planned for SSN 774-781 (782 - 783 received at PSA). [P40A / Circuit D/Cath Protection Sys OER Procurement]: Circuit D /Cathodic Protection System Obsolete Equipment Replacement (OER): Circuit D supports degaussing operations. The current design on block I/II ships is 1990's COTS and is obsolete, requiring tech refresh to block III design via a backfit SHIPALT design and fielding. Additionally, future upgrade of the VA Class SWFTS sonar/fire control systems to TI-16/APB-15 or greater involve a change of middleware from CORBA to Advanced Message Queuing Protocol (AMPQ), requiring Circuit (CKT) D to also transition to AMPQ. This transition requires a CKT D redesign and upgrade by SHIPALT. The cathodic protection system on VA Class blocks I/II ships uses an Impressed Current Cathodic Protection electronics that is COTS-based. Due to continued obsolescence with in-service ships, a complete system redesign is planned in new construction block V that would require backfit on in-service ships to allow the Impressed Current Cathodic Protection (ICCP) system to continue providing hull structure corrosion protection and maintain interfaces with other systems like CKT D. The redesign effort for the two systems will result in separate SHIPALTS but are related due to system interfaces. Block I/II platforms (SSN 774-783) require upgrade. Change applicability to Block III platforms is under review. [P40A / SSTG Reliability Upgrades Procurement]: SSTG Reliability Upgrades - Recent failures on in-service VA Class submarines of the SSTG bearing system design have identified the need for both short term and longer term corrective design actions. SHIPALT design development is required for several system improvements including modifications to the Bearing Thrust Housing Chamfer to increase air flow and reduce temperatures, the Bearing Thrust Moisture Sensor to seal sensor internals from moisture and reduce introduction of moisture to the thrust housing, and installation of a Flow Diverter to seal existing gaps between gland seals on the turbine and the forward end of the thrust bearing. These alt designs would be installed by fleet activities and not require headquarters procurement or install funding. Longer term corrective action for block I/II ships (SSN 774-783) involves redesign and possible replacement of bearing system, depending on results of ongoing failure analysis. Impact to Block III platforms is to be determined. [P40A / Portable Ship Control Unit Installation]: Portable Ship's Control Station - The current Portable Ship's Control Station on VA Class Bocks I and II is obsolete and not supported for spare parts or replacement tablets. This bridge suitcase is used to provide the officer of the deck with electronic chart navigation information and sensor contact information as well as ship's course/speed/rudder indication and related information while underway on the surface. SHIPALT 4776 has previously been developed to install new designed Portable Ship's Control Station (PSCS) systems, and shipsets procured by the VA Class Program Office (PMS450) in BLI 0942 to support installations in FY19 and follow years. Funding in 0941 provides for installation of these units. [P40A / VA Class Acoustic Superiority Prog Design & Dev./Tech Transfer]: VA Class Acoustic Superiority - Design Development - Funding will be utilized to execute requirements included in "PEO SUBMARINES ASW CAMPAIGN PLAN UPDATE, 9073 Ser 450W4K/S0116 of 2 Mar 2016". This letter (SECRET) provides details on the plan to backfit new design Acoustic Superiority (AS) treatment on 5 BLK III submarines during their first Extended Docking Selected Restricted Availability (EDSRA), with follow-on installs on 6 BLK IV submarines during their EDSRAs. In addition, design work for backfit SHIPALT development		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment		P-1 Line Item Number / Title: 0941 / Submarine 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		
for selected machinery improvements is included. AS treatment installations will be based on design and material developed for installation on USS SOUTH DAKOTA (SSN 790) as part of the South Dakota Improvement Program (SDIP) during PSA. Beginning in FY18, funding is provided for development of SHIPALT products for backfit installation of the AS treatment by Naval Shipyards on VA Class hulls, as well as for SHIPALT development for backfit of AS-related machinery improvements by EDSRA Shipyards or Fleet Intermediate Maintenance Activities (IMAs). Engineering services are also funded to provide processes and procedures to the EDSRA shipyards for handling, setup and operation of staging enclosures and for the treatment handling and application equipment.		
[P40A / Acoustic Range Replacement Equipment]: Acoustic Range Replacement Equipment procures equipment and materials required to implement and support the military high priority Submarine Silencing Program for operating nuclear submarines. TYCOMs have consistently rated the conduct of noise trials as a high priority funding requirement. The requirements for this program are identified in Chief of Naval Operations (CNO) Specific Operational Requirements 46-28 and Naval Sea Systems Instruction (NAVSEAINST) C9073.2B. This is the only program in place to procure equipment for the purpose of measuring, monitoring, assessing and improving the detection capability and reducing the detectability of deployed submarines. The equipment is used on test vessels, listening platforms and at the laboratories. This program replaces or refurbishes broken or obsolete acquisition and analysis hardware and software used to ensure ship's safety; and the execution and completion of acoustic trials objectives identified in CNO SOR 46-28 (assessment of ship's acoustic posture, etc.) and NAVSEAINST C9073.2B (Acoustic Surveys Policy). These refurbishments and replacements are especially critical in order to maintain the technological advances recently made in the area of acoustic data acquisition under the Acoustic Measurement Facilities Improvement Program and to utilize the South Tongue of the Ocean Acoustic Facility (STAFAC). Specific items include hydrophone arrays, towed arrays, ranging and tracking systems, on-board array electronics, noise sources, shore power cables, data fiber optic cables, data analysis systems, workstations, data storage and retrieval, communications systems, analyzers, tape recorders, accelerometers, monitors, etc.		
[P40A / SW Class SCS Microprocesor Proc Design & Dev]: SSN HM&E Threshold Modernization - Provides for replacement of SEAWOLF Class Ship Control System Microprocessing unit. The current Ship Control System microprocessors are obsolete and contain electronic components that are no longer support by industry.		
[P40A / SW Class SCS Microprocesor Procurement]: SEAWOLF Class Ship Control System Microprocessing Unit - This shipalt will replace Seawolf Class submarine ship control processing unit. The ship control processors are obsolete and contain electronic components that are no longer supported by industry.		
[P40A / LA/SW Class Design and Shipalt Dev. for SSTG Governors]: SSTG Governors - Provides for replacement of submarine SSTG Governors on Seawolf Class and Los Angeles Class (MOD 25). The SSTG Governors in these submarines classes are obsolete and contain electronic components that are no longer supported by industry.		
[P40A / SSTG MOD 25 Procurement]: SSTG Mod 25 - Provides for replacement on SSTG Mod 25 Governors on Los Angeles Class submarines. The SSTG Governors in these class of submarines are obsolete and contain electronic components that are no longer supported by industry.		
[P40A / SEAWOLF Class SSTG Governor Procurement/Installation]: PB008 - SEAWOLF Class SSTG Governors - Provides for replacement on SSTG Governors on SEAWOLF Class submarines. The SSTG Governors in these class of submarines are obsolete and contain electronic components that are no longer supported by industry.		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy								Date: February 2018	
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment						P-1 Line Item Number / Title: 0941 / Submarine 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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 Support Equipment				- / 95.398	- / 8.995	- / 27.990	- / 37.155	- / -	- / 37.155
P-3a	10 / PB002 VA Acoustic Superiority (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-40	Total Gross/Weapon System Cost				- / 95.398	- / 8.995	- / 27.990	- / 37.155	- / 0.000	- / 37.155

Exhibits Schedule					FY 2020	FY 2021	FY 2022	FY 2023	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 Support Equipment				- / -	- / -	- / -	- / -	- / -	- / -
P-3a	10 / PB002 VA Acoustic Superiority (TBD)				- / 14.415	- / 32.923	- / 61.049	- / 62.185	- / 459.457	- / 630.029
P-40	Total Gross/Weapon System Cost				- / 47.055	- / 59.648	- / 89.115	- / 90.813	Continuing	Continuing

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

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

Justification:
 The FY 2019 funding request was reduced by \$0.297 million to reflect the Department of Navy's effort to support the Office of Management and Budget directed reforms for Efficiency and Effectiveness that include a lean, accountable, more efficient government.

The increase between FY18 (\$27.990 million) and FY19 (\$37.155 million) provides funding for three main efforts: 1)backfit SHIPALT design development of VA Class Acoustic Superiority upgrade, 2) backfit SHIPALT design development of VA Class Integrated Communications System based on later block 4 design, and 3) Acoustic Range Replacement Equipment. Details on each of these efforts are contained in the Program Description Section above.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy																Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9									P-1 Line Item Number / Title: 0941 / Submarine Support Equipment							Aggregated Items Title: Submarine Support Equipment ⁽¹⁾					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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) PB002/PB5IN SSN Class Component Upgrades ⁽²⁾																					
1.1) Propulsor Upgrade Procurement ⁽³⁾	A		-	-	-	-	-	-	-	-	2.500	-	-	0.750	-	-	-	-	-	0.750	
1.2) Propulsor Upgrade Installation	A		-	-	-	-	-	-	-	-	4.400	-	-	1.800	-	-	-	-	-	1.800	
1.3) SSTG Digital Voltage Procurement ⁽⁴⁾	A		-	-	-	-	-	-	-	-	3.600	-	-	-	-	-	-	-	-	-	
1.4) SSTG Digital Voltage Installation	A		-	-	-	-	-	-	-	-	0.500	-	-	-	-	-	-	-	-	-	
1.5) ICS Block 1 & 2 Design Change Procurement ⁽⁵⁾	A		-	-	-	-	-	-	-	-	1.000	-	-	-	-	-	-	-	-	-	
1.6) ICS Block 1 & 2 Design Change Installation	A		-	-	-	-	-	-	-	-	2.500	-	-	2.550	-	-	-	-	-	2.550	
1.7) ICS Block 4 ShipAlt Design & Dev.	A		-	-	-	-	-	-	-	-	-	-	-	4.890	-	-	-	-	-	4.890	
1.10) Bulkhead 6 Tile Maintenance SA 4563K Procurement ⁽⁶⁾	A		-	-	-	-	-	-	-	-	0.060	-	-	0.122	-	-	-	-	-	0.122	
1.11) Bulkhead 6 Tile Maint SA 4563K Installation	A		-	-	-	-	-	-	-	-	0.645	-	-	0.658	-	-	-	-	-	0.658	
1.12) DGIOTS Shock Modification SA 4776K Procurement ⁽⁷⁾	A		-	-	-	-	-	-	-	-	0.300	-	-	0.306	-	-	-	-	-	0.306	
1.13) DGIOTS Shock Modification SA 4776K Installation	A		-	-	-	-	-	-	-	-	0.200	-	-	0.204	-	-	-	-	-	0.204	
1.14) Fwd Automatic Bus Transfer Pwr Mod Design & Dev.	A		-	-	-	-	-	-	-	-	0.432	-	-	1.800	-	-	-	-	-	1.800	
1.17) MRO Shock Mod SA 4629K Design & Development	A		-	-	-	-	-	-	-	-	0.136	-	-	1.000	-	-	-	-	-	1.000	
1.18) MRO Shock Mod SA 4629K Procurement ⁽⁸⁾	A		-	-	-	-	-	-	-	-	-	-	-	0.420	-	-	-	-	-	0.420	

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9							P-1 Line Item Number / Title: 0941 / Submarine Support Equipment								Aggregated Items Title: Submarine Support Equipment ⁽¹⁾					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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)
1.20) Circuit Cathodic Protection Sys OER Design & Dev.	A		-	-	-	-	-	-	-	-	0.271	-	-	0.768	-	-	-	-	-	0.768
1.21) Circuit D/Cath Protection Sys OER Procurement ⁽⁹⁾	A		-	-	-	-	-	-	-	-	-	-	-	1.200	-	-	-	-	-	1.200
1.23) SSTG Reliability Upgrades Design & Dev.	A		-	-	-	-	-	-	-	-	-	-	-	0.459	-	-	-	-	-	0.459
1.26) Portable Ship Control Unit Installation ⁽¹⁰⁾	A		-	-	-	-	-	-	-	-	-	-	-	1.200	-	-	-	-	-	1.200
1.27) VA Class Acoustic Superiority Prog Design & Dev./ Tech Transfer ⁽¹¹⁾	A		-	-	-	-	-	-	-	-	2.200	-	-	8.125	-	-	-	-	-	8.125
Subtotal: 1) PB002/PB5IN SSN Class Component Upgrades			-	-	0.000	-	-	-	-	-	18.744	-	-	26.252	-	-	-	-	-	26.252
2) PB004/PB5IN Facilities/Lab Upgrades																				
2.1) Acoustic Range Replacement Equipment ⁽¹²⁾	A		-	-	56.069	-	-	3.406	-	-	3.594	-	-	6.138	-	-	-	-	-	6.138
Subtotal: 2) PB004/PB5IN Facilities/Lab Upgrades			-	-	56.069	-	-	3.406	-	-	3.594	-	-	6.138	-	-	-	-	-	6.138
3) PB007/PB5IN SW Class HM&E Threshold Modernization																				
3.1) SW Class SCS Microprocessor Proc Design & Dev	A		-	-	22.740	-	-	2.824	-	-	0.136	-	-	-	-	-	-	-	-	-
3.2) SW Class SCS Microprocessor Procurement ⁽¹³⁾	A		-	-	-	-	-	-	-	-	1.562	-	-	2.500	-	-	-	-	-	2.500
3.3) SW Class SCS Microprocessor Installation/DSA	A		-	-	-	-	-	-	-	-	0.191	-	-	0.305	-	-	-	-	-	0.305
Subtotal: 3) PB007/PB5IN SW Class HM&E Threshold Modernization			-	-	22.740	-	-	2.824	-	-	1.889	-	-	2.805	-	-	-	-	-	2.805
4) PB008/PB5IN SSTG Governors																				
4.1) LA/SW Class Design and Shipalt Dev. for SSTG Governors ⁽¹⁴⁾	A		-	-	13.921	-	-	2.492	-	-	1.763	-	-	0.421	-	-	-	-	-	0.421
4.2) SSTG MOD 25 Procurement ⁽¹⁵⁾	A		-	-	-	-	-	-	-	-	2.000	-	-	1.021	-	-	-	-	-	1.021

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9							P-1 Line Item Number / Title: 0941 / Submarine Support Equipment								Aggregated Items Title: Submarine Support Equipment ⁽¹⁾					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
4.3) SSTG MOD 25 Installation/DSA	A		-	-	-	-	-	-	-	-	-	-	-	0.518	-	-	-	-	-	0.518
4.4) SEAWOLF Class SSTG Governor Procurement/ Installation	A		-	-	2.668	-	-	0.273	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 4) PB008/PB5IN SSTG Governors			-	-	16.589	-	-	2.765	-	-	3.763	-	-	1.960	-	-	-	-	-	1.960
Total			-	-	95.398	-	-	8.995	-	-	27.990	-	-	37.155	-	-	-	-	-	37.155

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

Footnotes:

- (1) Totals shown for SSN Class Component Upgrades (PB002), SEAWOLF Class Hull, Mechanical & Electrical (HM&E) Threshold Modernization (PB007) and SSTG Governors (PB008) are for SHIPALT design documentation and Integrated Logistics Support (ILS) product preparation costs. Facilities/Lab Upgrades (PB004) procures equipment and materials required to implement and support the high priority Submarine Silencing Program for operating Strategic and Attack nuclear submarines.
- (2) PB002/PB5IN SSN Class Component Upgrades: These requirements were recently transferred, beginning in FY18, into the operational submarine program for backfit on VA class submarines. Initial estimates developed by new construction activities did not include all requirements for installation on operational submarines via a ShipAlt, e.g. different installation and testing procedures, all logistic products, etc. FY19 and out estimates have been updated to include ShipAlt requirements.
- (3) Propulsor Upgrade funding procures 3 units and 2 units were procured by the VA Class program office and installs a total of 5 units.
- (4) SSTG Digital Voltage Procurement/Installation plan is to procure 6 unit and install 6 units.
- (5) ICS Block 1 & 2 Design Change funding procures 1 unit and 1 unit was procured by the VA Class program office and installs a total of 2 units.
- (6) Bulkhead 6 Tile Maintenance ShipAlt 4563K funding procures 4 units and 1 unit was procured by the VA Class program office and installs a total of 5 units.
- (7) DGIOTS Shock Modification ShipAlt 4776K funding plan is to procure and install a total of 10 units.
- (8) MRO Shock Mod ShipAlt 4629K funding plan is to procure and install a total of 8 units.
- (9) Circuit D/Cathodic Protection Sys OER funding plan is to procure and install a total of 16 units.
- (10) Four Portable Ship Control Units were procured by PMS450; funds showing in FY19 and FY20 are for installation of these. Starting in FY23 the plan is to procure and install 6 units.
- (11) VA Class Acoustic Superiority funding provides ShipAlt development.
- (12) Acoustic Range replacement equipment requirements have been updated to include additional maintenance deferred from previous years.
- (13) SEAWOLF Class Ship Control System Microprocessing Unit funding procures and installs a total of 3 units.
- (14) The FY18 SHIPALT Design effort for LA Class Mod 25 hulls continues from its start in FY17 and completes in FY19, decreasing from FY17 levels. In FY18, two procurements are started with one procurement and three installations to follow. The FY16 Design funding is completion of residual design effort for the SEAWOLF Class SSTG governor. VA Class Modernization is planned for installation during depot availabilities (EDSRA or DMP) of approx. 20 Months duration. FY19 is for procurement of 1 unit and installation of 2 units.
- (15) SSTG MDD 25 funding procures and install a total of 3 units.

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0941 / Submarine Support Equipment						Modification Number / Title: 10 / PB002 VA Acoustic Superiority		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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	14.415	32.923	61.049	62.185	459.457	630.029
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	14.415	32.923	61.049	62.185	459.457	630.029
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	14.415	32.923	61.049	62.185	459.457	630.029
<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: [VA Acoustic Superiority] PB002 SSN Class Component Upgrades - Virginia Class Acoustic Superiority - Funding is provided for procurement of AS treatment material for each hull and for installation labor. Material procurement has a 2-year lead time. Installation is planned during an EDSRA which starts in 4th qtr. FY22 and completes in FY24.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0941 / Submarine Support Equipment						Modification Number / Title: 10 / PB002 VA Acoustic Superiority			
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: PB002 VA Acoustic Superiority													
B Kits													
Recurring													
1.1.1) VA Acoustic Superiority - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	1 / 10.000	1 / 10.200	1 / 10.404	1 / 10.612	7 / 79.346	11 / 120.562	
Subtotal: Recurring	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / 10.000	- / 10.200	- / 10.404	- / 10.612	- / 79.346	- / 120.562	
Subtotal: PB002 VA Acoustic Superiority	- / -	- / -	- / -	- / -	- / -	- / -	1 / 10.000	1 / 10.200	1 / 10.404	1 / 10.612	7 / 79.346	11 / 120.562	
Subtotal: Procurement, All Modification Items	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / 10.000	- / 10.200	- / 10.404	- / 10.612	- / 79.346	- / 120.562	
Installation													
Modification Item 1 of 1: PB002 VA Acoustic Superiority	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 32.300	- / 32.946	- / 324.166	- / 389.412	
Subtotal: Installation	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 32.300	- / 32.946	- / 324.166	- / 389.412	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	0.000	0.000	0.000	0.000	14.415	32.923	61.049	62.185	459.457	630.029	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0941 / Submarine Support Equipment										Modification Number / Title: 10 / PB002 VA Acoustic Superiority																
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:																					
Modification Item 1 of 1: PB002 VA Acoustic Superiority																															
Manufacturer Information																															
Manufacturer Name: Electric Boat										Manufacturer Location: Groton, CT																					
Administrative Leadtime (in Months): 3										Production Leadtime (in Months): 24																					
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates																						Jul 2022		Jul 2023							
Delivery Dates																						Jul 2024		Jul 2025							
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: VA Acoustic Superiority																															
Installation Cost		Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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 2017		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -	- / -									
FY 2018		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -	- / -									
FY 2019		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -	- / -									
FY 2020		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 32.300		- / -		0 / 0.000	1 / 32.300									
FY 2021		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 32.946		0 / 0.000	1 / 32.946									
FY 2022		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 33.605	1 / 33.605									
FY 2023		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 34.277	1 / 34.277									
To Complete		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		7 / 256.284	7 / 256.284									
Total		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 32.300		1 / 32.946		9 / 324.166	11 / 389.412									
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	9	11
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	11

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment	P-1 Line Item Number / Title: 0942 / Virginia Class Support Equipment

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0604558N, 0204281N

Line Item MDAP/MAIS Code: 516

Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1,146.471	63.908	46.610	66.328	0.000	66.328	28.465	23.263	22.910	23.326	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,146.471	63.908	46.610	66.328	0.000	66.328	28.465	23.263	22.910	23.326	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1,146.471	63.908	46.610	66.328	0.000	66.328	28.465	23.263	22.910	23.326	Continuing	Continuing

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

Initial Spares (<i>\$ in Millions</i>)	-	1.894	2.124	0.068	-	0.068	0.271	-	0.026	-	-	4.383
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The VIRGINIA Class BLI 0942 provides a wide range of material required to operate, test, support and maintain the viability of VIRGINIA SSN-774 Class Submarines. There is a significant increase in the request from FY18 to FY19 driven primarily by the final hotel services working group installation on SSN 774. Additional details are provided below for each effort.

The "Major Shore Spares" component includes rotatable pool and insurance spares. Propulsor rotatable pool assets support planned maintenance during scheduled availabilities by decreasing equipment turn-around time/availability duration. Rotatable pool program equipment includes the high pressure air compressor, various pump/motor assemblies, radar mast, ventilation fans and thin line towed array components and other components. There is a significant increase in the profile of this component from FY18 through FY20 in support of additional high speed machining capabilities at the Naval Foundry and Propeller Center (NFPC) in Philadelphia. This is the VIRGINIA Program Office portion of the propulsor foundry equipment as agreed to by PEO SUB, VIRGINIA Program Office, and COLUMBIA Program Office.

The Test and Evaluation (T&E) component includes upgrading the afloat acoustic system required to conduct TECHEVAL/OPEVAL satisfactorily, efficiently and with minimal risk of equipment failure. Conduct hardware and software development, procurement, maintenance, and operations as required to achieve and maintain submarine acoustic signatures trials program. The resultant capabilities support the Submarine Acoustic Trials Enterprise, which includes the VIRGINIA Class submarine test and evaluation program.

VIRGINIA Payload Tubes (VPT) and Intermediate and Depot (I&D) Support Equipment funding includes Vertical Launch System (VLS) Peculiar Support Equipment (PSE) for All-Up Round Simulators (AURS)/All-Up Round (AUR) Ballast Cans necessary to conduct TECHEVAL/OPEVAL and provide ballast for ship operation.

Non-Tactical Data Processing System (NTDPS) funding includes shipboard wireless LAN that provides a ship wide (forward of the reactor compartment) intranet (Non-classified Internet Protocol (IP) Router Network (Unclassified Enclave) (NIPRNET)) that significantly enhances the quality of the work by facilitating electronic correspondence, personnel data management, collaborative services, interactive whiteboard, multi-user chat and access to these sites: Fleet Training Management & Planning System/Naval Training Management & Planning System (FTMPS/NTMPS), Composite Health Care System (CHCS), prescriptions, MYPAY-Defense Finance and Accounting Service (DFAS), Navy Personnel Command (NPC), Bureau of Naval Personnel (BUPERS), email, Fleet Technical Support Center, Atlantic (FTSCLANT), Submarine Maintenance Engineering, Planning and Procurement (SUBMEPP) and Navy Knowledge Online (NKO).

The Hotel Services Working Group (HSWG) cost component provides funding for procurement and installation of materials necessary to modernize VIRGINIA Class Submarine Blocks I & II (774-783) infrastructure (i.e. power, cabling, cooling, and arrangements of the ship for the entire Government Furnished Equipment (GFE)/ Contractor Furnished Equipment (CFE) NPES configuration. This combination of

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment		P-1 Line Item Number / Title: 0942 / Virginia Class Support Equipment
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0604558N, 0204281N
Line Item MDAP/MAIS Code: 516		
Hull, Mechanical and Electrical (HM&E) alterations to VIRGINIA Class submarines is collectively referred to as the "Hotel Services" modification. Hotel Services modernization kit procurement for SSN774 takes place in FY18 and is installed during FY19 DMP. Maintenance Planning System funds will be used to help ship programs identify, plan and execute maintenance activities as well as improve efficiently at all levels (performed by ship's force as well as organizational/depot level) by creating a set of tools to provide a robust, disconnected and comprehensive training and maintenance solution delivering dynamic content. This set of tools and the associated ship-to-shore data environment will reduce O&MN funding over time. This will be fielded as part of the Non-Tactical Data Processing System (NTDPS) to VIRGINIA Class submarines. Additionally, the continuous ship upgrades necessary to maintain class viability of the earlier ships are included in this funding line. This is particularly important for Commercial Off-the-Shelf (COTS) Technology Refreshment and Technology Upgrades for Non-Propulsion Electronic Systems (NPES). The class level of modernization and capability rests on available resources. [P40A / Auxilliary Equipment]: Auxiliary equipment component includes funding for ladders and ladder storage containers for Sail Racetracks, Logistics Escape Trunk/Logistics Plug Trunk (LET/LPT) and other equipment such as I&D material, support material for VPT, and storage containers for Center Cell Access Port(CCAP)/All Up Round Volumetric Shape(AURS)/All Up Round Ballast Grade B(AURBb). [P40A / Non-Tactical Data Processing System]: Provide software and hardware updates, software licenses and technical and logistics support to the Non-Tactical Data Processing System (NTDPS).		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy				Date: February 2018	
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment				P-1 Line Item Number / Title: 0942 / Virginia Class Support Equipment	
ID Code (A=Service Ready, B=Not Service Ready): A		Program Elements for Code B Items: N/A		Other Related Program Elements: 0604558N, 0204281N	
Line Item MDAP/MAIS Code: 516					

Exhibits Schedule					Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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	Virginia Class Support Equipment				- / 653.790	- / 8.968	- / 9.131	- / 13.622	- / -	- / 13.622
P-3a	1 / H1RC6 - Major Shore Spares (Various)				- / 200.299	- / 7.025	- / 22.255	- / 25.209	- / 0.000	- / 25.209
P-3a	2 / HRC13 - Hotel Services (Various)				- / 236.872	- / 29.600	- / 9.100	- / 27.497	- / 0.000	- / 27.497
P-3a	3 / HRC13 - Infrastructure Upgrades (Various)				- / 23.627	- / 9.453	- / 2.258	- / 0.000	- / 0.000	- / 0.000
P-3a	4 / HRC13 - Ship Control System (SCS) Modernization Backfit (Various)				- / 31.883	- / 8.862	- / 3.866	- / 0.000	- / 0.000	- / 0.000
P-40	Total Gross/Weapon System Cost				- / 1,146.471	- / 63.908	- / 46.610	- / 66.328	- / 0.000	- / 66.328

Exhibits Schedule					FY 2020	FY 2021	FY 2022	FY 2023	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	Virginia Class Support Equipment				- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / H1RC6 - Major Shore Spares (Various)				- / 14.029	- / 7.236	- / 7.494	- / 7.630	Continuing	Continuing
P-3a	2 / HRC13 - Hotel Services (Various)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 303.069
P-3a	3 / HRC13 - Infrastructure Upgrades (Various)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 35.338
P-3a	4 / HRC13 - Ship Control System (SCS) Modernization Backfit (Various)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 44.611
P-40	Total Gross/Weapon System Cost				- / 28.465	- / 23.263	- / 22.910	- / 23.326	Continuing	Continuing

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

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

Justification:
The FY 2019 funding request was reduced by \$1.195 million to reflect the Department of Navy's effort to support the Office of Management and Budget directed reforms for Efficiency and Effectiveness that include a lean, accountable, more efficient government.

The FY19 request includes an internal shift of funding from the PB18 line 3.5 (HM&E) to the P-40a line 3 (VPT and I&D Support Equipment). This effort is detailed in the following P40A note.

Increase in funding levels from FY18 to FY19 (~\$20 million) support the installation of the final Hotel Services modification on SSN 744 (see Description Above).

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9								P-1 Line Item Number / Title: 0942 / Virginia Class Support Equipment							Aggregated Items Title: Virginia Class Support Equipment					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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) All Prior Years																				
1.1) All Prior Years (APY)	A		-	-	567.801	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) All Prior Years			-	-	567.801	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2) H1RC2 TEST & EVALUATION EQUIPMENT																				
2.1) Test & Evaluation Measuring Equipment	A		-	-	28.035	-	-	2.011	-	-	2.047	-	-	2.021	-	-	-	-	-	2.021
Subtotal: 2) H1RC2 TEST & EVALUATION EQUIPMENT			-	-	28.035	-	-	2.011	-	-	2.047	-	-	2.021	-	-	-	-	-	2.021
3) H1RC8 - VPT and I&D Support Equipment																				
3.1) Weapons Equipment: VPT Platform	A		-	-	-	-	-	-	-	-	-	1,800K	2	3.600	-	-	-	1,800K	2	3.600
3.2) Industrial Equipment: Sail Racetracks	A		-	-	-	-	-	-	-	-	-	300,000.00	2	0.600	-	-	-	300,000.00	2	0.600
3.3) Auxilliary Equipment	A		-	-	-	-	-	-	-	-	-	636,000.00	1	0.636	-	-	-	636,000.00	1	0.636
Subtotal: 3) H1RC8 - VPT and I&D Support Equipment			-	-	0.000	-	-	-	-	-	-	-	-	4.836	-	-	-	-	-	4.836
4) H1RC13 TECH INSERTION TECH REFRESH & UPGRADES																				
4.1) HM&E Tech Refresh	A		-	-	7.850	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.2) NPES Tech Refresh	A		-	-	8.440	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.3) Shipboard Mobile Computing NTDPS (ULAN + SW Enclave + PDOCS + Upgrades)	A		-	-	14.400	-	-	2.490	-	-	2.535	-	-	2.581	-	-	-	-	-	2.581
4.4) System Level Activities PSA/Post PSA	A		-	-	7.076	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.5) Misc. Upgrades, Tech Refresh	A		-	-	18.681	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.6) Non-Tactical Data Processing System	A		-	-	-	-	-	4.467	-	-	4.549	-	-	4.184	-	-	-	-	-	4.184
Subtotal: 4) H1RC13 TECH INSERTION TECH REFRESH & UPGRADES			-	-	56.447	-	-	6.957	-	-	7.084	-	-	6.765	-	-	-	-	-	6.765
5) HRC14 SURVIVAL EQUIPMENT FOR SEA RIDERS																				
5.1) Survival Equipment for Sea Trial Riders	A		-	-	1.507	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9							P-1 Line Item Number / Title: 0942 / Virginia Class Support Equipment							Aggregated Items Title: Virginia Class Support Equipment						
Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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: 5) HRC14 SURVIVAL EQUIPMENT FOR SEA RIDERS			-	-	1.507	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total			-	-	653.790	-	-	8.968	-	-	9.131	-	-	13.622	-	-	-	-	-	13.622

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 2019 Navy									Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0942 / Virginia Class Support Equipment					Modification Number / Title: 1 / H1RC6 - Major Shore Spares			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	200.299	7.025	22.255	25.209	0.000	25.209	14.029	7.236	7.494	7.630	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	200.299	7.025	22.255	25.209	0.000	25.209	14.029	7.236	7.494	7.630	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	200.299	7.025	22.255	25.209	0.000	25.209	14.029	7.236	7.494	7.630	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:

Procure equipment and materials necessary to support the VIRGINIA Class submarine program. Materials are as large as rotors and as small as anodes and fasteners. VIRGINIA Class rotatable pool rotors are removed, refurbished, and placed into a pool. There is no set installation schedule as rotors, once available, are installed on subsequent availabilities.

There is a significant increase in the profile of this component from FY18 through FY20 in support of additional high speed machining capabilities at the Naval Foundry and Propeller Center (NFPC) in Philadelphia. FY18 investment will provide for the procurement and construction of SU-21 (large milling machine) with a 28-foot table diameter that is required for semi-finish through finish machining and assembly of COLUMBIA and VIRGINIA components including rotors, stators, and ducts. FY19 investment will provide for one measuring machine, one blast booth, one 85-ton furnace, and one SU-22 (vertical turning center). FY20 investment will provide for fully funding production tooling and fixtures and leica trackers/scanners.

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Exhibit P-3a, Individual Modification: PB 2019 Navy								Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0942 / Virginia Class Support Equipment				Modification Number / Title: 1 / H1RC6 - Major Shore Spares				
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Models of Systems Affected: VA Class Submarine			Modification Type: Various					Related RDT&E PEs:				
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: H1RC6 - Major Shore Spares												
B Kits												
Non-Recurring												
1.1.1) H1RC6 Prior Years - Organic		- / 172.620	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 172.620
1.1.2) Propulsor - Rotatable Pool - Organic		4 / 27.679	1 / 7.025	1 / 7.160	1 / 6.521	- / -	1 / 6.521	1 / 6.814	1 / 7.236	1 / 7.494	1 / 7.630	Continuing
1.1.3) NFPC High Speed Machine - Organic ⁽¹⁾		- / -	- / -	- / 15.095	- / 18.688	- / -	- / 18.688	- / 7.215	- / -	- / -	- / -	- / 40.998
Subtotal: Non-Recurring		- / 200.299	- / 7.025	- / 22.255	- / 25.209	- / -	- / 25.209	- / 14.029	- / 7.236	- / 7.494	- / 7.630	Continuing
Subtotal: H1RC6 - Major Shore Spares		4 / 200.299	1 / 7.025	1 / 22.255	1 / 25.209	- / -	1 / 25.209	1 / 14.029	1 / 7.236	1 / 7.494	1 / 7.630	Continuing
Subtotal: Procurement, All Modification Items		- / 200.299	- / 7.025	- / 22.255	- / 25.209	- / -	- / 25.209	- / 14.029	- / 7.236	- / 7.494	- / 7.630	Continuing
Installation												
Subtotal: Installation		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total												
Total Cost (Procurement + Support + Installation)		200.299	7.025	22.255	25.209	0.000	25.209	14.029	7.236	7.494	7.630	Continuing

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Exhibit P-3a, Individual Modification: PB 2019 Navy					Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9			P-1 Line Item Number / Title: 0942 / Virginia Class Support Equipment			Modification Number / Title: 1 / H1RC6 - Major Shore Spares	
ID Code (A=Service Ready, B=Not Service Ready) :					MDAP/MAIS Code:		
Modification Item 1 of 1: H1RC6 - Major Shore Spares							
Manufacturer Information							
Manufacturer Name: Naval Foundry & Propeller Center - Spare Rotor					Manufacturer Location: Philadelphia, PA		
Administrative Leadtime (<i>in Months</i>): 0					Production Leadtime (<i>in Months</i>): 32		
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Contract Dates	Feb 2017	Feb 2018	Feb 2019	Feb 2020	Feb 2021	Feb 2022	
Delivery Dates	Oct 2019	Oct 2020	Oct 2021	Oct 2022	Oct 2023	Oct 2024	
Manufacturer Name: Naval Foundry & Propeller Center - High Speed Machine					Manufacturer Location: Philadelphia, PA		
Administrative Leadtime (<i>in Months</i>): 0					Production Leadtime (<i>in Months</i>): 12		
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Contract Dates		Feb 2018	Feb 2019	Feb 2020			
Delivery Dates		Feb 2019	Feb 2020	Feb 2021			
Footnotes: ⁽¹⁾ The significant increase in the profile from FY18 through FY20 is in support of high speed machining at the Naval Foundry and Propeller Center (NFPC) in Philadelphia to support recapitalization of production capability. Investment will provide for the procurement and construction of large high speed milling machines with 28-foot table diameters that are required for semi-finish through finish machining and assembly of COLUMBIA and VIRGINIA components including rotors, stators, and ducts.							

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Exhibit P-3a, Individual Modification: PB 2019 Navy						Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0942 / Virginia Class Support Equipment				Modification Number / Title: 2 / HRC13 - Hotel Services			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	236.872	29.600	9.100	27.497	0.000	27.497	0.000	0.000	0.000	0.000	0.000	303.069
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	236.872	29.600	9.100	27.497	0.000	27.497	0.000	0.000	0.000	0.000	0.000	303.069
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	236.872	29.600	9.100	27.497	0.000	27.497	0.000	0.000	0.000	0.000	0.000	303.069
(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:

Provide procurement of materials necessary to modernize VIRGINIA Class Submarine Blocks I & II (774-783) infrastructure (i.e. power, cabling, cooling, and arrangements of the ship for the entire Government Furnished Equipment (GFE)/ Contractor Furnished Equipment (CFE) NPES configuration). This combination of Hull, Mechanical and Electrical (HM&E) alterations to VIRGINIA Class submarines is collectively referred to as the "Hotel Services" modification. This Hotel Service modification is necessary to accommodate modernization to major combat system alterations (i.e. A-RCI, AN/BYG-1, and ISIS) and are completed concurrently with those major combat system alterations. TI-02 baseline systems Hotel Services modernizations are completed during Post Shakedown Availability (PSA) for SSN777 and SSN779-783 and during EDSRA or TYCOM Operational Availability (TOA) for SSN774-SSN776 and SSN778. Block III and follow ships do not require this significant HM&E infrastructure upgrade as the baseline design for those ships accounts for the necessary power, cabling, cooling, etc. required to host upgrades to major combat systems.

Hotel Services modernization kit procurement for SSN778 occurred in FY16 and is being installed during FY17 EDSRA. Kit procurement for SSN774 takes place in FY18 and will be installed during FY19 DMP. This is the final procurement and installation for HSWG, after which all Blk I and II hulls will have received the upgrade.

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LI 0942 - Virginia Class Support Equipment
Navy

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0942 / Virginia Class Support Equipment										Modification Number / Title: 2 / HRC13 - Hotel Services											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: HRC13 - Hotel Services																															
Manufacturer Information																															
Manufacturer Name: Electric Boat-VA Platform Mod ⁽²⁾															Manufacturer Location: Groton, CT																
Administrative Leadtime <i>(in Months)</i> : 0															Production Leadtime <i>(in Months)</i> : 9																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates						Oct 2017																									
Delivery Dates						Jul 2018																									
Installation Information																															
Method of Implementation: AIT:: Installation Name: TI-02 Baseline Upgrade																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		8 / 123.339		1 / 29.600		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		9 / 152.939					
FY 2017		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2018		- / -		- / -		- / -		1 / 27.497		0 / 0.000		1 / 27.497		- / -		- / -		- / -		- / -		- / -		0 / 0.000		1 / 27.497					
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
Total		8 / 123.339		1 / 29.600		- / -		1 / 27.497		0 / 0.000		1 / 27.497		- / -		- / -		- / -		- / -		- / -		0 / 0.000		10 / 180.436					
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	8	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10
Out	8	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10
Footnotes: ⁽²⁾ VA Platform Modernization TI-02 Baseline Upgrade																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0942 / Virginia Class Support Equipment						Modification Number / Title: 3 / HRC13 - Infrastructure Upgrades		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	23.627	9.453	2.258	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	35.338
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	23.627	9.453	2.258	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	35.338
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	23.627	9.453	2.258	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	35.338
<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: Provide procurement of materials necessary to modernize VIRGINIA Class unique Contractor Furnished Equipment (CFE) to sustain interfaces and technology baseline with the connecting Government Furnished sub-systems contained in the Non-Propulsion Electronics System suite. These sub-systems include; Portable Ship Control System (PSCS), Total Ship Monitoring System, Circuit D, Ship Control System, Light Weight Wide Aperture Array and Interior Communication System.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy									Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0942 / Virginia Class Support Equipment					Modification Number / Title: 3 / HRC13 - Infrastructure Upgrades				
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: VA Class Submarines				Modification Type: Various				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> HRC13 - Infrastructure Upgrades													
A Kits													
Recurring													
1.1.1) Design - Organic	- / 4.312	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 4.312	
<i>Subtotal: Recurring</i>	- / 4.312	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 4.312	
Non-Recurring													
1.2.1) Infrastructure Updates (from TI-08 and beyond baseline) - NonOrganic	3 / 12.364	1 / 5.878	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 18.242	
<i>Subtotal: Non-Recurring</i>	- / 12.364	- / 5.878	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 18.242	
<i>Subtotal: HRC13 - Infrastructure Upgrades</i>	3 / 16.676	1 / 5.878	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	4 / 22.554	
<i>Subtotal: Procurement, All Modification Items</i>	- / 16.676	- / 5.878	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 22.554	
Installation													
<i>Modification Item 1 of 1:</i> HRC13 - Infrastructure Upgrades	- / 6.951	- / 3.575	- / 2.258	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 12.784	
<i>Subtotal: Installation</i>	- / 6.951	- / 3.575	- / 2.258	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 12.784	
Total													
Total Cost (Procurement + Support + Installation)	23.627	9.453	2.258	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	35.338	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0942 / Virginia Class Support Equipment										Modification Number / Title: 3 / HRC13 - Infrastructure Upgrades											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: HRC13 - Infrastructure Upgrades																															
Manufacturer Information																															
Manufacturer Name: Electric Boat-Infrastructure Upgrades															Manufacturer Location: Groton, CT																
Administrative Leadtime (in Months): 0															Production Leadtime (in Months): 10																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates		Oct 2016																													
Delivery Dates		Aug 2017																													
Installation Information																															
Method of Implementation: ALT:: Installation Name: Infrastructure Updates (from TI-08 and beyond baseline)																															
Installation Cost		Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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 / 6.951		1 / 3.575		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		3 / 10.526							
FY 2017		- / -		- / -		1 / 2.258		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		1 / 2.258							
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		2 / 6.951		1 / 3.575		1 / 2.258		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		4 / 12.784							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	2	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Out	2	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0942 / Virginia Class Support Equipment					Modification Number / Title: 4 / HRC13 - Ship Control System (SCS) Modernization Backfit		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	31.883	8.862	3.866	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	44.611
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	31.883	8.862	3.866	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	44.611
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	31.883	8.862	3.866	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	44.611
<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: Procure and install obsolescence redesign for Ship Control System (SCS) on Block I and II. The material procurement in FY14-17 includes long lead items for four shipsets for backfit (SSN776-SSN779).												

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LI 0942 - Virginia Class Support Equipment
Navy

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0942 / Virginia Class Support Equipment										Modification Number / Title: 4 / HRC13 - Ship Control System (SCS) Modernization Backfit											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: HRC13 - Ship Control System (SCS) Modernization Backfit																															
Manufacturer Information																															
Manufacturer Name: Electric Boat-Procurement ⁽³⁾															Manufacturer Location: Groton, CT																
Administrative Leadtime (in Months): 0															Production Leadtime (in Months): 13																
Dates		FY 2017			FY 2018			FY 2019			FY 2020			FY 2021			FY 2022			FY 2023											
Contract Dates		Nov 2016																													
Delivery Dates		Dec 2017																													
Installation Information																															
Method of Implementation: AIT:: Installation Name: Material and Install																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total																		
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																		
Prior Years		3 / 7.902	1 / 3.675	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	4 / 11.577																		
FY 2017		- / -	- / -	1 / 3.866	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	1 / 3.866																		
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		3 / 7.902	1 / 3.675	1 / 3.866	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	5 / 15.443																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	3	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
Out	3	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
Footnotes: ⁽³⁾ SCS Backfit Procurement																															

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment							P-1 Line Item Number / Title: 0944 / LCS Class 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	124.684	43.819	47.955	47.241	0.000	47.241	56.761	65.065	66.341	67.725	-	519.591
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	124.684	43.819	47.955	47.241	0.000	47.241	56.761	65.065	66.341	67.725	-	519.591
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	124.684	43.819	47.955	47.241	0.000	47.241	56.761	65.065	66.341	67.725	-	519.591
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	1.823	1.492	2.754	-	2.754	2.278	-	-	-	-	8.347
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: The FY 2019 funding request was reduced by \$.158 million to reflect the Department of Navy's effort to support the Office of Management and Budget directed reforms for Efficiency and Effectiveness that include a lean, accountable, more efficient government. This funding procures long-lead major end items and sub-component kits required for repairs to both variants of Littoral Combat Ships (LCS). The items procured mitigate major long-lead replacement times due to system failures and casualties and increases availability of vital Fleet assets by reducing repair part procurement and delivery times. Funding procures support equipment, required ancillary equipment, and associated engineering and technical support services for LCS. LN001 - LCS Battle Spares This line procures shore-based battle spares, ensuring their availability in the event of a failure or major casualty to key systems. Systems that require shore-based spares include gas turbines, diesel engines and generators, propulsion systems, reduction gears, auxiliary propulsion units (APUs), machinery plant control & monitoring systems (MPCMSs), C5I, and Combat Systems. Inventory objectives are determined by the LCS Reliability, Maintainability, and Availability (RMA) data, NAVSEA RMA guidance, the critical application of equipment, and input from the NAVSEA 05 Technical community. LN002 - LCS Water Jet Spares Both LCS variants are propelled by water jets; this line procures spare water jets and water jet components. There are two LCS designs, the FREEDOM variant and the INDEPENDENCE variant, each using four water jets. The FREEDOM variant uses Rolls-Royce water jets and the INDEPENDENCE variant uses Wartsila Lips water jets. The water jet assemblies are mounted externally on the ships' transom. These items will be designated 2S cog material and support a rotatable pool for life cycle sustainment. In the event of a casualty, the water jets are removed and sent to a depot to be repaired. LN003 - Engineering Services This funding provides engineering and technical support for LCS Class Support Equipment. Services include the establishment of Technical Data Packages (TDPs) and the creation of associated depot level repair parts lists/installation requirements. Funding is also provided for Non-Recurring Engineering (NRE) and Design Services Allocation (DSA) modernization efforts tied to the ship availabilities. LN004 - Habitability Modification Habitability Modifications include updating permanent berthing spaces, refrigeration (chill and freeze), dry provision stores, potable water, solid waste storage, and laundry for both FREEDOM and INDEPENDENCE variants.												

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment		P-1 Line Item Number / Title: 0944 / LCS Class 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		
LN005 - LCS Ships Class Safety Design Changes Safety modifications include the redesigned stern ramp for the FREEDOM variant ships to support 11M Rigid Hull Inflatable Boats (RHIB) operations and the installation of bridge wing for safe and effective operation on the INDEPENDENCE variant ships. In FY18, the budget for the LCS Ships Class Safety Design Changes was realigned to LI 1604, LCS In-Service Modernization. LN006 - LCS Ships Class Ancillary Equipment This funding procures the connective equipment necessary to ensure fit and function of procured LCS Class Support Equipment when installed. LN007 - AFSB SOF MODs This funding procures the 3-D Air Search Radar to modify the Mobile Landing Platform-Afloat Forward Staging Base (MLP-AFSB) (Expeditionary Mobile Base, ESB) to support Special Operations Forces (SOF) requirements. The FY 2019 funding request was reduced by \$15.0 million to account for the availability of prior year execution balances.		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy								Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment						P-1 Line Item Number / Title: 0944 / LCS Class 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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	LCS Class Support Equipment	P-5a			- / 124.684	- / 43.819	- / 47.955	- / 47.241	- / -	- / 47.241
P-40	Total Gross/Weapon System Cost				- / 124.684	- / 43.819	- / 47.955	- / 47.241	- / 0.000	- / 47.241
*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: LN001 - LCS Battle Spares This line procures shore-based battle spares to ensure availability of these assets in the event of a casualty to key systems. FY19 procurement of 2 Main Propulsion Diesel Engines (MPDE) and 3 Ship Service Diesel Generator (SSDG) for the INDEPENDENCE variant is necessary to reach inventory objective levels. Procurement of the INDEPENDENCE variant Twin Boom Extensible Crane (TBEC) is based on the different configuration for LCS 6AF. FY19 FREEDOM procurements also include 1 Launch Recovery and Handling System (LRHS), 1 Main Propulsion Diesel Engine (MPDE), 2 Ship Service Diesel Generator (SSDG), 1 FCS 57 (Gun Fire Control System replacing the DORNA GFCS on LCS 5 AF), 1 GIC Fire Control System, 2 Auxiliary Propulsion Units and 2 Star Safire III. LN002 - LCS Water Jet Spares LCS water jets procurements will support the establishment of a rotatable pool to replace assets during CNO availabilities. Increase in procurement of water jets provides adequate ready for issue (RFI) assets to quickly remove/replace/repair actions for CNO Availabilities to begin in FY 19. The rotatable pool enables efficiencies and allows for decreased dry-dock time periods to address water jet repairs. The removed assets will be repaired and placed into the available pool of assets to support future LCS CNO Availabilities. Water Jet variation in component costs are a result of five (5) different configuration and two (2) Original Equipment Manufacturers (Rolls Royce & Wartsilla): LCS 1/3, LCS 5AF, LCS 2, LCS 4 and LCS 6AF. The quantities support the different configurations and support of the planned ship availabilities. LN003 - Engineering Services This funding provides engineering and technical support for LCS Class Support Equipment develops Technical Data Packages (TDPs) and creates associated depot level repair parts lists/installation requirements. LN004 - Habitability Modification Habitability Modifications (racks, increased provisioning stowage, solid waste stowage, laundry capacity and potable water) to increase permanent berthing to 98 for FREEDOM and INDEPENDENCE variants to be installed during the Post Shakedown Availability (PSA) period. LN005 - LCS Ships Class Safety Design Changes Safety modifications include the redesigned stern ramp for the FREEDOM variant ships to support 11M Rigid Hull Inflatable Boats (RHIB) operations and the installation of bridge wing for safe and effective operation on the INDEPENDENCE variant ships during the PSA period. LN006 - LCS Ships Class Ancillary Equipment This funding procures the connective equipment necessary to ensure fit and function of procured Class Support Equipment when installed. LN007 - AFSB SOF MODs This funding procures the 3-D Air Search Radar to modify the Mobile Landing Platform-Afloat Forward Staging Base (MLP-AFSB) (Expeditionary Mobile Base, ESB) to support Special Operations Forces (SOF) requirements.										

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9								P-1 Line Item Number / Title: 0944 / LCS Class Support Equipment							Aggregated Items Title: LCS Class Support Equipment					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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) LN001 LCS Battle Spares																				
1.1) MAIN PROPULSION DIESEL ENGINE (INDEPENDENCE VARIANT) ⁽¹⁾	A		4,825K	2	9.650	4,703K	1	4.703	4,797K	1	4.797	4,893K	2	9.786	-	-	-	4,893K	2	9.786
1.2) MT-30 GAS TURBINE ENGINE (SUB-ASSEMBLY ENGINE FREEDOM VARIANT) ^{(1)(†)}	A		5,036K	2	10.073	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.3) MT-30 GAS TURBINE ENGINE (FULL ENGINE FREEDOM VARIANT) ^{(2)(†)}	A		-	-	-	-	-	-	15,955K	2	31.910	-	-	-	-	-	-	-	-	-
1.4) SHIPS SERVICE DIESEL GENERATOR (INDEPENDENCE VARIANT) ^(†)	A		3,881K	2	7.762	1,713K	1	1.713	-	-	-	894,000.00	3	2.682	-	-	-	894,000.00	3	2.682
1.5) LAUNCH, RECOVERY, AND HANDLING SYSTEM (FREEDOM VARIANT) ^(†)	A		3,598K	1	3.598	3,802K	1	3.802	-	-	-	3,595K	1	3.595	-	-	-	3,595K	1	3.595
1.6) INTEGRATED BRIDGE SYSTEM	A		924,000.00	1	0.924	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.7) MT-30 GAS TURBINE ENGINE ANCILLARY EQUIPMENT (FREEDOM VARIANT)	A		8,354K	1	8.354	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.9) MAIN PROP. CONTRL. & MONITOR SYS (MPCMS) Partial kit	A		750,000.00	1	0.750	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.10) TWIN-BOOM EXTENSIBLE CRANE (INDEPENDENCE VARIANT) ^(†)	A		3,700K	1	3.700	-	-	-	-	-	-	3,975K	1	3.975	-	-	-	3,975K	1	3.975
1.11) TRS-3D RADAR (FREEDOM VARIANT) ^(†)	A		1,189K	3	3.566	-	-	-	1,680K	1	1.680	-	-	-	-	-	-	-	-	-
1.12) SEA GIRAFFE 3D RADAR	A		1,856K	2	3.713	-	-	-	1,680K	1	1.680	-	-	-	-	-	-	-	-	-

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy																Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9						P-1 Line Item Number / Title: 0944 / LCS Class Support Equipment										Aggregated Items Title: LCS Class Support Equipment					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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)	
(INDEPENDENCE VARIANT) ^(†)																					
1.13) MULT. AIRCRAFT NOSE & TAILGEAR INTEGRATED SYS (INDEPENDENCE VARIANT) ^(†)	A		900,000.00	1	0.900	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1.14) REDUCTION GEAR (FREEDOM VARIANT)	A		13,614K	1	13.614	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1.15) REDUCTION GEAR (INDEPENDENCE VARIANT)	A		6,449K	1	6.449	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1.16) ELECTRONIC SUPPORT MEASURES ^(†)	A		-	-	-	1,450K	1	1.450	-	-	-	-	-	-	-	-	-	-	-	-	
1.17) AUXILIARY PROPULSION UNIT ^(†)	A		809,000.00	1	0.809	1,190K	2	2.379	-	-	-	889,000.00	2	1.778	-	-	-	889,000.00	2	1.778	
1.18) MAIN PROPULSION DIESEL ENGINE (FREEDOM VARIANT) ^(†)	A		5,647K	2	11.294	-	-	-	5,942K	1	5.942	6,061K	1	6.061	-	-	-	6,061K	1	6.061	
1.19) SHIPS SERVICE DIESEL GENERATOR (FREEDOM VARIANT) ^(†)	A		805,666.67	3	2.417	831,000.00	1	0.831	-	-	-	841,000.00	2	1.682	-	-	-	841,000.00	2	1.682	
1.20) FIRE CONTROL SYSTEM (FCS) 57 ^(†)	A		-	-	-	-	-	-	-	-	-	4,800K	1	4.800	-	-	-	4,800K	1	4.800	
1.21) GIC Fire Control ^(†)	A		-	-	-	-	-	-	-	-	-	2,440K	1	2.440	-	-	-	2,440K	1	2.440	
1.26) Star Safire III ^(†)	A		-	-	-	-	-	-	-	-	-	1,400K	2	2.800	-	-	-	1,400K	2	2.800	
Subtotal: 1) LN001 LCS Battle Spares			-	-	87.573	-	-	14.878	-	-	46.009	-	-	39.599	-	-	-	-	-	39.599	
2) LN002 LCS Water Jet Spares																					
2.1) WATERJET ASSEMBLY (FREEDOM VARIANT) ^(†)	A		1,582K	4	6.328	2,460K	4	9.840	-	-	-	-	-	-	-	-	-	-	-	-	
2.2) WATERJET IMPELLER	A		726,142.86	7	5.083	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9							P-1 Line Item Number / Title: 0944 / LCS Class Support Equipment								Aggregated Items Title: LCS Class Support Equipment					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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)
(INDEPENDENCE VARIANT)																				
Subtotal: 2) LN002 LCS Water Jet Spares			-	-	11.411	-	-	9.840	-	-	-	-	-	-	-	-	-	-	-	-
3) LN002 LCS 1/3 Water Jet Spares																				
3.1) Pump Unit, Steering ^(†)	A		-	-	-	-	-	-	-	-	-	1,336K	1	1.336	-	-	-	1,336K	1	1.336
3.2) 153 Impeller ^(†)	A		-	-	-	-	-	-	-	-	-	459,000.00	1	0.459	-	-	-	459,000.00	1	0.459
3.3) Pump Unit, Boost ^(†)	A		-	-	-	-	-	-	-	-	-	1,224K	1	1.224	-	-	-	1,224K	1	1.224
3.4) Steering/ Reversing Assembly ^(†)	A		-	-	-	-	-	-	-	-	-	969,000.00	1	0.969	-	-	-	969,000.00	1	0.969
Subtotal: 3) LN002 LCS 1/3 Water Jet Spares			-	-	0.000	-	-	-	-	-	-	-	-	3.988	-	-	-	-	-	3.988
4) LN002 LCS 5AF Water Jet Spares																				
4.3) Impeller Shaft Assembly ^(†)	A		-	-	-	-	-	-	-	-	-	561,000.00	1	0.561	-	-	-	561,000.00	1	0.561
Subtotal: 4) LN002 LCS 5AF Water Jet Spares			-	-	0.000	-	-	-	-	-	-	-	-	0.561	-	-	-	-	-	0.561
5) LN002 LCS 2 Water Jet Spares																				
5.1) LCS 150E Water Jet Assembly ^(†)	A		-	-	-	-	-	-	-	-	-	1,254K	1	1.254	-	-	-	1,254K	1	1.254
5.3) LCS 150E Shaft Assembly ^(†)	A		-	-	-	-	-	-	-	-	-	450,000.00	1	0.450	-	-	-	450,000.00	1	0.450
Subtotal: 5) LN002 LCS 2 Water Jet Spares			-	-	0.000	-	-	-	-	-	-	-	-	1.704	-	-	-	-	-	1.704
6) LN002 LCS 4 Water Jet Spares																				
6.1) WLD 1720 Water Jet Assembly ^(†)	A		-	-	-	-	-	-	-	-	-	850,000.00	1	0.850	-	-	-	850,000.00	1	0.850
Subtotal: 6) LN002 LCS 4 Water Jet Spares			-	-	0.000	-	-	-	-	-	-	-	-	0.850	-	-	-	-	-	0.850
8) LN003 Engineering Services (TDPs & installation planning)																				
8.1) Engineering Services (TDPs & installation planning)	A		-	-	0.405	-	-	0.208	-	-	0.211	-	-	0.361	-	-	-	-	-	0.361
8.2) Modernization Design/Eng Changes for LCS 4	A		-	-	3.600	-	-	3.747	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 8) LN003 Engineering Services (TDPs & installation planning)			-	-	4.005	-	-	3.955	-	-	0.211	-	-	0.361	-	-	-	-	-	0.361

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9							P-1 Line Item Number / Title: 0944 / LCS Class Support Equipment								Aggregated Items Title: LCS Class Support Equipment					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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)
9) LN004 Habitability Modification																				
9.1) HABITABILITY MOD (FREEDOM VARIANT) ^(†)	A		2,262K	2	4.525	4,815K	1	4.815	-	-	-	-	-	-	-	-	-	-	-	-
9.2) HABITABILITY MOD (INDEPENDENCE VARIANT) ^(†)	A		2,262K	2	4.525	2,263K	2	4.526	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 9) LN004 Habitability Modification			-	-	9.050	-	-	9.341	-	-	-	-	-	-	-	-	-	-	-	-
10) LN005 LCS Ship Class Safety Design Changes																				
10.1) Stern Ramp (FREEDOM VARIANT) ^(†)	A		600,000.00	2	1.200	600,000.00	1	0.600	-	-	-	-	-	-	-	-	-	-	-	-
10.2) Bridge Wings (INDEPENDENCE VARIANT) ^(†)	A		2,600K	2	5.200	2,450K	2	4.900	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 10) LN005 LCS Ship Class Safety Design Changes			-	-	6.400	-	-	5.500	-	-	-	-	-	-	-	-	-	-	-	-
11) LN006 Ancillary Equipment																				
11.1) Ancillary Equipment	A		-	-	0.535	-	-	-	-	-	0.444	-	-	0.178	-	-	-	-	-	0.178
Subtotal: 11) LN006 Ancillary Equipment			-	-	0.535	-	-	-	-	-	0.444	-	-	0.178	-	-	-	-	-	-
12) LN007 Afloat Foreward Staging Base SOF Mods																				
12.1) AFSB SOF Mods MLP-AFSB 3 Rev	A		-	-	5.710	-	-	0.305	-	-	1.291	-	-	-	-	-	-	-	-	-
Subtotal: 12) LN007 Afloat Foreward Staging Base SOF Mods			-	-	5.710	-	-	0.305	-	-	1.291	-	-	-	-	-	-	-	-	-
Total			-	-	124.684	-	-	43.819	-	-	47.955	-	-	47.241	-	-	-	-	-	47.241

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) CE 1.2 MT-30 FY17 procured separate stages/sub-assemblies (all usable-end-items) of the MT-30 Gas Turbine Engine.

(2) CE 1.3 MT-30 FY18 procures 2 full MT-30 Gas Turbine Engines.

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Exhibit P-5a, Procurement History and Planning: PB 2019 Navy									Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0944 / LCS Class Support Equipment					Aggregated Items: LCS Class Support Equipment			
Item Number / Title [DODIC]	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1) LN001 LCS Battle Spares												
1.1) MAIN PROPULSION DIESEL ENGINE (INDEPENDENCE VARIANT)		2017	MTU / GERMANY	C / FFP	NAVSEA	Jun 2017	Jun 2018	1	4,703K	Y		Feb 2016
1.1) MAIN PROPULSION DIESEL ENGINE (INDEPENDENCE VARIANT)		2018	MTU / GERMANY	C / FFP	NAVSEA	Jun 2018	Jun 2019	1	4,797K	Y		Feb 2017
1.1) MAIN PROPULSION DIESEL ENGINE (INDEPENDENCE VARIANT)		2019	MTU / GERMANY	C / FFP	NAVSEA	Jun 2019	Jun 2020	2	4,893K	Y		Feb 2018
1.2) MT-30 GAS TURBINE ENGINE (SUB-ASSEMBLY ENGINE FREEDOM VARIANT) ⁽¹⁾		2016	ROLLS ROYCE / WALEPOLE, MA	C / FFP	NAVSUP/WSS	May 2016	May 2018	1	5,170K	Y		Nov 2015
1.3) MT-30 GAS TURBINE ENGINE (FULL ENGINE FREEDOM VARIANT) ⁽²⁾		2018	ROLLS ROYCE / WALEPOLE, MA	C / FFP	NAVSEA	Mar 2018	Mar 2019	2	15,955K	Y		May 2016
1.4) SHIPS SERVICE DIESEL GENERATOR (INDEPENDENCE VARIANT)		2017	MTU / GERMANY	C / FFP	NAVSEA	Jun 2017	Jun 2018	1	1,713K	Y		Feb 2016
1.4) SHIPS SERVICE DIESEL GENERATOR (INDEPENDENCE VARIANT)		2019	MTU / GERMANY	C / FFP	NAVSEA	Jun 2019	Jun 2020	3	894,000.00	Y		Nov 2018
1.5) LAUNCH, RECOVERY, AND HANDLING SYSTEM (FREEDOM VARIANT)		2017	Oldenburg Group Inc. / Kingsford, MI	C / FFP	NAVSUP/WSS	Jun 2017	Dec 2018	1	3,802K	Y		Feb 2016
1.5) LAUNCH, RECOVERY, AND HANDLING SYSTEM (FREEDOM VARIANT)		2019	Oldenburg Group Inc. / Kingsford, MI	C / FFP	NAVSUP/WSS	Jun 2019	Dec 2020	1	3,595K	Y		Feb 2018
1.10) TWIN-BOOM EXTENSIBLE CRANE (INDEPENDENCE VARIANT)		2019	Maritime Applied Physics Corporation / Baltimore, MD	C / FFP	NAVSEA	Jun 2019	Dec 2020	1	3,975K	Y		Nov 2018
1.11) TRS-3D RADAR (FREEDOM VARIANT)		2018	EADS North America / Herdon, VA	C / FFP	NAVSEA	Feb 2018	Aug 2019	1	1,680K	Y		Mar 2017
1.12) SEA GIRAFFE 3D RADAR (INDEPENDENCE VARIANT)		2018	Saab Sensis Corporation / Reston, VA	PO	NSWC, PHD	May 2018	Aug 2019	1	1,680K	Y		Apr 2017
1.13) MULT. AIRCRAFT NOSE & TAILGEAR INTEGRATED SYS (INDEPENDENCE VARIANT)		2016	Curtis-Wright Flow Control / United Kingdom	C / FFP	NAVSUP/WSS	Sep 2016	Mar 2018	1	900,000.00	Y		Nov 2015
1.16) ELECTRONIC SUPPORT MEASURES		2017	Argon Corp / Great Neck, NY	C / FFP	NAVSUP/WSS	May 2017	May 2018	1	1,450K	Y		May 2016

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Exhibit P-5a, Procurement History and Planning: PB 2019 Navy									Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0944 / LCS Class Support Equipment					Aggregated Items: LCS Class Support Equipment			
Item Number / Title [DODIC]	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.17) AUXILIARY PROPULSION UNIT		2017	Fairbanks Morse / Beloit WI	C / FFP	NAVSUP/WSS	Jun 2017	Dec 2018	2	1,190K	Y		Jun 2016
1.17) AUXILIARY PROPULSION UNIT		2019	Fairbanks Morse / Beloit WI	C / FFP	NAVSUP/WSS	Jun 2019	Dec 2020	2	889,000.00	Y		Jun 2018
1.18) MAIN PROPULSION DIESEL ENGINE (FREEDOM VARIANT)		2018	Fairbanks Morse / Beloit WI	C / FFP	NAVSEA	Mar 2018	Sep 2019	1	5,942K	Y		Nov 2017
1.18) MAIN PROPULSION DIESEL ENGINE (FREEDOM VARIANT)		2019	Fairbanks Morse / Beloit WI	C / FFP	NAVSEA	Jun 2019	Dec 2020	1	6,061K	Y		Nov 2018
1.19) SHIPS SERVICE DIESEL GENERATOR (FREEDOM VARIANT)		2017	Fincantieri / Washington, DC	C / FFP	NAVSEA	May 2017	May 2018	1	831,000.00	Y		Feb 2016
1.19) SHIPS SERVICE DIESEL GENERATOR (FREEDOM VARIANT)		2019	Fincantieri / Washington, DC	C / FFP	NAVSEA	Jun 2019	Jun 2020	2	841,000.00	Y		Nov 2018
1.20) FIRE CONTROL SYSTEM (FCS) 57		2019	TBD / TBD	C / TBD	NAVSEA	Jun 2019	Jun 2020	1	4,800K	Y		Dec 2018
1.21) GIC Fire Control		2019	TBD / TBD	C / TBD	** NO PCO **	Jun 2019	Dec 2020	1	2,440K	Y		
1.26) Star Safire III		2019	TBD / TBD	C / TBD	** NO PCO **	Jun 2019	Dec 2020	2	1,400K	Y		
2) LN002 LCS Water Jet Spares												
2.1) WATERJET ASSEMBLY (FREEDOM VARIANT)		2017	Rolls Royce / MS	C / FFP	NAVSEA	May 2017	May 2019	4	2,460K	Y		Mar 2016
3) LN002 LCS 1/3 Water Jet Spares												
3.1) Pump Unit, Steering		2019	Rolls Royce / MS	C / FFP	** NO PCO **	Mar 2019	Mar 2021	1	1,336K	Y		
3.2) 153 Impeller		2019	Rolls Royce / MS	C / FFP	** NO PCO **	Mar 2019	Mar 2021	1	459,000.00	Y		
3.3) Pump Unit, Boost		2019	Rolls Royce / MS	C / FFP	** NO PCO **	Mar 2019	Mar 2021	1	1,224K	Y		
3.4) Steering/Reversing Assembly		2019	Rolls Royce / MS	C / FFP	** NO PCO **	Mar 2019	Mar 2021	1	969,000.00	Y		
4) LN002 LCS 5AF Water Jet Spares												
4.3) Impeller Shaft Assembly		2019	Rolls Royce / MS	C / FFP	** NO PCO **	Mar 2019	Mar 2021	1	561,000.00	Y		
5) LN002 LCS 2 Water Jet Spares												
5.1) LCS 150E Water Jet Assembly		2019	Wartsilla / VA	C / FFP	** NO PCO **	Mar 2019	Mar 2020	1	1,254K	Y		
5.3) LCS 150E Shaft Assembly		2019	Wartsilla / VA	C / FFP	** NO PCO **	Mar 2019	Mar 2020	1	450,000.00	Y		
6) LN002 LCS 4 Water Jet Spares												
6.1) WLD 1720 Water Jet Assembly		2019	Wartsilla / VA	C / FFP	** NO PCO **	Jun 2019	Jun 2020	1	850,000.00	Y		
9) LN004 Habitability Modification												
9.1) HABITABILITY MOD (FREEDOM VARIANT)		2017	FRE Variant (LM) / Marinette, WI	C / CPAF	NAVSEA	Sep 2017	May 2018	1	4,815K	N		Jun 2017

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Exhibit P-5a, Procurement History and Planning: PB 2019 Navy									Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9			P-1 Line Item Number / Title: 0944 / LCS Class Support Equipment						Aggregated Items: LCS Class Support Equipment			
Item Number / Title [DODIC]	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
9.2) HABITABILITY MOD (INDEPENDENCE VARIANT)		2017	IND Variant (Austal) / Mobile, AL	C / CPAF	NAVSEA	Apr 2017	Dec 2017	2	2,263K	Y		Jan 2017
10) LN005 LCS Ship Class Safety Design Changes												
10.1) Stern Ramp (FREEDOM VARIANT)		2017	FRE Variant (LM) / Marinette, WI	C / CPAF	NAVSEA	Sep 2017	May 2018	1	600,000.00	N		Jun 2017
10.2) Bridge Wings (INDEPENDENCE VARIANT)		2017	IND Variant (Austal) / Mobile, AL	C / CPAF	NAVSEA	Apr 2017	Dec 2017	2	2,450K	N		Jan 2017

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment							P-1 Line Item Number / Title: 0945 / Submarine Batteries					
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	354.730	22.459	17.594	27.987	0.000	27.987	26.690	25.117	20.190	21.889	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	354.730	22.459	17.594	27.987	0.000	27.987	26.690	25.117	20.190	21.889	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	354.730	22.459	17.594	27.987	0.000	27.987	26.690	25.117	20.190	21.889	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: Procurement of Valve Regulated Lead Acid (VRLA) batteries and installation of Ship Alteration (ShipAlt) to modify submarines from use of legacy flooded battery (no longer in production at former sole source manufacturer) to new design VRLA battery. Installation of the VRLA battery includes installation of a new Automatic Battery Monitoring system (ABMS) as part of the ShipAlt. This program procures and installs initial and replacement VRLA batteries for all classes of submarines (LOS ANGELES, SEAWOLF , OHIO SSBN/SSGNs and VIRGINIA) . Batteries have a finite life and are consumables; this budget procures replacement VRLA batteries throughout the submarine service life on a notional 5 year replacement cycle. Battery operation and capacity is critical. Without acceptable battery capacity submarines cannot deploy effectively reducing the submarine force at a time when Strategic requirements, force protection and intelligence gathering capabilities are in high demand by combatant commanders. Beginning in FY19, program requirements were increased to provide needed critical support to operational submarines. These are funded via HM830 and include: Battery Installation Test Equipment/Fixtures: Procures battery charging and test equipment to support the testing, balancing, and charging of Submarine Batteries at Puget Sound Naval Shipyard (PSNS). This replaces the current PSNS Battery Shop 1,500 AMP Motor Generator with a 5,000 AMP solid state battery charger and other improvements required to conduct pre installation battery testing and troubleshooting prior to installation on SSBN/SSGNs. Submarine Battery Evaluation Center (SUBBEC): Procures needed equipment and test stands for a full battery test station at NSWC Crane to test a full submarine battery (250+ cells). This is vitally needed to help solve the battery life issues being experienced in the fleet. The proposed system would allow 24/7 unmanned testing and evaluation within the existing submarine battery test activity at NSWC Crane. Current capability must be constantly manned and monitored and only allows for testing of a small quantity of cells which does not provide a completely accurate representation of submarine battery operating profile or battery reaction to changes in profiles due to inherent in-balance in the strings of cells as installed on a submarine. Automated Battery Monitoring System (ABMS) Tech Refresh: Upgrades the currently fielded ABMS system that was developed in 2002 and is suffering from continued obsolescence issues which are directly impacting the fleet operations. Upgrades will be performed by NSWC Crane Power and Energy Division. The Power and Energy Division has one of the only DoD owned and operated circuit board production lines with reverse engineering and technical capabilities required to perform this Tech Refresh.												

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment		P-1 Line Item Number / Title: 0945 / Submarine Batteries
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		
HM002 LOS ANGELES SSN, HM008 OHIO Class SSBN/SSGN, HM009 SEAWOLF Class SSN, and HM010 VIRGINIA Class SSN: Procures replacement low maintenance sealed lead acid batteries for all submarines. This replaces flooded battery technology for which the industrial base ceased manufacture and support of in 2005. OHIO Class SSBN/SSGN replacements include handling and shipping trays to speed change-out during short refit periods Funds are provided based on a 5 year planned replacement cycle. HM830 Production Engineering: Naval Surface Warfare Center (NSWC) Crane, as the designated procurement activity and In-Service Engineering Agent (ISEA) monitors battery performance and schedules replacements with the fleet. NSWC Crane is tasked with leading a Government & Industry Root Cause Analysis (RCA) team to identify and address battery performance issues and provide corrective actions to operational submarines. NSWC Crane conducts qualification testing of delivered VRLA and analysis of poor performing VRLA cells returned from operational submarines which has proven very beneficial to the Navy in detecting battery deficiencies before installation, thus alleviating critical emergent fleet impact and assisting in identifying failure modes to improve long term performance. Funding provided to Puget Sound and Portsmouth Naval Shipyards include responsibilities for the VRLA and flooded battery inventory management, maintenance and storage, SHIPALT support, and AIT management. Also, Planning Yard and Lead Yard Services are funded through this line. HM5IN Procurement for Install/Installation under \$10M: Procurement of Valve Regulated Lead Acid (VRLA) batteries and install of ShipAlt to modify submarines from use of legacy flooded batteries for the LOS ANGELES, OHIO, SEAWOLF and VIRGINIA Class Submarines. Installation unit costs vary due to the availability types, location of installation and submarine type. All initial procurements and installations for the OHIO and SEAWOLF Class are complete. Funds remain for two initial procurements and installations, one for a VIRGINIA Class SSN planned for completion in FY18, and the final LOS ANGELES Class SSN in FY20.		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy								Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment						P-1 Line Item Number / Title: 0945 / Submarine Batteries				
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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	Equipment	P-5a			- / 354.730	- / 22.459	- / 17.594	- / 27.987	- / -	- / 27.987
P-40	Total Gross/Weapon System Cost				- / 354.730	- / 22.459	- / 17.594	- / 27.987	- / 0.000	- / 27.987
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										

Justification:
 The FY 2019 funding request was reduced by \$0.080 million to reflect the Department of Navy's effort to support the Office of Management and Budget directed reforms for Efficiency and Effectiveness that include a lean, accountable, more efficient government.

The increased funding for FY 2019 provides for 3 additional Main Storage Batteries (over last years levels) a series of critical three year projects for Submarine Battery program that includes the Battery Installation Test Equipment/Fixtures, the Submarine Battery Evaluation Center and the Automated Battery Monitoring System. Details on these projects are included in the description above.

FY17 decrease is due to a Congressional Mark against the OHIO class main storage battery for being "previously funded".

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy																Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9						P-1 Line Item Number / Title: 0945 / Submarine Batteries						Aggregated Items Title: Equipment								
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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) HM002 - LOS ANGELES Class Main Storage Battery																				
1.1) VRLA LOS ANGELES ^{(1)(f)}	A		-	-	7.980	759,000.00	2	1.518	835,000.00	4	3.340	864,000.00	6	5.184	-	-	-	864,000.00	6	5.184
1.2) VRLA LOS ANGELES Material ⁽²⁾	A		-	-	10.120	-	-	-	-	-	-	-	-	0.671	-	-	-	-	-	0.671
Subtotal: 1) HM002 - LOS ANGELES Class Main Storage Battery			-	-	18.100	-	-	1.518	-	-	3.340	-	-	5.855	-	-	-	-	-	5.855
2) HM008 - OHIO Class Main Storage Battery																				
2.1) VRLA OHIO ^{(3)(f)}	A		-	-	16.634	1,310K	1	1.310	1,442K	2	2.883	1,822K	3	5.466	-	-	-	1,822K	3	5.466
Subtotal: 2) HM008 - OHIO Class Main Storage Battery			-	-	16.634	-	-	1.310	-	-	2.883	-	-	5.466	-	-	-	-	-	5.466
3) HM009 - SEAWOLF Class Main Storage Battery																				
3.1) VRLA SEAWOLF ^{(4)(f)}	A		649,333.33	3	1.948	823,000.00	2	1.646	905,000.00	1	0.905	-	-	-	-	-	-	-	-	-
Subtotal: 3) HM009 - SEAWOLF Class Main Storage Battery			-	-	1.948	-	-	1.646	-	-	0.905	-	-	-	-	-	-	-	-	-
4) HM010 - VIRGINIA Class Main Storage Battery																				
4.1) VIRGINIA ^{(5)(f)}	A		-	-	4.951	823,000.00	1	0.823	905,500.00	2	1.811	1,396K	2	2.792	-	-	-	1,396K	2	2.792
4.2) VRLA VIRGINIA Material	A		-	-	11.456	-	-	1.963	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 4) HM010 - VIRGINIA Class Main Storage Battery			-	-	16.407	-	-	2.786	-	-	1.811	-	-	2.792	-	-	-	-	-	2.792
5) HM830 - Production Engineering / Test Equipment/ SUBEC / ABMS Tech Refresh																				
5.1) Production Engineering	A		-	-	46.963	-	-	4.857	-	-	4.479	-	-	4.767	-	-	-	-	-	4.767
5.2) Battery Installation Test Equipment/Fixtures ⁽⁶⁾	B		-	-	-	-	-	-	-	-	-	-	-	1.166	-	-	-	-	-	1.166
5.3) Submarine Battery Evaluation Center (SUBBEC) ⁽⁷⁾	A		-	-	-	-	-	-	-	-	-	-	-	5.875	-	-	-	-	-	5.875
5.4) ABMS Tech Refresh ⁽⁸⁾	A		-	-	-	-	-	-	-	-	-	-	-	0.900	-	-	-	-	-	0.900
Subtotal: 5) HM830 - Production Engineering / Test Equipment/ SUBEC / ABMS Tech Refresh			-	-	46.963	-	-	4.857	-	-	4.479	-	-	12.708	-	-	-	-	-	12.708
6) HM5IN Procurement for Install / Installation under \$10M																				
6.1) LA Class Procurement for Install/ Installation under \$10M ⁽⁹⁾	A		-	-	150.349	-	-	-	-	-	-	-	-	1.166	-	-	-	-	-	1.166

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9							P-1 Line Item Number / Title: 0945 / Submarine Batteries							Aggregated Items Title: Equipment						
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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) OH Class Procurement for Install/Insatllaton under \$10M	A		-	-	73.872	-	-	3.874	-	-	-	-	-	-	-	-	-	-	-	-
6.3) VA Class Procurement for Install / Installation under \$10M	A		-	-	30.457	-	-	6.468	-	-	4.176	-	-	-	-	-	-	-	-	-
Subtotal: 6) HM5IN Procurement for Install / Installation under \$10M			-	-	254.678	-	-	10.342	-	-	4.176	-	-	1.166	-	-	-	-	-	1.166
Total			-	-	354.730	-	-	22.459	-	-	17.594	-	-	27.987	-	-	-	-	-	27.987

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) 1.1 The current VRLA battery unit costs, depicted on the P40A exhibit, reflect the costs in the existing commercial vendor contracts and associated installation which varies based on hull type and availability type.
- (2) 1.2 FY19 Material funds identified are for ancillary material required to set up for and support installations.
- (3) 2.1 The current VRLA battery unit costs, depicted on the P40A exhibit, reflect the costs in the existing commercial vendor contracts and associated installation which varies based on hull type and availability type. FY19, FY22 & FY23 includes associated battery shipping tray.
- (4) 3.1 The current VRLA battery unit costs, depicted on the P40A exhibit, reflect the costs in the existing commercial vendor contracts and associated installation which varies based on hull type and availability type.
- (5) 4.1 The current VRLA battery unit costs, depicted on the P40A exhibit, reflect the costs in the existing commercial vendor contracts and associated installation which varies based on hull type and availability type. FY19 & FY21 includes the associated battery shipping tray.
- (6) 5.2 Battery Installation Test Equipment/Fixtures FY19 new start. Funding is provided for the purchase of battery charging equipment to support the testing, balancing, and charging of Submarine Batteries. For this equipment will replace the Puget Sound NSY Battery Shop 1500 AMP Motor Generator with 5,000A AMP solid state battery charger in to Bldg. 978. Improvements are required to conduct pre installation battery testing and troubleshooting.
- (7) 5.3 Submarine Battery Evaluation Center (SUBBEC) FY19 new start funding is provided for the full string battery test station (SUBBEC). The Submarine Battery Evaluation Center tests multiple battery string configurations which mirror specific submarine class installations. FY19 - FY21 funding encompasses the design phase, material procurement, performance evaluation, lab upgrades, installation and testing.
- (8) 5.4 FY19 new start provides funding for ABMS Tech Refresh that will be performed by NSWC Crane Power and Energy Division. The current plan is for material and Installation of the tech refresh beginning in Aug 2019. The installation is on ABMS on all Class VRLA Battery modified submarines and will continue through FY21.
- (9) Funds procure one Los Angeles Class battery in FY19 and installs it in FY20.

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Exhibit P-5a, Procurement History and Planning: PB 2019 Navy									Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0945 / Submarine Batteries					Aggregated Items: Equipment			
Item Number / Title [DODIC]	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1) HM002 - LOS ANGELES Class Main Storage Battery												
1.1) VRLA LOS ANGELES ⁽¹⁾		2017	ENERSYS & GNB (Exide) / Warrensburg, MO & Ft. Smith , AR	C / IDIQ	NSWC CRANE	Feb 2017	Feb 2018	2	759,000.00	Y		
1.1) VRLA LOS ANGELES ⁽¹⁾		2018	ENERSYS & GNB (Exide) / Warrensburg, MO & Ft. Smith , AR	C / IDIQ	NSWC CRANE	Mar 2018	Mar 2019	4	835,000.00	Y		
1.1) VRLA LOS ANGELES ⁽¹⁾		2019	ENERSYS & GNB (Exide) / Warrensburg, MO & Ft. Smith , AR	C / IDIQ	NSWC CRANE	Mar 2019	Mar 2020	6	864,000.00	Y		
2) HM008 - OHIO Class Main Storage Battery												
2.1) VRLA OHIO ⁽³⁾		2017	ENERSYS & GNB (Exide) / Warrensburg, MO & Ft. Smith , AR	C / IDIQ	NSWC CRANE	Feb 2017	Feb 2018	1	1,310K	Y		
2.1) VRLA OHIO ⁽³⁾		2018	ENERSYS & GNB (Exide) / Warrensburg, MO & Ft. Smith , AR	C / IDDQ	NSWC CRANE	Mar 2018	Mar 2019	2	1,442K	Y		
2.1) VRLA OHIO ⁽³⁾		2019	ENERSYS & GNB (Exide) / Warrensburg, MO & Ft. Smith , AR	C / IDIQ	NSWC CRANE	Mar 2019	Mar 2020	3	1,822K	Y		
3) HM009 - SEAWOLF Class Main Storage Battery												
3.1) VRLA SEAWOLF ⁽⁴⁾		2017	ENERSYS & GNB (Exide) / Warrensburg, MO & Ft. Smith , AR	C / IDIQ	** NO PCO **	Aug 2017	Aug 2018	2	823,000.00	Y		
3.1) VRLA SEAWOLF ⁽⁴⁾		2018	ENERSYS & GNB (Exide) / Warrensburg, MO & Ft. Smith , AR	C / IDIQ	** NO PCO **	Aug 2018	Aug 2019	1	905,000.00	Y		
4) HM010 - VIRGINIA Class Main Storage Battery												
4.1) VIRGINIA ⁽⁵⁾		2017	ENERSYS & GNB (Exide) / Warrensburg, MO & Ft. Smith , AR	C / IDIQ	NSWC CRANE	Feb 2017	Feb 2018	1	823,000.00	Y		
4.1) VIRGINIA ⁽⁵⁾		2018	ENERSYS & GNB (Exide) / Warrensburg, MO & Ft. Smith , AR	C / IDIQ	NSWC CRANE	Mar 2018	Mar 2019	2	905,500.00	Y		
4.1) VIRGINIA ⁽⁵⁾		2019	ENERSYS & GNB (Exide) / Warrensburg, MO & Ft. Smith , AR	C / IDIQ	NSWC CRANE	Mar 2019	Mar 2020	2	1,396K	Y		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy								Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment						P-1 Line Item Number / Title: 0946 / LPD Class 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	111.425	32.052	61.908	65.033	0.000	65.033	60.330	65.610	65.412	70.713	53.845	586.328
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	111.425	32.052	61.908	65.033	0.000	65.033	60.330	65.610	65.412	70.713	53.845	586.328
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	111.425	32.052	61.908	65.033	0.000	65.033	60.330	65.610	65.412	70.713	53.845	586.328
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Description:												
The FY 2019 funding request was reduced by \$4.000 million to account for the availability of prior year execution balances.												
This budget provides funding for the in service LPD 17 class program support equipment. Previous funding for LPD 17 class support equipment (FY12 and earlier) was provided under line item OPN 0981, Items Less Than \$5 Million. Funding is required to upgrade mission critical electronics and Hull Mechanical & Engineering (HM&E) systems including the Engineering Control Systems (ECS), Ship Control Systems (SCS), Degaussing Systems, Shipboard Wide-Area Network (SWAN), commercial software products for ECS, SCS, Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) and Administrative Communications.												
[P40A / CJ010 - Schoolhouse TTE]: CJ010 - SCHOOLHOUSE TTE Funding for Schoolhouse Technical Training Equipment (TTE) is for the infrastructure and equipment to set up the schoolhouses for multiple systems such as ECS and SCS 60Hz and Ship Service Diesel Generators (SSDG). The schoolhouses will provide critical training to sailors in operation and maintenance of those systems.												
[P40A / CJ020 - Shore Based Spares]: CJ020 SHORE BASED SPARES Shore-Based Spares are critical long lead time items that are staged shore-side in the event of a catastrophic failure on an operational ship. These spares must be periodically replenished as assets are utilized. Furthermore, as the LPD 17 Class continues to introduce new ships (additional) to the fleet, the number of spare requirements increases as additional items are added to the spares list to support newer shipboard configurations.												
[P40A / CJ080 Conjunctive HM&E AIT]: CJ080 CONJUNCTIVE HM&E ALTERATIONS Conjunctive HM&E Alterations includes design integration, equipment procurement, recurring equipment engineering, equipment integration, and Integrated Logistics Services (ILS).												
[P3A / CJ030 - HW/SW Obsolescence]: CJ030, CJ032, CJ034, CJ035 LPD 17 Hardware/Software HW/SW Obsolescence effort addresses critical hardware obsolescence and technology refreshment issues and supporting class upgrades focused on increased capability and reliability. Funding will support procurement of hardware and software changes to the systems listed: -Command Information Display System (CIDS) 23TV, Replace projectors with Light Emitting Diode(LED) Projectors -Engineering Control Systems (ECS) - Windows XP upgrade -Ship Control Systems (SCS) - Windows XP upgrade/SCS Tech Refresh, Digital Rudder Angle Display Information System (DRADIS)												

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment		P-1 Line Item Number / Title: 0946 / LPD Class 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		
-HM&E Network - HM&E Network Upgrades -Wire-free Portable Communication System (WPCS) - Uninterrupted Power Supply (UPS) Upgrade, Low Power Amplifier Upgrade, Main Site Upgrade. -27TV - 27TV System Upgrade -Advanced Fire and Smoke Sensor System (AFSS) - AFSS System Upgrade. -Integrated Voice Communication System (IVCS) - IVCS system upgrades (local cutout switches, AFT lookout communication mod, obsolete terminal replacement, FWD/AFT Keyswitched Integrated Terminal Equipment (KITE)), Software version 7.2.2 -1MC Announcing System - Digital Microphone Control Station -Navigational Data Distribution System (NDDS) - NDDS Navigation Network Installation -Damage Control Action Management System (DCAMS) - Upgrade to Advanced Damage Control System (ADCS) -Boundary Defense Cyber Security hardening		
[P3A - 2 / CJ040 HM&E Electrical Modifications]: CJ040 HM&E ELECTRICAL MODIFICATIONSHM&E Modernization funding is provided to correct mission, safety and reliability issues on electrical systems and ultimately resolve maintenance intensive system concerns. HM&E Electrical Modifications include: SWAN UPS- Space Based UPS Reduction		
[P3A - 3 / CJ050 - HM&E Survivability Modifications]: CJ050 HM&E SURVIVABILITY MODIFICATIONS HM&E Modernization funding is provided to correct mission, safety and reliability issues on HM&E systems (impacting ship survivability) and ultimately resolve maintenance intensive system concerns. HM&E Survivability Modifications include: -Smoke Ejection System (SES) Redesign -Composite Ventilation Louvers and Screens.		
[P3A - 4 / CJ060 - HM&E Mechanical/Auxiliary Modifications]: CJ060, CJ061, CJ062, CJ063 HM&E MECHANICAL/AUXILIARY MODIFICATIONSHME Modernization funding is provided to correct mission, safety and reliability issues on mechanical and auxiliary systems and ultimately resolve maintenance intensive system concerns. HM&E Mechanical/ Auxiliary Modifications include: -MIDE Bulkhead Shaft Seal -Helo Hangar Door Control Modifications -Vacuum Collection, Holding & Transfer (VCHT) Ejector Pump PLC Upgrade -2nd Pass Reverse Osmosis (RO) Unit Upgrade, RO Unit Potable Water Electrolytic Disinfectant Generator (EDG) Recirculation Capability -Aviation Maintenance Bridge Crane Replacement -Knuckleboom Crane Improvements -Geislinger Coupling Improvements -Scullery Improvements -Gaylord System Improvements -Branch Piping Modifications -Titanium valve replacement -Common Fuel Rail		
[P3A - 5 / CJ070 SWAN-CANES Integration]: CJ070 SWAN-CANES Integration The results of the Shipboard Wide Area Network (SWAN) / Consolidated Afloat Networks and Enterprise Services (CANES) study directed the replacement of the C4I capability of the LPD 17 Class SWAN with CANES and the conversion of the non-C4I SWAN into a new HM&E Network (mini SWAN). SWAN funding is required to field the new HM&E Network in support of the CANES installation. In addition, funding is required to sustain the legacy SWAN, while the LPD 17 Class ships await the CANES/HM&E Network back fit installation. SWAN serves as the backbone of the LPD 17 class and funding is necessary to address obsolescence, reliability issues, performance concerns, emergent Fleet requirements including enabling Cryptologic Log On (CLO), eradicating Windows XP, replacing aging obsolete network hardware (e.g., servers and core switches), and maintaining the Information Assurance posture of the Common Operating Environment (COE). This funding is vital to ensure the LPD 17 Class ships can combat the evolving cyber threat.		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy					Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment					P-1 Line Item Number / Title: 0946 / LPD Class 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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	LPD Class Support Equipment				- / 9.900	- / -	- / 26.176	- / 14.565	- / -	- / 14.565
P-3a	1 / CJ030 - HW/SW Obsolescence (TBD)				- / 20.410	- / 4.244	- / 9.308	- / 17.428	- / 0.000	- / 17.428
P-3a	2 / CJ040 HM&E Electrical Modifications (TBD)				- / 0.000	- / 0.000	- / 3.636	- / 8.181	- / 0.000	- / 8.181
P-3a	3 / CJ050 - HM&E Survivability Modifications (TBD)				- / 0.948	- / 0.000	- / 0.000	- / 1.766	- / 0.000	- / 1.766
P-3a	4 / CJ060 - HM&E Mechanical/Auxiliary Modifications (TBD)				- / 52.131	- / 7.392	- / 5.064	- / 9.220	- / 0.000	- / 9.220
P-3a	5 / CJ070 SWAN-CANES Integration (TBD)				- / 28.036	- / 16.536	- / 12.584	- / 8.203	- / 0.000	- / 8.203
P-3a	6 / CJ032 HW/SW Obsolescence Wireless Portable Communications Main Site Upgrades (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	7 / CJ061 Titanium Valve Replacement (TBD)				- / 0.000	- / 3.580	- / 3.892	- / 3.335	- / 0.000	- / 3.335
P-3a	8 / CJ062 HM&E Mechanical/Auxiliary Mods Knuckleboom Crane Improvements (TBD)				- / 0.000	- / 0.300	- / 1.248	- / 2.335	- / 0.000	- / 2.335
P-3a	9 / CJ063 HM&E Mechanical/Auxiliary Mod Common Fuel Rail (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	10 / CJ034 NDDs NAVIGATION NETWORK INSTALLATION (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	11 / CJ035 CYBER REQUIREMENT (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-40	Total Gross/Weapon System Cost				- / 111.425	- / 32.052	- / 61.908	- / 65.033	- / 0.000	- / 65.033

Exhibits Schedule					FY 2020	FY 2021	FY 2022	FY 2023	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	LPD Class Support Equipment				- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / CJ030 - HW/SW Obsolescence (TBD)				- / 11.569	- / 5.121	- / 4.098	- / 8.520	- / 11.029	- / 91.727
P-3a	2 / CJ040 HM&E Electrical Modifications (TBD)				- / 8.415	- / 5.963	- / 4.951	- / 3.681	- / 0.000	- / 34.827
P-3a	3 / CJ050 - HM&E Survivability Modifications (TBD)				- / 4.712	- / 4.056	- / 1.032	- / 1.000	- / 0.000	- / 13.514
P-3a	4 / CJ060 - HM&E Mechanical/Auxiliary Modifications (TBD)				- / 12.480	- / 8.290	- / 3.040	- / 2.531	- / 1.922	- / 102.070
P-3a	5 / CJ070 SWAN-CANES Integration (TBD)				- / 7.943	- / 8.131	- / 7.354	- / 8.455	- / 0.000	- / 97.242
P-3a	6 / CJ032 HW/SW Obsolescence Wireless Portable Communications Main Site Upgrades (TBD)				- / 0.137	- / 2.586	- / 8.641	- / 13.001	- / 16.328	- / 40.693
P-3a	7 / CJ061 Titanium Valve Replacement (TBD)				- / 5.072	- / 12.096	- / 7.662	- / 2.488	- / 1.582	- / 39.707
P-3a	8 / CJ062 HM&E Mechanical/Auxiliary Mods Knuckleboom Crane Improvements (TBD)				- / 3.083	- / 2.528	- / 1.794	- / 1.393	- / 0.000	- / 12.681
P-3a	9 / CJ063 HM&E Mechanical/Auxiliary Mod Common Fuel Rail (TBD)				- / 4.359	- / 11.015	- / 22.150	- / 18.958	- / 19.775	- / 76.257
P-3a	10 / CJ034 NDDs NAVIGATION NETWORK INSTALLATION (TBD)				- / 0.744	- / 0.863	- / 1.552	- / 1.799	- / 0.000	- / 4.958
P-3a	11 / CJ035 CYBER REQUIREMENT (TBD)				- / 0.000	- / 1.632	- / 2.876	- / 3.692	- / 0.000	- / 8.200
P-40	Total Gross/Weapon System Cost				- / 60.330	- / 65.610	- / 65.412	- / 70.713	- / 53.845	- / 586.328

*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 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment		P-1 Line Item Number / Title: 0946 / LPD Class 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		
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 2019 Navy																Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9						P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment						Aggregated Items Title: LPD Class Support Equipment								
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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) CJ010 - Schoolhouse TTE																				
1.1) Schoolhouse TTE		A		-	-	1.200	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) CJ010 - Schoolhouse TTE			-	-	1.200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2) CJ020 - Shore Based Spares																				
2.1) Shore Based Spares		A		-	-	8.700	-	-	-	-	-	5.253	-	-	4.832	-	-	-	-	4.832
Subtotal: 2) CJ020 - Shore Based Spares			-	-	8.700	-	-	-	-	-	5.253	-	-	4.832	-	-	-	-	-	4.832
3) CJ080 Conjunctive HM&E AIT																				
3.1) Conjunctive HM&E Alterations ⁽¹⁾		A		-	-	-	-	-	-	-	20.923	-	-	9.733	-	-	-	-	-	9.733
Subtotal: 3) CJ080 Conjunctive HM&E AIT			-	-	0.000	-	-	-	-	-	20.923	-	-	9.733	-	-	-	-	-	9.733
Total			-	-	9.900	-	-	-	-	-	26.176	-	-	14.565	-	-	-	-	-	14.565

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

Footnotes:

⁽¹⁾ CJ080- CONJUNCTIVE HM&E ALTERATIONS (FY19) Advanced Planning Long Lead Time Material in support of FY20 planned availabilities for LPD 17, LPD 18 and LPD 26.

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment	Modification Number / Title: 1 / CJ030 - HW/SW Obsolescence

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	20.410	4.244	9.308	17.428	0.000	17.428	11.569	5.121	4.098	8.520	11.029	91.727
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	20.410	4.244	9.308	17.428	0.000	17.428	11.569	5.121	4.098	8.520	11.029	91.727
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	20.410	4.244	9.308	17.428	0.000	17.428	11.569	5.121	4.098	8.520	11.029	91.727
<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:

HW/SW Obsolescence (CJ030) includes funding for procurement and installation of equipment to correct critical obsolescence issues on LPD17 Class mission systems. Resolves operational and obsolescence issues. Replaces current split controllers, resolves rack cooling, modifies loud speaker cable plant, and provides commonality and system architecture and hardware. Shipsets of equipment vary in quantities and types of components each fiscal year and within a fiscal year. Each ship requires a different number of alterations to be installed, and these alteration packages vary in scope and cost based on individual ship configurations. A quantity of "1" represents a single "kit" intended for installation in one ship, in a single Chief of Naval Operations (CNO) Availability. Ships may be receiving more than 1 kit in a single availability based upon the fielding plan for the systems being modernized. In FY18, there are a total of (13) kits being procured for installations during (4) FY19 CNO Availabilities on LPD 20 (3 kit), LPD 21 (1 kit), LPD 23 (4 kit), and LPD 24 (5 kit). In FY19, there are (23) total kits being procured for installation during (4) FY20 CNO Availabilities on LPD 17 (5 kit), LPD 18 (4 kit), LPD 25 (9 kit), and LPD 26 (5 kit). In FY20, there are (10) total kits being procured for installation during (3) FY21 CNO Availabilities on LPD 19 (4 kit), LPD 22 (4 kit), and LPD 27 (2 kit). In FY21, there is (7) total kits being procured for installation during (3) FY22 CNO Availability on LPD 21 (3 kit), LPD 23 (3 kit), and LPD 28 (1 kit). In FY22, there are (7) total kits being procured for installation during (5) FY23 CNO Availabilities on LPD 17 (1 kit), LPD 18 (1 kit), LPD 20 (2 kit), LPD 24 (1 kit), and LPD 26 (2 kit). In FY23, there are (3) total kits being procured for installation during (2) FY24 CNO Availabilities on LPD 19 (1 kit), and LPD 25 (2 kit).

DSA costs will also vary by kit due to differences in scope and complexity, and first installation compared to follow-on installations.

[HW/SW Obsolescence] HW/SW Obsolescence effort addresses hardware obsolescence/technology refreshment issues, and class upgrades focused on increased capabilities, force protection, and safety.

Funding will support procurement of hardware and software changes to the systems listed:

- Command Information Display System (CIDS) 23TV - HW refresh and upgrade to Windows 10
- Rudder Angle Indicator
- Ship Control Systems (SCS) - Windows XP upgrade/SCS Tech Refresh, Digital Rudder Angle Display Information System (DRADIS)
- Fire Detection System Upgrade Phase 1
- Wire-free Portable Communication System (WPCS) - Uninterruptible Power Supply (UPS) Upgrade, Low Power Amplifier Upgrade
- 27TV - 27TV Low Channel Pier Cable Blockage improvement
- Advanced Fire and Smoke Sensor System (AFSS) - AFSS System Upgrade
- Integrated Voice Communication System (IVCS)- IVCS system upgrades (local cutout switches, AFT lookout communication mod, obsolete terminal replacement, FWD/AFT KITE), Software version 7.2.2.
- 1MC Announcing System - Digital Microphone Control Station1MC improvements
- Navigational Data Distribution System (NDDS) - Sustainment and obsolescence upgrades, Navigation display upgrades
- Damage Control Action Management Software (DCAMS) - Upgrade to Advanced Damage Control System

[Non-Recurring Engineering] NRE Includes the following efforts:

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment	Modification Number / Title: 1 / CJ030 - HW/SW Obsolescence
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
FY18: Technology refresh for Announcing System 1MC will upgrade system firmware and obsolete components in the AN/SIA-134 Announcing System Racks. Technology refresh in support of NDDS Sustainment and Obsolescence upgrades. FY23: Conduct engineering studies in support of LPD 17 Class Midlife Planning to include Weight, Moment, and Stability, Corrosion, Space and Equipment Configuration, and Internal Communication Upgrades. Non Recurring Engineering and Advanced Planning Long Lead Time Material in support of planned Midlife installations.		

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment						Modification Number / Title: 1 / CJ030 - HW/SW Obsolescence			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: HW/SW Obsolescence				Modification Type: TBD				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> CJ030 - HW/SW Obsolescence													
B Kits													
Recurring													
1.1.1) HW/SW Obsolescence - NonOrganic ⁽²⁾	63 / 13.500	8 / 1.198	13 / 3.738	23 / 5.744	- / -	23 / 5.744	10 / 2.547	7 / 1.658	7 / 1.975	3 / 0.559	4 / 2.116	138 / 33.035	
<i>Subtotal: Recurring</i>	- / 13.500	- / 1.198	- / 3.738	- / 5.744	- / -	- / 5.744	- / 2.547	- / 1.658	- / 1.975	- / 0.559	- / 2.116	- / 33.035	
<i>Subtotal: CJ030 - HW/SW Obsolescence</i>	63 / 13.500	8 / 1.198	13 / 3.738	23 / 5.744	- / -	23 / 5.744	10 / 2.547	7 / 1.658	7 / 1.975	3 / 0.559	4 / 2.116	138 / 33.035	
<i>Subtotal: Procurement, All Modification Items</i>	- / 13.500	- / 1.198	- / 3.738	- / 5.744	- / -	- / 5.744	- / 2.547	- / 1.658	- / 1.975	- / 0.559	- / 2.116	- / 33.035	
Support (All Modification Items)													
2.1) Non-Recurring Engineering	- / -	- / -	- / 0.330	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.000	- / -	- / 1.330	
<i>Subtotal: Support</i>	- / 0.000	- / -	- / 0.330	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.000	- / 0.000	- / 1.330	
Installation													
<i>Modification Item 1 of 1:</i> CJ030 - HW/SW Obsolescence	- / 6.910	- / 3.046	- / 5.240	- / 11.684	- / 0.000	- / 11.684	- / 9.022	- / 3.463	- / 2.123	- / 6.961	- / 8.913	- / 57.362	
<i>Subtotal: Installation</i>	- / 6.910	- / 3.046	- / 5.240	- / 11.684	- / -	- / 11.684	- / 9.022	- / 3.463	- / 2.123	- / 6.961	- / 8.913	- / 57.362	
Total													
Total Cost (Procurement + Support + Installation)	20.410	4.244	9.308	17.428	0.000	17.428	11.569	5.121	4.098	8.520	11.029	91.727	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment										Modification Number / Title: 1 / CJ030 - HW/SW Obsolescence											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: CJ030 - HW/SW Obsolescence																															
Manufacturer Information																															
Manufacturer Name: Various														Manufacturer Location: Various																	
Administrative Leadtime (in Months): 3														Production Leadtime (in Months): 8																	
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates		Jun 2017				Jul 2018				Apr 2019				Jan 2020				Jun 2021				Jan 2022				Apr 2023					
Delivery Dates		Feb 2018				Mar 2019				Dec 2019				Sep 2020				Feb 2022				Sep 2022				Dec 2023					
Installation Information																															
Method of Implementation: AIT:: Installation Name: HW/SW Obsolescence																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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		54 / 6.910		9 / 2.923		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		63 / 9.833							
FY 2017		- / -		0 / 0.123		8 / 3.993		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		8 / 4.116							
FY 2018		- / -		- / -		0 / 1.247		13 / 10.623		0 / 0.000		13 / 10.623		- / -		- / -		- / -		- / -		0 / 0.000		13 / 11.870							
FY 2019		- / -		- / -		- / -		0 / 1.061		0 / 0.000		0 / 1.061		23 / 8.800		- / -		- / -		- / -		0 / 0.000		23 / 9.861							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.222		10 / 3.233		- / -		- / -		0 / 0.000		10 / 3.455							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.230		7 / 1.952		- / -		0 / 0.000		7 / 2.182							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.171		7 / 6.858		0 / 2.104		7 / 9.133							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.103		3 / 3.371		3 / 3.474							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		4 / 3.438		4 / 3.438							
Total		54 / 6.910		9 / 3.046		8 / 5.240		13 / 11.684		0 / 0.000		13 / 11.684		23 / 9.022		10 / 3.463		7 / 2.123		7 / 6.961		7 / 8.913		138 / 57.362							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	54	2	6	1	-	-	2	6	-	-	-	8	5	9	9	5	-	-	-	4	6	1	3	3	-	-	-	-	7		
Out	46	3	5	-	-	3	6	-	-	6	-	2	-	3	1	4	5	9	-	5	9	4	-	6	-	1	3	3	-		

Footnotes:

⁽²⁾ HW/SW Obsolescence (CJ030) includes funding for procurement and installation of equipment to correct critical obsolescence issues on LPD17 Class mission systems. Shipsets of equipment vary in quantities and types of components each fiscal year and within a fiscal year. Each ship requires a different number of alterations to be installed, and these alteration packages vary in scope and cost based on individual ship configurations. A quantity of "1" represents a single "kit" intended for installation in one ship, in a single Chief of Naval Operations (CNO) Availability. Ships may be receiving more than 1 kit in a single availability based upon the fielding plan for the systems being modernized. In FY18, there are a total of (13) kits being procured for installations during (4) FY19 CNO Availabilities on LPD 20 (3 kit), LPD 21

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment	Modification Number / Title: 1 / CJ030 - HW/SW Obsolescence
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
(1 kit), LPD 23 (4 kit), and LPD 24 (5 kit). In FY19, there are (23) total kits being procured for installation during (4) FY20 CNO Availabilities on LPD 17 (5 kit), LPD 18 (4 kit), LPD 25 (9 kit), and LPD 26 (5 kit). In FY20, there are (10) total kits being procured for installation during (3) FY21 CNO Availabilities on LPD 19 (4 kit), LPD 22 (4 kit), and LPD 27 (2 kit). In FY21, there is (7) total kits being procured for installation during (3) FY22 CNO Availability on LPD 21 (3 kit), LPD 23 (3 kit), and LPD 28 (1 kit). In FY22, there are (7) total kits being procured for installation during (5) FY23 CNO Availabilities on LPD 17 (1 kit), LPD 18 (1 kit), LPD 20 (2 kit), LPD 24 (1 kit), and LPD 26 (2 kit). In FY23, there are (3) total kits being procured for installation during (2) FY24 CNO Availabilities on LPD 19 (1 kit), and LPD 25 (2 kit). DSA costs will also vary by kit due to differences in scope and complexity, and first installation compared to follow-on installations.		

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Exhibit P-3a, Individual Modification: PB 2019 Navy						Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment				Modification Number / Title: 2 / CJ040 HM&E Electrical Modifications			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	0.000	3.636	8.181	0.000	8.181	8.415	5.963	4.951	3.681	0.000	34.827
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	0.000	3.636	8.181	0.000	8.181	8.415	5.963	4.951	3.681	0.000	34.827
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	0.000	3.636	8.181	0.000	8.181	8.415	5.963	4.951	3.681	0.000	34.827
(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:

[HM&E Electrical Upgrades] HM&E Modernization funding is provided to correct mission, safety and reliability issues on electrical systems and ultimately resolve maintenance intensive system concerns. HM&E Electrical Modifications include:

SWAN UPS - Space Based Uninterruptable Power Supply (UPS) Reduction

The installation fielding plan for this cost code has been adjusted to align with Consolidated Afloat Networks and Enterprise Services (CANES) installations aboard LPD 17 Class ships. This alignment has been completed to reduce the operational burden on ship's force, and reduce re-work during CANES installations.

[Non-Recurring Engineering] NRE Includes the following efforts:

FY23: Conduct engineering studies in support of LPD 17 Class Midlife Planning to include support of USMC equities in upgraded Lithium Ion battery stowage and upgraded power and energy storage requirements for combat systems.

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment						Modification Number / Title: 2 / CJ040 HM&E Electrical Modifications			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: HM&E Electrical Modifications				Modification Type: TBD				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> CJ040 HM&E Electrical Modifications													
B Kits													
Recurring													
1.1.1) HM&E Electrical Upgrades - NonOrganic ⁽³⁾	- / -	- / -	2 / 2.504	3 / 3.834	- / -	3 / 3.834	3 / 3.915	1 / 1.332	2 / 2.455	- / -	- / -	11 / 14.040	
<i>Subtotal: Recurring</i>	- / 0.000	- / -	- / 2.504	- / 3.834	- / -	- / 3.834	- / 3.915	- / 1.332	- / 2.455	- / -	- / 0.000	- / 14.040	
<i>Subtotal: CJ040 HM&E Electrical Modifications</i>	- / -	- / -	2 / 2.504	3 / 3.834	- / -	3 / 3.834	3 / 3.915	1 / 1.332	2 / 2.455	- / -	- / -	11 / 14.040	
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.000	- / -	- / 2.504	- / 3.834	- / -	- / 3.834	- / 3.915	- / 1.332	- / 2.455	- / -	- / 0.000	- / 14.040	
Installation													
<i>Modification Item 1 of 1:</i> CJ040 HM&E Electrical Modifications	- / 0.000	- / 0.000	- / 1.132	- / 4.347	- / 0.000	- / 4.347	- / 4.500	- / 4.631	- / 2.496	- / 2.681	- / 0.000	- / 19.787	
<i>Subtotal: Installation</i>	- / 0.000	- / -	- / 1.132	- / 4.347	- / -	- / 4.347	- / 4.500	- / 4.631	- / 2.496	- / 2.681	- / 0.000	- / 19.787	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	3.636	8.181	0.000	8.181	8.415	5.963	4.951	3.681	0.000	34.827	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																																			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment										Modification Number / Title: 2 / CJ040 HM&E Electrical Modifications																									
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																														
Modification Item 1 of 1: CJ040 HM&E Electrical Modifications																																													
Manufacturer Information																																													
Manufacturer Name: Various															Manufacturer Location: Various																														
Administrative Leadtime (in Months): 3															Production Leadtime (in Months): 8																														
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023																			
Contract Dates						Jul 2018				Apr 2019				Jan 2020				Jun 2021				Jan 2022																							
Delivery Dates						Mar 2019				Dec 2019				Sep 2020				Feb 2022				Sep 2022																							
Installation Information																																													
Method of Implementation: AIT:: Installation Name: HM&E Electrical Upgrades																																													
Installation Cost		Prior Years	FY 2017				FY 2018				FY 2019 Base				FY 2019 OCO				FY 2019 Total				FY 2020				FY 2021				FY 2022				FY 2023				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		- / -		- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -		- / -							
FY 2017		- / -		- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -		- / -							
FY 2018		- / -		- / -				0 / 1.132				2 / 2.614				0 / 0.000				2 / 2.614				- / -				- / -				- / -				0 / 0.000		2 / 3.746							
FY 2019		- / -		- / -				- / -				0 / 1.733				0 / 0.000				0 / 1.733				3 / 3.949				- / -				- / -				0 / 0.000		3 / 5.682							
FY 2020		- / -		- / -				- / -				- / -				- / -				- / -				0 / 0.551				3 / 4.029				- / -				- / -				0 / 0.000		3 / 4.580			
FY 2021		- / -		- / -				- / -				- / -				- / -				- / -				- / -				0 / 0.602				1 / 1.266				- / -				0 / 0.000		1 / 1.868			
FY 2022		- / -		- / -				- / -				- / -				- / -				- / -				- / -				- / -				0 / 1.230				2 / 2.681				0 / 0.000				2 / 3.911	
FY 2023		- / -		- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -		- / -			
To Complete		- / -		- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -				- / -		- / -			
Total		- / -		- / -				0 / 1.132				2 / 4.347				0 / 0.000				2 / 4.347				3 / 4.500				3 / 4.631				1 / 2.496				2 / 2.681				0 / 0.000				11 / 19.787	
Installation Schedule																																													
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	2	-	1	-	-	1	-	-	1	-	-	1	-	-	11										
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	-	-	1	-	2	-	-	1	-	1	-	-	1	-	-	11										
Footnotes: ⁽³⁾ HM&E Electrical Modification (CJ040) includes funding for procurement and installation of equipment to upgrade shipboard electrical systems to a more sustainable, reliable configuration on LPD17 Class ships. Shipsets of equipment vary in quantities and types of components each fiscal year and within a fiscal year. A quantity of "1" represents a single "kit" intended for installation in one ship, in a single CNO Availability. Ships may be receiving more than 1 kit in a single availability based upon the fielding plan for the systems being modernized. In FY18, there are (2) total kits being procured for installation during (2) FY19 CNO Availabilities on LPD 23 (1 kit), LPD 24 (1 kit). In FY19, there are (3) total kits being procured for installation during (3) FY20 CNO Availabilities on LPD 17 (1 kit), LPD 18 (1 kit), and LPD 25 (1 kit).																																													

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment	Modification Number / Title: 2 / CJ040 HM&E Electrical Modifications
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
In FY20, there are (3) total kits being procured for installation (3) FY21 CNO Availability on LPD 19 (1 kit), LPD 22 (1 kit), and LPD 27 (1 kit). In FY21, there is (1) total kit being procured for installation during (1) FY22 CNO Availability on LPD 21 (1 kit). In FY22, there are (2) total kits being procured for installation during (2) FY23 CNO Availability on LPD 20 (1 kit) and LPD 26 (1 kit). Funding supports safety and capability improvements in the design of the Space Based UPS. This results in a more robust system configuration, requiring additional cable runs, load center tie-in, battery placements, and industrial work efforts. DSA costs will also vary by kit due to differences in scope and complexity, and first installation compared to follow-on installations.		

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment						Modification Number / Title: 3 / CJ050 - HM&E Survivability Modifications		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.948	0.000	0.000	1.766	0.000	1.766	4.712	4.056	1.032	1.000	0.000	13.514
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.948	0.000	0.000	1.766	0.000	1.766	4.712	4.056	1.032	1.000	0.000	13.514
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.948	0.000	0.000	1.766	0.000	1.766	4.712	4.056	1.032	1.000	0.000	13.514
<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: [HM&E Survivability Modifications] HM&E Modernization funding is provided to correct mission, safety and reliability issues on HM&E systems (impacting ship survivability) and ultimately resolve maintenance intensive system concerns. HM&E Survivability Modifications include: -Smoke Ejection System (SES) Redesign -Composite Ventilation Louvers and Screens. [Non-Recurring Engineering] NRE includes the following efforts: FY23: Conduct Non-recurring engineering in support of the Magazine Sprinkling System detection redesign, and Engineering Plant Control System (EPCS).												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment					Modification Number / Title: 3 / CJ050 - HM&E Survivability Modifications			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: HM&E Survivability Modifications				Modification Type: TBD				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: CJ050 - HM&E Survivability Modifications</i>													
<i>B Kits</i>													
<i>Recurring</i>													
1.1.1) HM&E Survivability Modifications - NonOrganic ⁽⁴⁾	3 / 0.824	- / -	- / -	5 / 1.436	- / -	5 / 1.436	7 / 2.080	3 / 0.871	- / -	- / -	- / -	18 / 5.211	
<i>Subtotal: Recurring</i>	<i>- / 0.824</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 1.436</i>	<i>- / -</i>	<i>- / 1.436</i>	<i>- / 2.080</i>	<i>- / 0.871</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 0.000</i>	<i>- / 5.211</i>	
<i>Subtotal: CJ050 - HM&E Survivability Modifications</i>	<i>3 / 0.824</i>	<i>- / -</i>	<i>- / -</i>	<i>5 / 1.436</i>	<i>- / -</i>	<i>5 / 1.436</i>	<i>7 / 2.080</i>	<i>3 / 0.871</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>18 / 5.211</i>	
<i>Subtotal: Procurement, All Modification Items</i>	<i>- / 0.824</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 1.436</i>	<i>- / -</i>	<i>- / 1.436</i>	<i>- / 2.080</i>	<i>- / 0.871</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 0.000</i>	<i>- / 5.211</i>	
Installation													
<i>Modification Item 1 of 1: CJ050 - HM&E Survivability Modifications</i>	<i>- / 0.124</i>	<i>- / 0.000</i>	<i>- / 0.000</i>	<i>- / 0.330</i>	<i>- / 0.000</i>	<i>- / 0.330</i>	<i>- / 2.632</i>	<i>- / 3.185</i>	<i>- / 1.032</i>	<i>- / 0.000</i>	<i>- / 0.000</i>	<i>- / 7.303</i>	
<i>Subtotal: Installation</i>	<i>- / 0.124</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 0.330</i>	<i>- / -</i>	<i>- / 0.330</i>	<i>- / 2.632</i>	<i>- / 3.185</i>	<i>- / 1.032</i>	<i>- / -</i>	<i>- / 0.000</i>	<i>- / 7.303</i>	
Total													
Total Cost (Procurement + Support + Installation)	0.948	0.000	0.000	1.766	0.000	1.766	4.712	4.056	1.032	1.000	0.000	13.514	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment										Modification Number / Title: 3 / CJ050 - HM&E Survivability Modifications											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: CJ050 - HM&E Survivability Modifications																															
Manufacturer Information																															
Manufacturer Name: VARIOUS															Manufacturer Location: TBD																
Administrative Leadtime (in Months): 4															Production Leadtime (in Months): 8																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates										Apr 2019				Jan 2020				Jul 2021				Jan 2022									
Delivery Dates										Dec 2019				Sep 2020				Mar 2022				Sep 2022									
Installation Information																															
Method of Implementation: AIT:: Installation Name: HM&E Survivability Modifications																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		3 / 0.124		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		3 / 0.124							
FY 2017		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2019		- / -		- / -		- / -		0 / 0.330		0 / 0.000		0 / 0.330		5 / 2.156		- / -		- / -		- / -		0 / 0.000		5 / 2.486							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.476		7 / 2.983		- / -		- / -		0 / 0.000		7 / 3.459							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.202		3 / 1.032		- / -		0 / 0.000		3 / 1.234							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		3 / 0.124		- / -		- / -		0 / 0.330		0 / 0.000		0 / 0.330		5 / 2.632		7 / 3.185		3 / 1.032		- / -		0 / 0.000		18 / 7.303							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	3	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	1	2	-	2	3	-	2	1	-	-	-	-	-	-	18
Out	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	2	1	2	-	3	2	-	2	-	1	-	18
Footnotes:																															
(4) HM&E Survivability Modifications (CJ050) includes funding for procurement and installation of equipment to support upgrades of shipboard survivability systems to a more sustainable, reliable configuration on LPD17 Class ships. Shipsets of equipment vary in quantities and types of components each fiscal year and within a fiscal year. Each ship requires a different number of alterations to be installed, and these alteration packages vary in scope and cost based on individual ship configurations. A quantity of "1" represents a single "kit" intended for installation in one ship, in a single CNO Availability. Ships may be																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment	Modification Number / Title: 3 / CJ050 - HM&E Survivability Modifications
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
receiving more than 1 kit in a single availability based upon the fielding plan for the systems being modernized. In FY19, there are (5) total kits being procured for installation during (3) FY20 CNO Availabilities on LPD 17 (2 kits), LPD 18 (2 kits), and LPD 25 (1 kit). In FY20, there are (7) total kits being procured for installation during (4) FY21 CNO Availabilities on LPD 19 (2 kits), LPD 20 (2 kits), LPD 22 (2 kits), and LPD 27 (1 kit). In FY21, there are (3) total kits being procured for installation during (2) FY22 CNO Availabilities on LPD 21 (2 kit) and LPD 23 (1 kit). In FY22, there are (2) total kits being procured for installation during (2) FY23 CNO Availabilities on LPD 24 (1 kit) and LPD 26 (1 kit). DSA costs will also vary by kit due to differences in scope and complexity, and first installation compared to follow-on installations.		

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Exhibit P-3a, Individual Modification: PB 2019 Navy								Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment					Modification Number / Title: 4 / CJ060 - HM&E Mechanical/Auxiliary Modifications			
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	52.131	7.392	5.064	9.220	0.000	9.220	12.480	8.290	3.040	2.531	1.922	102.070
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	52.131	7.392	5.064	9.220	0.000	9.220	12.480	8.290	3.040	2.531	1.922	102.070
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	52.131	7.392	5.064	9.220	0.000	9.220	12.480	8.290	3.040	2.531	1.922	102.070
(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: HM&E Mechanical/Auxiliary Modifications(CJ060) includes funding for procurement and installation of equipment to support upgrades of shipboard mechanical/auxiliary systems to a more sustainable, reliable configuration on LPD17 Class ships. Shipsets of equipment vary in quantities and types of components each fiscal year and within a fiscal year. Each ship requires a different number of alterations to be installed, and these alteration packages vary in scope and cost based on individual ship configurations. A quantity of "1" represents a single "kit" intended for installation in one ship, in a single CNO Availability. Ships may be receiving more than 1 kit in a single availability based upon the fielding plan for the systems being modernized. HM&E Mechanical/Auxiliary Modifications include: -MIDE Bulkhead Shaft Seal -Helo Hangar Door Control Modifications -Vacuum Collection, Holding & Transfer (VCHT) Ejector Pump PLC Upgrade -2nd Pass Reverse Osmosis (RO) Unit Upgrade, RO Unit Potable Water Electrolytic Disinfectant Generator (EDG) Recirculation Capability -Aviation Maintenance Bridge Crane Replacement -Geislinger Coupling Improvements -Scullery Improvements -Gaylord System Improvements -Branch Piping Modifications [Non-Recurring Engineering] NRE includes the following efforts: FY18: Conduct Non-recurring engineering in support of Scullery redesign. FY23: Conduct engineering studies in support of LPD 17 Class Midlife Planning to include Crane improvement/replacement, corrosion, weight and moment, USMC priorities, and reefer system upgrades.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment					Modification Number / Title: 4 / CJ060 - HM&E Mechanical/Auxiliary Modifications			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: HM&E Mechanical/ Auxiliary Modifications				Modification Type: TBD				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: CJ060 - HM&E Mechanical/ Auxiliary Modifications													
B Kits													
Recurring													
1.1.1) CJ060 HM&E Mechanical/Auxiliary Modifications - NonOrganic ⁽⁵⁾	35 / 36.914	6 / 2.512	7 / 1.010	14 / 3.290	- / -	14 / 3.290	14 / 3.039	4 / 0.899	3 / 0.580	1 / 0.170	- / -	84 / 48.414	
<i>Subtotal: Recurring</i>	- / 36.914	- / 2.512	- / 1.010	- / 3.290	- / -	- / 3.290	- / 3.039	- / 0.899	- / 0.580	- / 0.170	- / 0.000	- / 48.414	
<i>Subtotal: CJ060 - HM&E Mechanical/Auxiliary Modifications</i>	35 / 36.914	6 / 2.512	7 / 1.010	14 / 3.290	- / -	14 / 3.290	14 / 3.039	4 / 0.899	3 / 0.580	1 / 0.170	- / -	84 / 48.414	
<i>Subtotal: Procurement, All Modification Items</i>	- / 36.914	- / 2.512	- / 1.010	- / 3.290	- / -	- / 3.290	- / 3.039	- / 0.899	- / 0.580	- / 0.170	- / 0.000	- / 48.414	
Support (All Modification Items)													
2.1) Non-Recurring Engineering	- / 2.361	- / 0.252	- / 0.054	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.000	- / -	- / 3.667	
<i>Subtotal: Support</i>	- / 2.361	- / 0.252	- / 0.054	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.000	- / 0.000	- / 3.667	
Installation													
Modification Item 1 of 1: CJ060 - HM&E Mechanical/ Auxiliary Modifications	- / 12.856	- / 4.628	- / 4.000	- / 5.930	- / 0.000	- / 5.930	- / 9.441	- / 7.391	- / 2.460	- / 1.361	- / 1.922	- / 49.989	
<i>Subtotal: Installation</i>	- / 12.856	- / 4.628	- / 4.000	- / 5.930	- / -	- / 5.930	- / 9.441	- / 7.391	- / 2.460	- / 1.361	- / 1.922	- / 49.989	
Total													
Total Cost (Procurement + Support + Installation)	52.131	7.392	5.064	9.220	0.000	9.220	12.480	8.290	3.040	2.531	1.922	102.070	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment										Modification Number / Title: 4 / CJ060 - HM&E Mechanical/Auxiliary Modifications											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: CJ060 - HM&E Mechanical/Auxiliary Modifications																															
Manufacturer Information																															
Manufacturer Name: Various															Manufacturer Location: Various																
Administrative Leadtime <i>(in Months)</i> : 3															Production Leadtime <i>(in Months)</i> : 9																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates		Jun 2017				Jul 2018				Apr 2019				Jan 2020				Jun 2021				Jan 2022				Apr 2023					
Delivery Dates		Feb 2018				Mar 2019				Dec 2019				Sep 2020				Feb 2022				Sep 2022				Dec 2023					
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: CJ060 HM&E Mechanical/Auxiliary Modifications																															
Installation Cost		Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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		22 / 12.856		11 / 4.304		- / -		2 / 1.940		0 / 0.000		2 / 1.940		- / -		- / -		- / -		- / -		0 / 0.000		35 / 19.100							
FY 2017		- / -		0 / 0.324		6 / 3.599		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		6 / 3.923							
FY 2018		- / -		- / -		0 / 0.401		7 / 2.145		0 / 0.000		7 / 2.145		- / -		- / -		- / -		- / -		0 / 0.000		7 / 2.546							
FY 2019		- / -		- / -		- / -		0 / 1.845		0 / 0.000		0 / 1.845		14 / 7.250		- / -		- / -		- / -		0 / 0.000		14 / 9.095							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		0 / 2.191		14 / 6.806		- / -		- / -		0 / 0.000		14 / 8.997							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.585		4 / 2.010		- / -		0 / 0.000		4 / 2.595							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.450		3 / 1.336		0 / 1.654		3 / 3.440							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.025		1 / 0.268		1 / 0.293							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		22 / 12.856		11 / 4.628		6 / 4.000		9 / 5.930		0 / 0.000		9 / 5.930		14 / 9.441		14 / 7.391		4 / 2.460		3 / 1.361		1 / 1.922		84 / 49.989							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	22	6	4	1	-	-	3	3	-	-	-	5	4	-	6	5	3	4	-	5	5	-	3	1	-	2	-	-	1	1	84
Out	16	6	-	-	-	9	2	-	-	3	-	3	-	4	1	2	3	8	-	5	3	-	-	7	4	-	3	-	2	3	84
Footnotes: ⁽⁵⁾ HM&E Mechanical/Auxiliary Modifications (CJ060) includes funding for procurement and installation of equipment to support upgrades of shipboard mechanical/auxiliary systems to a more sustainable, reliable configuration on LPD17 Class ships. Shipsets of equipment vary in quantities and types of components each fiscal year and within a fiscal year. Each ship requires a different number of alterations to be installed, and these alteration packages vary in scope and cost based on individual ship configurations. A quantity of "1" represents a single "kit" intended for installation in one ship, in a single CNO Availability. Ships may																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment	Modification Number / Title: 4 / CJ060 - HM&E Mechanical/Auxiliary Modifications
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
be receiving more than 1 kit in a single availability being modernized. In FY18, there are (7) total kits being procured for installation during (4) FY19 CNO Availabilities on LPD 20 (2 kits), LPD 21 (1 kit), LPD 23 (2 kits), and LPD 24 (2 kits). In FY19, there are (14) total kits being procured for installation during (4) FY20 CNO Availabilities on LPD 17 (5 kits), LPD 18 (5 kits), LPD 25 (3 kits), and LPD 26 (1 kit). In FY20, there are (14) total kits being procured for installation during (4) FY21 CNO Availabilities on LPD 19 (5 kits), LPD 20 (3 kits), LPD 22 (4 kits), and LPD 27 (2 kits). In FY21, there are (4) total kits being procured for installation during (2) FY22 CNO Availabilities on LPD 21 (3 kits) and LPD 23 (1 kit). In FY22, there are (3) total kits being procured for installation during (3) FY23 CNO Availabilities on LPD 20 (1 kit), LPD 24 (1 kit), and LPD 26 (1 kits). In FY23, there is a total of (1) kit being procured for (1) CNO Availability on LPD 25 (1 kit). DSA costs will also vary by kit due to differences in scope and complexity, and first installation compared to follow-on installations. Unit cost increase from FY18 to FY19 is due to the following: A total of (7) kits will be procured in FY18: (1) kit of Branch Piping Mods, (3) kits Helicopter Hanger Door Control Mods, and (3) kits Aviation Maintenance Bridge Crane Replacements. A total of (14) kits will be procured in FY19: (1) kit Reverse Osmosis Unit Piping Upgrade, (4) kits Branch Piping Mods, (2) kits Bulkhead Shaft Seals, (1) kit Helicopter Hanger Door Control Mod, (3) kits Aviation Maintenance Bridge Crane Replacements, and (3) kits Scullery Redesigns. The (2) kits for the Bulkhead Shaft Seals account for the unit cost increase from FY18 to FY19. Two (2) FY16 procurements originally scheduled to be installed in FY17 on LPD 20 were deferred to FY19 due to a delay in delivery of material.		

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Exhibit P-3a, Individual Modification: PB 2019 Navy						Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment				Modification Number / Title: 5 / CJ070 SWAN-CANES Integration			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	28.036	16.536	12.584	8.203	0.000	8.203	7.943	8.131	7.354	8.455	0.000	97.242
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	28.036	16.536	12.584	8.203	0.000	8.203	7.943	8.131	7.354	8.455	0.000	97.242
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	28.036	16.536	12.584	8.203	0.000	8.203	7.943	8.131	7.354	8.455	0.000	97.242
(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:

[SWAN-CANES Integration] The results of the Shipboard Wide Area Network (SWAN) / Consolidated Afloat Networks and Enterprise Services (CANES) study directed the replacement of the C4I capability of the LPD 17 Class SWAN with CANES and the conversion of the non-C4I SWAN into a new HM&E Network (mini SWAN). SWAN funding is required to field the new HM&E Network in support of the CANES installation. In addition, funding is required to sustain the legacy SWAN, while the LPD 17 Class ships await the CANES/HM&E Network back fit installation. SWAN serves as the backbone of the LPD 17 class and funding is necessary to address obsolescence, reliability issues, performance concerns, emergent Fleet requirements including enabling Cryptologic Log On (CLO), eradicating Windows XP, replacing aging obsolete network hardware (e.g., servers and core switches), and maintaining the Information Assurance posture of the Common Operating Environment (COE). This funding is vital to ensure the LPD 17 Class ships can combat the evolving cyber threat.

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment						Modification Number / Title: 5 / CJ070 SWAN-CANES Integration			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: LPD 17 Class SWAN-CANES Integration				Modification Type: TBD				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> CJ070 SWAN-CANES Integration													
B Kits													
Recurring													
1.1.1) SWAN-CANES Integration - NonOrganic ⁽⁶⁾	59 / 11.065	29 / 10.182	4 / 7.859	7 / 2.887	- / -	7 / 2.887	8 / 6.448	2 / 1.843	4 / 5.665	4 / 6.732	- / -	117 / 52.681	
<i>Subtotal: Recurring</i>	- / 11.065	- / 10.182	- / 7.859	- / 2.887	- / -	- / 2.887	- / 6.448	- / 1.843	- / 5.665	- / 6.732	- / 0.000	- / 52.681	
Non-Recurring													
1.2.1) SWAN-CANES Integration - Organic ⁽⁷⁾	- / 5.635	- / 1.250	- / 1.203	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 8.088	
<i>Subtotal: Non-Recurring</i>	- / 5.635	- / 1.250	- / 1.203	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 8.088	
<i>Subtotal: CJ070 SWAN-CANES Integration</i>	59 / 16.700	29 / 11.432	4 / 9.062	7 / 2.887	- / -	7 / 2.887	8 / 6.448	2 / 1.843	4 / 5.665	4 / 6.732	- / -	117 / 60.769	
<i>Subtotal: Procurement, All Modification Items</i>	- / 16.700	- / 11.432	- / 9.062	- / 2.887	- / -	- / 2.887	- / 6.448	- / 1.843	- / 5.665	- / 6.732	- / 0.000	- / 60.769	
Installation													
<i>Modification Item 1 of 1:</i> CJ070 SWAN-CANES Integration													
	- / 11.336	- / 5.104	- / 3.522	- / 5.316	- / 0.000	- / 5.316	- / 1.495	- / 6.288	- / 1.689	- / 1.723	- / 0.000	- / 36.473	
<i>Subtotal: Installation</i>	- / 11.336	- / 5.104	- / 3.522	- / 5.316	- / -	- / 5.316	- / 1.495	- / 6.288	- / 1.689	- / 1.723	- / 0.000	- / 36.473	
Total													
Total Cost (Procurement + Support + Installation)	28.036	16.536	12.584	8.203	0.000	8.203	7.943	8.131	7.354	8.455	0.000	97.242	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment										Modification Number / Title: 5 / CJ070 SWAN-CANES Integration											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: CJ070 SWAN-CANES Integration																															
Manufacturer Information																															
Manufacturer Name: Raytheon															Manufacturer Location: San Diego, CA																
Administrative Leadtime (in Months): 2															Production Leadtime (in Months): 7																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates		Dec 2016				Dec 2017				Dec 2018																					
Delivery Dates		Jul 2017				Jul 2018				Jul 2019																					
Installation Information																															
Method of Implementation: AIT:: Installation Name: SWAN-CANES Integration																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		43 / 11.336		16 / 5.104		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		59 / 16.440							
FY 2017		- / -		- / -		29 / 3.522		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		29 / 3.522							
FY 2018		- / -		- / -		- / -		4 / 5.316		0 / 0.000		4 / 5.316		- / -		- / -		- / -		- / -		0 / 0.000		4 / 5.316							
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		7 / 1.495		- / -		- / -		- / -		0 / 0.000		7 / 1.495							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		8 / 6.288		- / -		- / -		0 / 0.000		8 / 6.288							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		2 / 1.689		- / -		0 / 0.000		2 / 1.689							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		4 / 1.723		0 / 0.000		4 / 1.723							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		4 / 0.000		4 / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		43 / 11.336		16 / 5.104		29 / 3.522		4 / 5.316		0 / 0.000		4 / 5.316		7 / 1.495		8 / 6.288		2 / 1.689		4 / 1.723		4 / 0.000		117 / 36.473							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	43	2	2	-	12	9	-	12	8	-	-	2	2	-	4	3	-	1	-	2	5	-	2	-	-	2	-	-	2	4	117
Out	30	7	6	-	-	5	2	9	13	9	-	-	7	-	-	2	2	3	-	3	1	-	-	4	-	3	4	-	2	5	117
Footnotes: ⁽⁶⁾ This mod has sharp fluctuations in procurement and installation unit cost due to the variations in equipment quantities and types of components that make up a shipset. Each ship requires a different number of alterations to be installed, and these alteration packages vary in scope and cost based on individual ship configurations. Due to Type Commander (TYCOM) Integrated Class Maintenance Plan(ICMP) scheduling adjustments, CNO availabilities for LPD 17 Class have increased from once every 2 years to once every 3 years. This has caused CANES and HM&E Network schedules to slip and SWAN sustainment modification quantities to increase.																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment	Modification Number / Title: 5 / CJ070 SWAN-CANES Integration
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
(7) FY18 Availabilities: LPD 19 - SWAN Server; SWAN COMPOSE 4.0.1; Network Storage Device; SIPRNET CLO COMPOSE 4.0; NIPRNET CLO COMPOSE 4.0; SWAN Workstation PC; SWAN Virtualization Mgt LAN; Windows 10 SHB; Enclave Boundary Defense Capability. LPD 22 - SWAN Mesh CORE Switch; SWAN Server; SWAN COMPOSE 4.0.1; Network Router; Network Storage Device; SIPRNET CLO COMPOSE 4.0; NIPRNET CLO COMPOSE 4.0; SWAN Workstation PC; SWAN Virtualization Mgt LAN; Windows 10 SHB; Enclave Boundary Defense Capability. LPD 21 - SWAN COMPOSE 4.0.1; SIPRNET CLO COMPOSE 4.0; NIPRNET CLO COMPOSE 4.0; SWAN Workstation PC; SWAN Virtualization Mgt LAN; Windows 10 SHB; Enclave Boundary Defense Capability. LPD 27 - Windows 10 SHB Requirement. FY19 Availabilities: LPD 23 - SWAN Removal Ring; HM&E Conversion Ring. LPD 24 - SWAN Removal Ring; HM&E Conversion Ring.		

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Exhibit P-3a, Individual Modification: PB 2019 Navy						Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment				Modification Number / Title: 6 / CJ032 HW/SW Obsolescence Wireless Portable Communications Main Site Upgrades			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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	0.137	2.586	8.641	13.001	16.328	40.693
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	0.137	2.586	8.641	13.001	16.328	40.693
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	0.137	2.586	8.641	13.001	16.328	40.693
(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:

[WPCS Main Site Upgrades] WIRELESS PORTABLE COMMUNICATIONS SYSTEM (WPCS) Hardware/Software (CJ030): HW/SW Obsolescence effort addresses critical hardware obsolescence and technology refreshment issues and supporting class upgrades focused on increased capability and reliability. Funding will support procurement of hardware and software changes to the WPCS Main Site.

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Exhibit P-3a, Individual Modification: PB 2019 Navy									Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment					Modification Number / Title: 6 / CJ032 HW/SW Obsolescence Wireless Portable Communications Main Site Upgrades				
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: CJ032 HW/SW Obsolescence Wireless Portable Communications Main Site Upgrades													
B Kits													
Recurring													
1.1.1) WPCS Main Site Upgrades - NonOrganic ⁽⁸⁾	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 2.477	3 / 7.586	4 / 10.328	3 / 7.956	11 / 28.347	
Subtotal: Recurring	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / 2.477	- / 7.586	- / 10.328	- / 7.956	- / 28.347	
Subtotal: CJ032 HW/SW Obsolescence Wireless Portable Communications Main Site Upgrades	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 2.477	3 / 7.586	4 / 10.328	3 / 7.956	11 / 28.347	
Subtotal: Procurement, All Modification Items	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / 2.477	- / 7.586	- / 10.328	- / 7.956	- / 28.347	
Installation													
Modification Item 1 of 1: CJ032 HW/SW Obsolescence Wireless Portable Communications Main Site Upgrades	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.109	- / 1.055	- / 2.673	- / 8.372	- / 12.209	
Subtotal: Installation	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.109	- / 1.055	- / 2.673	- / 8.372	- / 12.209	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	0.000	0.000	0.000	0.000	0.137	2.586	8.641	13.001	16.328	40.693	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment										Modification Number / Title: 6 / CJ032 HW/SW Obsolescence Wireless Portable Communications Main Site Upgrades											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: CJ032 HW/SW Obsolescence Wireless Portable Communications Main Site Upgrades																															
Manufacturer Information																															
Manufacturer Name: TBD															Manufacturer Location: TBD																
Administrative Leadtime (in Months): 3															Production Leadtime (in Months): 8																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates																		Jul 2021				Jul 2022				Apr 2023					
Delivery Dates																		Mar 2022				Mar 2023				Dec 2023					
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: WPCS Main Site Upgrades																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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 2017		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.109		1 / 0.725		- / -		0 / 0.000		1 / 0.834					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.330		3 / 2.220		0 / 0.000		3 / 2.550					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.453		4 / 5.693		4 / 6.146					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		3 / 2.679		3 / 2.679					
Total		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.109		1 / 1.055		3 / 2.673		7 / 8.372		11 / 12.209					
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	2	7	11
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	10	11
Footnotes:																															
⁽⁸⁾ HW/SW Obsolescence WPCS Main Site Upgrades includes funding for procurement and installation of equipment to correct critical obsolescence issues on LPD17 Class mission systems. Shipsets of equipment vary in quantities and types of components each fiscal year and within a fiscal year. Each ship requires a different number of alterations to be installed, and these alteration packages vary in scope and																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment	Modification Number / Title: 6 / CJ032 HW/SW Obsolescence Wireless Portable Communications Main Site Upgrades
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
cost based on individual ship configurations. A quantity of "1" represents a single "kit" intended for installation in one ship, in a single Chief of Naval Operations (CNO) Availability. Ships may be receiving more than 1 kit in a single availability based upon the fielding plan for the systems being modernized. In FY21, there is (1) total kit being procured for installation during (1) FY22 CNO Availability on LPD 23 (1 kit). In FY22, there are (3) total kits being procured for installation during (3) FY23 CNO Availabilities on LPD 17 (1 kit), LPD 18 (1 kit) and LPD 20 (1 kit). In FY23, there are (4) total kits being procured for installation during (4) CNO Availabilities on LPD 19 (1 kit), LPD 22 (1 kit), LPD 25 (1 kit), and LPD 27 (1 kit). DSA costs will also vary by kit due to differences in scope and complexity, and first installation compared to follow-on installations.		

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Exhibit P-3a, Individual Modification: PB 2019 Navy						Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment				Modification Number / Title: 7 / CJ061 Titanium Valve Replacement			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	0.000	3.580	3.892	3.335	0.000	3.335	5.072	12.096	7.662	2.488	1.582	39.707
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	0.000	3.580	3.892	3.335	0.000	3.335	5.072	12.096	7.662	2.488	1.582	39.707
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	0.000	3.580	3.892	3.335	0.000	3.335	5.072	12.096	7.662	2.488	1.582	39.707
(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:

[Titanium Valve Replacement Phase 1] TITANIUM VALVE REPLACEMENT (CJ061)Titanium Valve Replacement Phase I: Modernization funding is provided to correct mission, safety and reliability issues on mechanical and auxiliary systems and ultimately resolve maintenance intensive system concerns. Funding will support Phase I of the Titanium valve replacement.

[Titanium Valve Replacement Phase 2] TITANIUM VALVE REPLACEMENT Modernization, Titanium Valve Replacement Phase II funding is provided to correct mission, safety and reliability issues on mechanical and auxiliary systems and ultimately resolve maintenance intensive system concerns. Funding will support Phase II of the Titanium valve replacement.

All Phase II procurements have been moved to A-2 years prior to installation, vice A-1 year prior to installation, due to actual lead times seen on previously procured ship sets. Once exception to this change is (1) kit being procured in FY18 for LPD 21 FY19 CNO Availability, which will be still be procured at A-1 years. The procurement of (1) kit for LPD 21 FY19 CNO Availability has remained an A-1 year prior to installation procurement because funding was not available to accelerate the procurement once actual lead times were known.

[Titanium Valves Replacement Phase 3] TITANIUM VALVE REPLACEMENT Modernization Titanium Valve Replacement Phase III funding is provided to correct mission, safety and reliability issues on mechanical and auxiliary systems and ultimately resolve maintenance intensive system concerns. Funding will support Phase III of the Titanium valve replacement.

All Phase III procurements have been moved to A-2 years prior to installation, vice A-1 year prior to installation, due to actual lead times seen on previously procured ship sets.

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Exhibit P-3a, Individual Modification: PB 2019 Navy									Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment					Modification Number / Title: 7 / CJ061 Titanium Valve Replacement				
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 3: Titanium Valve Replacement Phase 1													
B Kits													
Recurring													
1.1.1) Titanium Valve Replacement Phase 1 - NonOrganic ⁽⁹⁾	- / -	2 / 3.580	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 3.580	
Subtotal: Recurring	- / 0.000	- / 3.580	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 3.580	
Subtotal: Titanium Valve Replacement Phase 1	- / -	2 / 3.580	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 3.580	
Modification Item 2 of 3: Titanium Valve Replacement Phase 2													
B Kits													
Recurring													
2.1.1) Titanium Valve Replacement Phase 2 - NonOrganic ⁽¹⁰⁾	- / -	- / -	3 / 2.448	3 / 2.499	- / -	3 / 2.499	- / -	- / -	- / -	- / -	- / -	6 / 4.947	
Subtotal: Recurring	- / 0.000	- / -	- / 2.448	- / 2.499	- / -	- / 2.499	- / -	- / -	- / -	- / -	- / 0.000	- / 4.947	
Subtotal: Titanium Valve Replacement Phase 2	- / -	- / -	3 / 2.448	3 / 2.499	- / -	3 / 2.499	- / -	- / -	- / -	- / -	- / -	6 / 4.947	
Modification Item 3 of 3: Titanium Valve Replacement Phase 3													
B Kits													
Recurring													
3.1.1) Titanium Valves Replacement Phase 3 - NonOrganic ⁽¹¹⁾	- / -	- / -	- / -	- / -	- / -	- / -	1 / 3.190	3 / 9.771	2 / 6.651	- / -	- / -	6 / 19.612	
Subtotal: Recurring	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / 3.190	- / 9.771	- / 6.651	- / -	- / 0.000	- / 19.612	
Subtotal: Titanium Valve Replacement Phase 3	- / -	- / -	- / -	- / -	- / -	- / -	1 / 3.190	3 / 9.771	2 / 6.651	- / -	- / -	6 / 19.612	
Subtotal: Procurement, All Modification Items	- / 0.000	- / 3.580	- / 2.448	- / 2.499	- / -	- / 2.499	- / 3.190	- / 9.771	- / 6.651	- / -	- / 0.000	- / 28.139	
Installation													
Modification Item 1 of 3: Titanium Valve Replacement Phase 1	- / 0.000	- / 0.000	- / 1.329	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 1.329	
Modification Item 2 of 3: Titanium Valve Replacement Phase 2	- / 0.000	- / 0.000	- / 0.115	- / 0.836	- / 0.000	- / 0.836	- / 1.882	- / 2.203	- / 0.000	- / 0.000	- / 0.000	- / 5.036	
Modification Item 3 of 3: Titanium Valve Replacement Phase 3	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.122	- / 1.011	- / 2.488	- / 1.582	- / 5.203	

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Exhibit P-3a, Individual Modification: PB 2019 Navy									Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9			P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment						Modification Number / Title: 7 / CJ061 Titanium Valve Replacement			
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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)
	Subtotal: Installation	- / 0.000	- / -	- / 1.444	- / 0.836	- / -	- / 0.836	- / 1.882	- / 2.325	- / 1.011	- / 2.488	- / 1.582
Total												
Total Cost (Procurement + Support + Installation)	0.000	3.580	3.892	3.335	0.000	3.335	5.072	12.096	7.662	2.488	1.582	39.707

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment										Modification Number / Title: 7 / CJ061 Titanium Valve Replacement											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 3: Titanium Valve Replacement Phase 1																															
Manufacturer Information																															
Manufacturer Name: TBD															Manufacturer Location: TBD																
Administrative Leadtime (in Months): 0															Production Leadtime (in Months): 12																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates		Feb 2017																													
Delivery Dates		Feb 2018																													
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: Titanium Valve Replacement Phase 1																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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 2017		- / -		- / -		2 / 1.329		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 1.329					
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
Total		- / -		- / -		2 / 1.329		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 1.329					
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Out	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment										Modification Number / Title: 7 / CJ061 Titanium Valve Replacement											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 2 of 3: Titanium Valve Replacement Phase 2																															
Manufacturer Information																															
Manufacturer Name: TBD														Manufacturer Location: TBD																	
Administrative Leadtime (in Months): 0														Production Leadtime (in Months): 18																	
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates						Oct 2017				Jul 2019																					
Delivery Dates						Apr 2019				Jan 2021																					
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: Titanium Valve Replacement Phase 2																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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 2017		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2018		- / -		- / -		0 / 0.115		1 / 0.836		0 / 0.000		1 / 0.836		2 / 1.522		- / -		- / -		- / -		0 / 0.000		3 / 2.473							
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.360		3 / 2.203		- / -		- / -		0 / 0.000		3 / 2.563							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
Total		- / -		- / -		0 / 0.115		1 / 0.836		0 / 0.000		1 / 0.836		2 / 1.882		3 / 2.203		- / -		- / -		0 / 0.000		6 / 5.036							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	1	-	-	2	-	-	-	1	-	2	-	-	-	-	-	-	-	-	-	6
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	1	-	1	-	1	1	-	-	-	-	-	6

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment					Modification Number / Title: 7 / CJ061 Titanium Valve Replacement																					
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:																					
Modification Item 3 of 3: Titanium Valve Replacement Phase 3																															
Manufacturer Information																															
Manufacturer Name: TBD										Manufacturer Location: TBD																					
Administrative Leadtime (in Months): 0										Production Leadtime (in Months): 18																					
Dates		FY 2017		FY 2018		FY 2019		FY 2020		FY 2021		FY 2022		FY 2023																	
Contract Dates								Jul 2020		Jul 2021		Jul 2022																			
Delivery Dates								Jan 2022		Jan 2023		Jan 2024																			
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: Titanium Valves Replacement Phase 3																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.636	1 / 0.636	- / -	0 / 0.000																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.375	3 / 2.233	0 / 0.000																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.255	2 / 1.582																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.122	1 / 1.011	3 / 2.488	2 / 1.582																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	2	2	6
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	5	6
Footnotes:																															
⁽⁹⁾ CJ061 HM&E MECHANICAL/AUXILIARY MODIFICATIONSHME Modernization Titanium Valve Replacement Phase I funding is provided to correct mission, safety and reliability issues on mechanical and auxiliary systems and ultimately resolve maintenance intensive system concerns. Shipsets of equipment vary in quantities and types of components each fiscal year and within a fiscal year. Each ship requires a different number of alterations to be installed, and these alteration packages vary in scope and cost based on individual ship configurations. A quantity of "1" represents a single "kit" intended for installation in one ship, in a single Chief of Naval Operations (CNO) Availability. Ships may be receiving more than 1 kit in a single availability based upon the fielding plan for the systems being modernized. In FY17, there were a																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment	Modification Number / Title: 7 / CJ061 Titanium Valve Replacement
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
total of (2) kits procured in support of (2) FY18 CNO Availabilities on LPD 19 (1 kit) and LPD 22 (1 kit). DSA costs will also vary by kit due to differences in scope and complexity, and first installation compared to follow-on installations. ⁽¹⁰⁾) HM&E MECHANICAL/AUXILIARY MODIFICATIONSHME Modernization, Titanium Valve Replacement Phase II funding is provided to correct mission, safety and reliability issues on mechanical and auxiliary systems and ultimately resolve maintenance intensive system concerns. Shipsets of equipment vary in quantities and types of components each fiscal year and within a fiscal year. Each ship requires a different number of alterations to be installed, and these alteration packages vary in scope and cost based on individual ship configurations. A quantity of "1" represents a single "kit" intended for installation in one ship, in a single Chief of Naval Operations (CNO) Availability. Ships may be receiving more than 1 kit in a single availability based upon the fielding plan for the systems being modernized. In FY18, there are (3) total kits being procured for installation during (1) FY19 CNO Availability and (2) FY20 CNO Availability on LPD 21 (1 kit for FY19), LPD 17 (1 kit for FY20) and LPD 18 (1 kit for FY20). In FY19, there are (3) total kits being procured for installation during (3) FY21 CNO Availabilities on LPD 19 (1 kit) and LPD 20 (1 kit), and LPD 22 (1 kit). DSA costs will also vary by kit due to differences in scope and complexity, and first installation compared to follow-on installations. All Phase II procurements have been moved to A-2 years prior to installation, vice A-1 year prior to installation, due to actual lead times seen on previously procured ship sets. Once exception to this change is (1) kit being procured in FY18 for LPD 21 FY19 CNO Availability, which will be still be procured at A-1 years. The procurement of (1) kit for LPD 21 FY19 CNO Availability has remained an A-1 year prior to installation procurement because funding was not available to accelerate the procurement once actual lead times were known. ⁽¹¹⁾ HM&E MECHANICAL/AUXILIARY MODIFICATIONSHME Modernization Titanium Valve Replacement Phase III funding is provided to correct mission, safety and reliability issues on mechanical and auxiliary systems and ultimately resolve maintenance intensive system concerns. Shipsets of equipment vary in quantities and types of components each fiscal year and within a fiscal year. Each ship requires a different number of alterations to be installed, and these alteration packages vary in scope and cost based on individual ship configurations. A quantity of "1" represents a single "kit" intended for installation in one ship, in a single Chief of Naval Operations (CNO) Availability. Ships may be receiving more than 1 kit in a single availability based upon the fielding plan for the systems being modernized. In FY20, there is (1) total kit being procured for installation during (1) FY22 CNO Availability on LPD 21 (1 kit). In FY21, there are (3) total kits being procured for installation during (3) FY23 CNO Availabilities on LPD 17 (1 kit), LPD 18 (1 kit), and LPD 20 (1 kit). In FY22, there are (2) total kits being procured for installation during (2) FY24 CNO Availabilities on LPD 19 (1 kit) and LPD 22 (1 kit). DSA costs will also vary by kit due to differences in scope and complexity, and first installation compared to follow-on installations. All Phase III procurements have been moved to A-2 years prior to installation, vice A-1 year prior to installation, due to actual lead times seen on previously procured ship sets.		

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Exhibit P-3a, Individual Modification: PB 2019 Navy						Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment				Modification Number / Title: 8 / CJ062 HM&E Mechanical/Auxiliary Mods Knuckleboom Crane Improvements			

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

Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	0.300	1.248	2.335	0.000	2.335	3.083	2.528	1.794	1.393	0.000	12.681
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	0.300	1.248	2.335	0.000	2.335	3.083	2.528	1.794	1.393	0.000	12.681
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	0.300	1.248	2.335	0.000	2.335	3.083	2.528	1.794	1.393	0.000	12.681
(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:

[Knuckleboom Crane Improvement] KNUCKLEBOOM CRANE IMPROVEMENTS Modernization funding is provided to correct mission, safety and reliability issues on mechanical and auxiliary systems and ultimately resolve maintenance intensive system concerns. Funding will support boat and cargo crane safety upgrades.

[Non-Recurring Engineering] NRE include the following efforts:

FY17: Non-recurring engineering in support of Knuckleboom Crane safety improvements to include interlock switches, e-stops, secure anchor points, crane cab ventilation, and access point for emergency egress.

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Exhibit P-3a, Individual Modification: PB 2019 Navy									Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment					Modification Number / Title: 8 / CJ062 HM&E Mechanical/Auxiliary Mods Knuckleboom Crane Improvements				
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> CJ062 HM&E Mechanical/ Auxiliary Mods Knuckleboom Crane Improvements													
B Kits													
Recurring													
1.1.1) Knuckleboom Crane Improvement - NonOrganic (12)	- / -	- / -	2 / 1.020	2 / 1.041	- / -	2 / 1.041	3 / 1.595	1 / 0.543	2 / 1.108	- / -	- / -	10 / 5.307	
<i>Subtotal: Recurring</i>	- / 0.000	- / -	- / 1.020	- / 1.041	- / -	- / 1.041	- / 1.595	- / 0.543	- / 1.108	- / -	- / 0.000	- / 5.307	
<i>Subtotal: CJ062 HM&E Mechanical/Auxiliary Mods Knuckleboom Crane Improvements</i>	- / -	- / -	2 / 1.020	2 / 1.041	- / -	2 / 1.041	3 / 1.595	1 / 0.543	2 / 1.108	- / -	- / -	10 / 5.307	
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.000	- / -	- / 1.020	- / 1.041	- / -	- / 1.041	- / 1.595	- / 0.543	- / 1.108	- / -	- / 0.000	- / 5.307	
Support (All Modification Items)													
2.1) Non-Recurring Engineering	- / -	- / 0.300	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.300	
<i>Subtotal: Support</i>	- / 0.000	- / 0.300	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 0.300	
Installation													
<i>Modification Item 1 of 1:</i> CJ062 HM&E Mechanical/ Auxiliary Mods Knuckleboom Crane Improvements	- / 0.000	- / 0.000	- / 0.228	- / 1.294	- / 0.000	- / 1.294	- / 1.488	- / 1.985	- / 0.686	- / 1.393	- / 0.000	- / 7.074	
<i>Subtotal: Installation</i>	- / 0.000	- / -	- / 0.228	- / 1.294	- / -	- / 1.294	- / 1.488	- / 1.985	- / 0.686	- / 1.393	- / 0.000	- / 7.074	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.300	1.248	2.335	0.000	2.335	3.083	2.528	1.794	1.393	0.000	12.681	

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment	Modification Number / Title: 8 / CJ062 HM&E Mechanical/Auxiliary Mods Knuckleboom Crane Improvements

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

Modification Item 1 of 1: CJ062 HM&E Mechanical/Auxiliary Mods Knuckleboom Crane Improvements

Manufacturer Information

Manufacturer Name: TBD	Manufacturer Location: TBDBTD
Administrative Leadtime (in Months): 3	Production Leadtime (in Months): 8

Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Contract Dates		Jul 2018	Apr 2019	Jan 2020	Jun 2021	Jan 2022	
Delivery Dates		Mar 2019	Dec 2019	Sep 2020	Feb 2022	Sep 2022	

Installation Information

Method of Implementation: [none specified]:: Installation Name: Knuckleboom Crane Improvement

Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	0 / 0.228	2 / 1.061	0 / 0.000	2 / 1.061	- / -	- / -	- / -	- / -	0 / 0.000	2 / 1.289
FY 2019	- / -	- / -	- / -	0 / 0.233	0 / 0.000	0 / 0.233	2 / 1.131	- / -	- / -	- / -	0 / 0.000	2 / 1.364
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.357	3 / 1.864	- / -	- / -	0 / 0.000	3 / 2.221
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.121	1 / 0.503	- / -	0 / 0.000	1 / 0.624
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.183	2 / 1.393	0 / 0.000	2 / 1.576
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	0 / 0.228	2 / 1.294	0 / 0.000	2 / 1.294	2 / 1.488	3 / 1.985	1 / 0.686	2 / 1.393	0 / 0.000	10 / 7.074

Installation Schedule

	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	1	1	-	1	-	1	1	-	1	1	-	1	-	-	1	-	-	1	-	10
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	1	-	-	1	-	-	2	1	-	1	-	1	1	10

Footnotes:

(12) HM&E MECHANICAL/AUXILIARY MODIFICATIONSHME Modernization Knuckleboom Crane Improvement funding is provided to correct mission, safety and reliability issues on mechanical and auxiliary systems and ultimately resolve maintenance intensive system concerns. Shipsets of equipment vary in quantities and types of components each fiscal year and within a fiscal year. Each ship requires a different number of alterations to be installed, and these alteration packages vary in scope and cost based on individual ship configurations. A quantity of "1" represents a single "kit" intended for installation in one ship, in

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment	Modification Number / Title: 8 / CJ062 HM&E Mechanical/Auxiliary Mods Knuckleboom Crane Improvements
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
a single Chief of Naval Operations (CNO) Availability. Ships may be receiving more than 1 kit in a single availability based upon the fielding plan for the systems being modernized. In FY18, there are (2) total kits being procured for installation during (2) FY19 CNO Availabilities on LPD 20 (1 kit) and LPD 23 (1 kit). In FY19, there are (2) total kits being procured for installation during (2) FY20 CNO Availabilities on LPD 18 (1 kit), LPD 25 (1 kit). In FY20, there are (3) total kits being procured for installation during (3) FY21 CNO Availabilities on LPD 19 (1 kit) and LPD 22 (1 kit) and LPD 27 (1 kit). In FY21, there is (1) total kit being procured for installation during (1) FY22 CNO Availability on LPD 21 (1 kit). In FY22, there are (3) total kits being procured for installation during (3) FY23 CNO Availabilities on LPD 17 (1 kit) and LPD 24 (1 kit), and LPD 26 (1 kit). DSA costs will also vary by kit due to differences in scope and complexity, and first installation compared to follow-on installations.		

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment					Modification Number / Title: 9 / CJ063 HM&E Mechanical/Auxiliary Mod Common Fuel Rail		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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	4.359	11.015	22.150	18.958	19.775	76.257
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	4.359	11.015	22.150	18.958	19.775	76.257
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	4.359	11.015	22.150	18.958	19.775	76.257
<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: [Common Fuel Rail] FUEL INJECTION COMMON RAIL Modernization funding is provided to correct mission, safety and reliability issues on Main Propulsion Diesel Engine (MPDE) systems and ultimately resolve maintenance intensive system concerns. Funding will support developing and installing a high-pressure, electronically-controlled fuel injection rail system.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment						Modification Number / Title: 9 / CJ063 HM&E Mechanical/Auxiliary Mod Common Fuel Rail			
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> CJ063 HM&E Mechanical/ Auxiliary Mod Common Fuel Rail													
B Kits													
Recurring													
1.1.1) Common Fuel Rail - NonOrganic ⁽¹³⁾	- / -	- / -	- / -	- / -	- / -	- / -	1 / 4.253	2 / 8.685	4 / 17.735	2 / 9.054	2 / 9.674	11 / 49.401	
<i>Subtotal: Recurring</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / 4.253	- / 8.685	- / 17.735	- / 9.054	- / 9.674	- / 49.401	
<i>Subtotal: CJ063 HM&E Mechanical/Auxiliary Mod Common Fuel Rail</i>	- / -	- / -	- / -	- / -	- / -	- / -	1 / 4.253	2 / 8.685	4 / 17.735	2 / 9.054	2 / 9.674	11 / 49.401	
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / 4.253	- / 8.685	- / 17.735	- / 9.054	- / 9.674	- / 49.401	
Installation													
<i>Modification Item 1 of 1:</i> CJ063 HM&E Mechanical/ Auxiliary Mod Common Fuel Rail	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.106	- / 2.330	- / 4.415	- / 9.904	- / 10.101	- / 26.856	
<i>Subtotal: Installation</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / 0.106	- / 2.330	- / 4.415	- / 9.904	- / 10.101	- / 26.856	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	0.000	0.000	0.000	0.000	4.359	11.015	22.150	18.958	19.775	76.257	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment										Modification Number / Title: 9 / CJ063 HM&E Mechanical/Auxiliary Mod Common Fuel Rail											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: CJ063 HM&E Mechanical/Auxiliary Mod Common Fuel Rail																															
Manufacturer Information																															
Manufacturer Name: TBD															Manufacturer Location: TBDBTD																
Administrative Leadtime (in Months): 3															Production Leadtime (in Months): 8																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates														Jan 2020				Jun 2021				Jan 2022				Apr 2023					
Delivery Dates														Sep 2020				Feb 2022				Sep 2022				Dec 2023					
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: Common Fuel Rail																															
Installation Cost		Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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 2017		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2018		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2019		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2020		- / -	- / -		- / -		- / -		- / -		- / -		0 / 0.106		1 / 2.113		- / -		- / -		0 / 0.000		1 / 2.219								
FY 2021		- / -	- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.217		2 / 3.972		- / -		0 / 0.000		2 / 4.189								
FY 2022		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.443		4 / 9.678		0 / 0.000		4 / 10.121								
FY 2023		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.226		2 / 5.043		2 / 5.269								
To Complete		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		2 / 5.058		2 / 5.058								
Total		- / -	- / -		- / -		- / -		- / -		- / -		0 / 0.106		1 / 2.330		2 / 4.415		4 / 9.904		4 / 10.101		11 / 26.856								
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	1	-	2	-	-	2	4	11
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	2	7	11
Footnotes:																															
(13) HM&E MECHANICAL/AUXILIARY MODIFICATIONSHME Modernization Common Fuel Rail funding is provided to correct mission, safety and reliability issues on Main Propulsion Diesel Engine (MPDE) systems and ultimately resolve maintenance intensive system concerns. Shipsets of equipment vary in quantities and types of components each fiscal year and within a fiscal year. Each ship requires a different number of alterations to be installed, and these alteration packages vary in scope and cost based on individual ship configurations. A quantity of "1" represents a single "kit" intended for installation in one ship,																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment	Modification Number / Title: 9 / CJ063 HM&E Mechanical/Auxiliary Mod Common Fuel Rail
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
in a single Chief of Naval Operations (CNO) Availability. Ships maybe receiving more than 1 kit in a single availability based upon the fielding plan for the systems being modernized. In FY20, there is (1) total kit being procured for installation during (1) FY21 CNO Availabilities on LPD 22 (1 kit). In FY21, there are (2) total kits being procured for installation during (2) FY22 CNO Availabilities on LPD 21 (1 kit) and LPD 23 (1 kit). In FY22, there are (4) total kits being procured for installation during (4) FY23 CNO Availabilities on LPD 17 (1 kit), LPD 20 (1 kit), LPD 24 (1 kit) and LPD 26 (1 kit). In FY23, there are at total of (2) kits being procured for installation during (2) FY24 CNO Availabilities on LPD 19 (1 kit) and LPD 25 (1 kit). DSA costs will also vary by kit due to differences in scope and complexity, and first installation compared to follow-on installations.		

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment					Modification Number / Title: 10 / CJ034 NDDS NAVIGATION NETWORK INSTALLATION		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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	0.744	0.863	1.552	1.799	0.000	4.958
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	0.744	0.863	1.552	1.799	0.000	4.958
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	0.744	0.863	1.552	1.799	0.000	4.958
<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: [NDDS NAVIGATION NETWORK INSTALLATION] NAVIGATION DATA DISTRIBUTION SYSTEM (NDDS) NETWORK INSTALLATION Modernization funding is provided to create an independent Navigation Network, removing the current NDDS equipment connection from the Hull Mechanical & Electrical (HM&E) network. This will include hardware and software upgrades that will also address obsolescence in the system, and address Cyber Security requirements. [NDDS Non-Recurring] NRE includes the following efforts: FY19: Non-Recurring Engineering in support of NDDS Navigation Network Installation includes hardware obsolescence and upgrade of software operating system to Red Hat Linux.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment					Modification Number / Title: 10 / CJ034 NDDS NAVIGATION NETWORK INSTALLATION			
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> CJ034 NDDS NAVIGATION NETWORK INSTALLATION													
B Kits													
Recurring													
1.1.1) NDDS NAVIGATION NETWORK INSTALLATION - NonOrganic ⁽¹⁴⁾	- / -	- / -	- / -	- / -	- / -	- / -	1 / 0.649	- / -	2 / 1.352	- / -	- / -	3 / 2.001	
<i>Subtotal: Recurring</i>	<i>- / 0.000</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 0.649</i>	<i>- / -</i>	<i>- / 1.352</i>	<i>- / -</i>	<i>- / 0.000</i>	<i>- / 2.001</i>	
<i>Subtotal: CJ034 NDDS NAVIGATION NETWORK INSTALLATION</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>1 / 0.649</i>	<i>- / -</i>	<i>2 / 1.352</i>	<i>- / -</i>	<i>- / -</i>	<i>3 / 2.001</i>	
<i>Subtotal: Procurement, All Modification Items</i>	<i>- / 0.000</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 0.649</i>	<i>- / -</i>	<i>- / 1.352</i>	<i>- / -</i>	<i>- / 0.000</i>	<i>- / 2.001</i>	
Installation													
<i>Modification Item 1 of 1:</i> CJ034 NDDS NAVIGATION NETWORK INSTALLATION	<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>- / 0.095</i>	<i>- / 0.863</i>	<i>- / 0.200</i>	<i>- / 1.799</i>	<i>- / 0.000</i>	<i>- / 2.957</i>	
<i>Subtotal: Installation</i>	<i>- / 0.000</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 0.095</i>	<i>- / 0.863</i>	<i>- / 0.200</i>	<i>- / 1.799</i>	<i>- / 0.000</i>	<i>- / 2.957</i>	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	0.000	0.000	0.000	0.000	0.744	0.863	1.552	1.799	0.000	4.958	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment										Modification Number / Title: 10 / CJ034 NDDS NAVIGATION NETWORK INSTALLATION											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: CJ034 NDDS NAVIGATION NETWORK INSTALLATION																															
Manufacturer Information																															
Manufacturer Name: VARIOUS															Manufacturer Location: Various																
Administrative Leadtime (in Months): 0															Production Leadtime (in Months): 8																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates														Jul 2020				Jun 2021				Jan 2022									
Delivery Dates														Mar 2021				Feb 2022				Sep 2022									
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: NDDS NAVIGATION NETWORK INSTALLATION																															
Installation Cost		Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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 2017		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2018		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2019		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2020		- / -	- / -		- / -		- / -		- / -		- / -		0 / 0.095		1 / 0.863		- / -		- / -		0 / 0.000		1 / 0.958								
FY 2021		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2022		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.200		2 / 1.799		0 / 0.000		2 / 1.999								
FY 2023		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
To Complete		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
Total		- / -	- / -		- / -		- / -		- / -		- / -		0 / 0.095		1 / 0.863		0 / 0.200		2 / 1.799		0 / 0.000		3 / 2.957								
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	1	-	3
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	1	3
Footnotes: ⁽¹⁴⁾ NAVIGATION DATA DISTRIBUTION SYSTEM (NDDS) NETWORK INSTALLATION Modernization funding is provided to create an independent Navigation Network, removing the current NDDS equipment connection from the Hull Mechanical & Electrical (HM&E) network. This will include hardware and software upgrades that will also address obsolescence in the system, and address Cyber Security requirements. Shipsets of equipment vary in quantities and types of components each fiscal year and within a fiscal year. Each ship requires a different number of alterations to be installed, and these alteration packages vary																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment	Modification Number / Title: 10 / CJ034 NDDS NAVIGATION NETWORK INSTALLATION
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
in scope and cost based on individual ship configurations. A quantity of "1" represents a single "kit" intended for installation in one ship, in a single Chief of Naval Operations (CNO) Availability. Ships may be receiving more than 1 kit in a single availability based upon the fielding plan for the systems being modernized. In FY20, there one (1) kit being procured for installation during (1) FY21 CNO Availabilities on LPD 19 (1 kit). In FY 22, there are (2) total kits being procured for installation during (2) FY23 CNO Availabilities on LPD 20 (1 kit) and LPD 26 (1 kit). DSA costs will also vary by kit due to differences in scope and complexity, and first installation compared to follow-on installations.		

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Exhibit P-3a, Individual Modification: PB 2019 Navy							Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment				Modification Number / Title: 11 / CJ035 CYBER REQUIREMENT			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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	1.632	2.876	3.692	0.000	8.200
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	1.632	2.876	3.692	0.000	8.200
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	1.632	2.876	3.692	0.000	8.200
<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:

[CJ035 CYBER REQUIREMENT] CYBER REQUIREMENT Modernization funding is provided to implement cyber resiliency principles, a Defense-in-Depth Functional Implementation Architecture (DFIA), Boundary Defense Capabilities and Situational Awareness tools.

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Exhibit P-3a, Individual Modification: PB 2019 Navy									Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment					Modification Number / Title: 11 / CJ035 CYBER REQUIREMENT				
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: CJ035 CYBER REQUIREMENT													
B Kits													
Recurring													
1.1.1) CJ035 CYBER REQUIREMENT - NonOrganic ⁽¹⁵⁾	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 1.470	2 / 1.470	3 / 2.205	- / -	7 / 5.145	
Subtotal: Recurring	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.470	- / 1.470	- / 2.205	- / 0.000	- / 5.145	
Subtotal: CJ035 CYBER REQUIREMENT	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 1.470	2 / 1.470	3 / 2.205	- / -	7 / 5.145	
Subtotal: Procurement, All Modification Items	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.470	- / 1.470	- / 2.205	- / 0.000	- / 5.145	
Installation													
Modification Item 1 of 1: CJ035 CYBER REQUIREMENT	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.162	- / 1.406	- / 1.487	- / 0.000	- / 3.055	
Subtotal: Installation	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.162	- / 1.406	- / 1.487	- / 0.000	- / 3.055	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.632	2.876	3.692	0.000	8.200	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment										Modification Number / Title: 11 / CJ035 CYBER REQUIREMENT																
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:																					
Modification Item 1 of 1: CJ035 CYBER REQUIREMENT																															
Manufacturer Information																															
Manufacturer Name: Various										Manufacturer Location: Various																					
Administrative Leadtime (in Months): 0										Production Leadtime (in Months): 8																					
Dates		FY 2017			FY 2018			FY 2019			FY 2020			FY 2021			FY 2022			FY 2023											
Contract Dates														Jul 2021			Feb 2022														
Delivery Dates														Mar 2022			Oct 2022														
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: CJ035 CYBER REQUIREMENT																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.162	2 / 1.244	- / -	0 / 0.000	2 / 1.406																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.162	2 / 1.244	0 / 0.000	2 / 1.406																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.243	3 / 0.000	3 / 0.243																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.162	2 / 1.406	2 / 1.487	3 / 0.000	7 / 3.055																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	1	-	-	1	3	7
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	5	7
Footnotes: ⁽¹⁵⁾ CYBER REQUIREMENT Modernization funding is provided to implement cyber resiliency principles, a Defense-in-Depth Functional Implementation Architecture (DFIA), Boundary Defense Capabilities and Situational Awareness tools. Shipsets of equipment vary in quantities and types of components each fiscal year and within a fiscal year. Each ship requires a different number of alterations to be installed, and these alteration packages vary in scope and cost based on individual ship configurations. A quantity of "1" represents a single "kit" intended for installation in one ship, in a single Chief of Naval Operations (CNO) Availability. Ships may be receiving more than 1 kit in a single availability based upon the fielding plan for the systems being modernized. In FY21, there are a total of (2) kits being procured in support of (2) FY22																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0946 / LPD Class Support Equipment	Modification Number / Title: 11 / CJ035 CYBER REQUIREMENT
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
CNO Availabilities on LPD 23 (1 kit) and LPD 28 (1 kit). In FY22, there are at total of (2) kits being procured in support of (2) FY23 CNO Availabilities on LPD 17 (1 kit) and LPD 24 (1) kit. In FY23, there are a total of (3) kits being procured in support of (3) FY24 CNO Availabilities on LPD 19 (1 kit), LPD 22 (1 kit), and LPD 25 (1 kit). DSA costs will also vary by kit due to differences in scope and complexity, and first installation compared to follow-on installations.		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment	P-1 Line Item Number / Title: 0947 / DDG 1000 Class Support Equipment

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: 0204202N	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: 197

Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	33.404	0.000	89.700	0.000	89.700	11.330	14.791	24.516	21.635	-	195.376
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	33.404	0.000	89.700	0.000	89.700	11.330	14.791	24.516	21.635	-	195.376
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	33.404	0.000	89.700	0.000	89.700	11.330	14.791	24.516	21.635	-	195.376

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

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

DDG 1000, a multi-mission surface combatant, will serve as a versatile asset in the context of future Naval Strategy. Armed with an array of weapons, DDG 1000 will provide the Joint Force Commander with precision strike and volume fires. Designed with sustainable payload, multi-spectral stealth and optimal manning, DDG 1000 will take the fight to the enemy with unprecedented striking power.

Program provides for DDG 1000 combat system hardware/equipment suite technology refresh to support obsolescence management and address reliability, maintainability & availability (RM&A) issues following fielding. Combat System hardware will be approaching 10 years of age at time of delivery. Active management of Commercial Off The Shelf (COTS) obsolescence via hardware/equipment technology refresh will be required to ensure DDG 1000 class ships reach their design service life. Additionally, program will sustain and upgrade in-service DDG 1000 ships in order to achieve their Expected Service Life (ESL). Upgrades will be mission capable in countering current and projected threats, improve operational capabilities, and comply with requirements.

After a comprehensive review of Zumwalt class requirements, Navy decided in November 2017 to refocus the primary mission of the Zumwalt Class Destroyers from Land Attack to Offensive Surface Strike. The funding requested in PB 19 will facilitate this change in mission and add lethal, offensive fires against targets afloat and ashore. These changes include integration of SM-6 capability, Maritime Strike Tomahawk Integration, and organic cryptologic collection equipment (SPECTRAL). In order to maintain the required radar signature, an upgrade in off-board platform communications to the Network Tactical Common Data Link (NTCDL) is also required, paired with the SPECTRAL system.

The Advanced Gun Systems will remain on the ships, but in an inactive status for future use, when a gun round that can affordably meet the desired capability is developed and fielded.

[P40A / DDG 1000 Data Center]: Funding provides for the procurement and installation of critical technology refresh of the technical baseline for DDG 1000 data center to enable the DDG 1000 combat system to operate with a fully populated data center (computer room). Technology refresh includes non-recurring engineering required to identify and qualify applicable obsolete DDG 1000 data center parts, prepare drawing updates (Lowest Replaceable Unit (LRU) & cabinet level), and prepare Integrated Logistics Support (ILS) updates (LRU & cabinet level). A fully populated data center houses the Total Ship Computing Environment (TSCE); a single, secure network that includes all shipboard computing applications, from Command, Control, Communications, Computers (C4), and intelligence equipment to Combat Management Systems (CMSs) to machinery control and embedded training, support, and damage control systems.

[P40A / DDG 1001 Data Center]: Funding provides for the procurement and installation of critical technology refresh of the technical baseline for DDG 1001 data center to enable the DDG 1001 combat system to operate with a fully populated data center (computer room). Technology refresh includes non-recurring engineering required to identify and qualify applicable obsolete DDG 1001 data center parts, prepare drawing updates (Lowest Replaceable Unit (LRU) & cabinet level), and prepare Integrated Logistics Support (ILS) updates (LRU & cabinet level). A fully populated data center houses the Total Ship Computing

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment		P-1 Line Item Number / Title: 0947 / DDG 1000 Class Support Equipment
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: 0204202N	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: 197		
Environment (TSCE); a single, secure network that includes all shipboard computing applications, from Command, Control, Communications, Computers (C4), and intelligence equipment to Combat Management Systems (CMSs) to machinery control and embedded training, support, and damage control systems.		
[P40A / DDG 1002 Data Center]: Funding provides for the procurement and installation of critical technology refresh of the technical baseline for DDG 1002 data center to enable the DDG 1002 combat system to operate with a fully populated data center (computer room). Technology refresh includes non-recurring engineering required to identify and qualify applicable obsolete DDG 1002 data center parts, prepare drawing updates (Lowest Replaceable Unit (LRU) & cabinet level), and prepare Integrated Logistics Support (ILS) updates (LRU & cabinet level). A fully populated data center houses the Total Ship Computing Environment (TSCE); a single, secure network that includes all shipboard computing applications, from Command, Control, Communications, Computers (C4), and intelligence equipment to Combat Management Systems (CMSs) to machinery control and embedded training, support, and damage control systems.		
[P40A / DDG 1000 Class Product Improvement]: Funding will support ship alteration (Shipalt) prioritization and planning through shipyard installations during availabilities. Other modernization efforts include but are not limited to logistics and technical documentation, engineering services and Alteration Installation Team (AITs) within the Fleet Modernization Program (FMP). Funding will procure DDG 1000 Total Ship Computing Environment (TSCE) network switches which are critical items required to support DDG 1000 Data Center technology refresh. These TSCE network switches support Integrated Ship Plan (ISP) validation, address obsolescence, and require configuration engineering prior to installation. Without a supportable ISP, the ship will be unable to validate the operation and safety of the ship's systems.		
[P40A / Critical Cybersecurity Upgrades and Improvements]: The Total Ship Computing Environment (TSCE) integrates all the ship's sensors and weapons into a cohesive Combat System (CS). The TSCE is integrated with an array of sensors and weapons that exchange data across the domains with the core network using a series of buffering computers known as Distributed Adaptation Processors (DAPs). The new ZUMWALT Class ship design has reliable and effective land-attack maritime dominance capabilities that meet stringent signature goals, which are interoperable with Joint forces.		
FY19 OPN funding required for hardware procurement and hardware engineering support to support Windows 10 Upgrade, Linux Kernel Integrity Validation tool, and Secure Data Distribution Services equipment. Windows 10 upgrade is required to support existing capabilities, prevent cybersecurity vulnerabilities, and is mandated by OPNAV requirements. Installation of Linux Kernel Integrity Validation tool will upgrade methods for detecting malicious activity (including "Zero-day" attacks) in order to keep pace with ongoing threats. Secure Data Distribution Services will provide comprehensive detection and countermeasure capabilities to ensure data confidentiality and integrity, and will help keep pace with ongoing threats.		
[P40A / Common Display System]: The Common Display System (CDS), an integral part of the TSCE infrastructure, consists of information-display consoles/peripherals that display the integrated data required to operate the ship and its systems. There are 40 consoles on each Zumwalt Class ship and 22 consoles in the shore trainer facility. The CDS variant on ZUMWALT class are unique configuration based on a 10 year old design and should be aligned with ongoing modernization efforts in the Fleet.		
Funding to procure and install ZUMWALT Class ships CDS.		
[P40A / TSCE Diminishing Manufacturing Sources & Material Shortages (DMSMS)]: FY19 OPN funding is required to procure ZUMWALT Class ships network and computing equipment to address obsolescence and DMS concerns to sustain the ZUMWALT Class TSCE and minimize total operation costs. Fifty percent of TSCE components are currently obsolete and obsolescence forecasts predict ninety percent obsolete by FY20. NRE is based on SD-22 solution costs adjusted for inflation for current and predicted obsolescence. Funding is required to maintain ship readiness; without funding, obsolescence in ZUMWALT Class network and computing environments will impact the ship's ability to get underway, increase cybersecurity vulnerabilities, and decrease capacity for sparing.		
[P40A / DDG 1000 N-CC-1/3 Integration]: Integration of SM-6 capability. Funding required for Total Ship Computing Environment (TSCE) Integration, ship integration and testing, and Live Fire Testing.		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy							Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment						P-1 Line Item Number / Title: 0947 / DDG 1000 Class Support Equipment				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: 0204202N			Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: 197										
Exhibits Schedule					Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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	DDG 1000 Class Support Equipment	P-5a, P-21			- / 0.000	- / 33.404	- / -	- / 89.700	- / -	- / 89.700
P-40	Total Gross/Weapon System Cost				- / 0.000	- / 33.404	- / 0.000	- / 89.700	- / 0.000	- / 89.700
*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:

Existing DDG 1000 and follow data center hardware is already over 10 years old. Technology refresh includes non-recurring engineering required to identify and qualify applicable obsolete data center parts, prepare drawing updates (Lowest Replaceable Unit (LRU) & cabinet level), and prepare Integrated Logistics Support (ILS) updates (LRU & cabinet level). DDG-1002 Data Center needed to support installation during Post-Delivery Availability scheduled in Jan 2021.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9						P-1 Line Item Number / Title: 0947 / DDG 1000 Class Support Equipment									Aggregated Items Title: DDG 1000 Class Support Equipment					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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) DDG 1000 CLASS SUPPORT EQUIPMENT																				
1.1) DDG 1000 Data Center ^(†)	A		-	-	-	30,600K	1	30.600	-	-	-	-	-	-	-	-	-	-	-	-
1.2) DDG 1001 Data Center ^(†)	A		-	-	-	-	-	-	-	-	-	32,000K	1	32.000	-	-	-	32,000K	1	32.000
1.3) DDG 1002 Data Center ^(†)	A		-	-	-	-	-	-	-	-	-	32,000K	1	32.000	-	-	-	32,000K	1	32.000
Subtotal: 1) DDG 1000 CLASS SUPPORT EQUIPMENT			-	-	0.000	-	-	30.600	-	-	-	-	-	64.000	-	-	-	-	-	64.000
2) DDG 1000 CLASS SUPPORT																				
2.1) Production Engineering	A		-	-	-	-	-	1.400	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 2) DDG 1000 CLASS SUPPORT			-	-	0.000	-	-	1.400	-	-	-	-	-	-	-	-	-	-	-	-
3) DDG 1000 CLASS HM&E PRODUCT IMPROVEMENT																				
3.1) DDG 1000 Class Product Improvement	A		-	-	-	-	-	1.404	-	-	-	-	-	3.200	-	-	-	-	-	3.200
3.2) Critical Cybersecurity Upgrades and Improvements	A		-	-	-	-	-	-	-	-	-	-	-	9.300	-	-	-	-	-	9.300
3.3) Common Display System	A		-	-	-	-	-	-	-	-	-	-	-	8.000	-	-	-	-	-	8.000
3.4) TSCE Diminishing Manufacturing Sources & Material Shortages (DMSMS)	A		-	-	-	-	-	-	-	-	-	-	-	5.200	-	-	-	-	-	5.200
Subtotal: 3) DDG 1000 CLASS HM&E PRODUCT IMPROVEMENT			-	-	0.000	-	-	1.404	-	-	-	-	-	25.700	-	-	-	-	-	25.700
Total			-	-	0.000	-	-	33.404	-	-	-	-	-	89.700	-	-	-	-	-	89.700

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 2019 Navy									Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9			P-1 Line Item Number / Title: 0947 / DDG 1000 Class Support Equipment						Aggregated Items: DDG 1000 Class Support Equipment			
Item Number / Title [DODIC]	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1) DDG 1000 CLASS SUPPORT EQUIPMENT												
1.1) DDG 1000 Data Center ^(†)		2017	Raytheon / Portsmouth, RI	SS / FP	NAVSEA	Sep 2017	Mar 2019	1	30,600K	N	Aug 2016	Sep 2016
1.2) DDG 1001 Data Center ^(†)		2019	Raytheon / Portsmouth, RI	C / TBD	** NO PCO **	Oct 2018	Oct 2018	1	32,000K	N		
1.3) DDG 1002 Data Center ^(†)		2019	Raytheon / Portsmouth, RI	SS / FP	NAVSEA	Nov 2018	May 2020	1	32,000K	N		

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2019 Navy																				Date: February 2018															
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0947 / DDG 1000 Class Support Equipment										Aggregated Items: DDG 1000 Class Support Equipment															
Items <i>(Units in Each)</i>							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) DDG 1000 CLASS SUPPORT EQUIPMENT																																			
1.1) DDG 1000 Data Center																																			
	1	2017	NAVY		1	0	1											A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
1.2) DDG 1001 Data Center																																			
	2	2019	NAVY		1	0	1																										1		
1.3) DDG 1002 Data Center																																			
	3	2019	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 2019 Navy																				Date: February 2018														
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0947 / DDG 1000 Class Support Equipment										Aggregated Items: DDG 1000 Class Support Equipment														
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				
1) DDG 1000 CLASS SUPPORT EQUIPMENT																																		
1.1) DDG 1000 Data Center																																		
	1	2017	NAVY	1	0	1	-	-	-	-	-	1																				0		
1.2) DDG 1001 Data Center																																		
	2	2019	NAVY	1	0	1	A1																										0	
1.3) DDG 1002 Data Center																																		
	3	2019	NAVY	1	0	1		A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	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 2019 Navy									Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0947 / DDG 1000 Class Support Equipment				Aggregated Items: DDG 1000 Class Support Equipment			
MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
		MSR For 2019	1-8-5 For 2019	MAX For 2019	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	Raytheon - Portsmouth, RI	1	2	3	0	0	18	18	0	0	18	18
2	Raytheon - Portsmouth, RI				0	0	18	18	0	0	0	0
3	Raytheon - Portsmouth, RI	1	2	3	0	0	18	18	0	0	18	18

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

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

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment							P-1 Line Item Number / Title: 0950 / Strategic Platform Support Equip					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	107.732	14.571	15.812	22.254	0.000	22.254	12.358	13.770	7.457	10.191	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	107.732	14.571	15.812	22.254	0.000	22.254	12.358	13.770	7.457	10.191	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	107.732	14.571	15.812	22.254	0.000	22.254	12.358	13.770	7.457	10.191	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 2019 funding request was reduced by \$.115 million to reflect the Department of Navy's effort to support the Office of Management and Budget directed reforms for Efficiency and Effectiveness that include a lean, accountable, more efficient government. Funding in this P-1 line provides for the procurement of tactical Hull, Mechanical and Electrical (HM&E) equipment that will be installed aboard ships and in the facilities at the TRIDENT Refit Facility (TRIREFAC), Navy Intermediate Maintenance Facility (NAVIMFAC) and TRIDENT Training Facility (TRITRAFAC). The TRIDENT Refit Facility and Navy Intermediate Maintenance Facility (NAVIMFAC) are dedicated shore support facilities providing a full range of industrial support. The TRITRAFAC provides the crews for the OHIO Class (SSBN/SSGN) Submarines with realistic training experience in operating and maintaining shipboard equipment. The growth in this line is due to procurement and installation of OHIO CLASS Ship Control Station Obsolete Equipment Replacement (SCS OER). In FY18 to FY19 the number of procurements increases from 1 to 3 and Ship installations increase from 3 to 4. Also, FY19 includes installation of shore based systems, including associated design and engineering, at maintenance activities (LAB) and Trident training facilities (TTFs). These are necessary to ensure ship control system can be maintained and crews are trained on new ship control systems. [P40A / HH009 EQUIPMENT HM&E & SWS/SS ALTERATION]: This provides for the replacement of obsolete equipment on board of OHIO Class Submarines and at dedicated Shore Support Facilities (TLCSF, TRITRAFAC (B), NAVIMFAC (B), TRITRAFAC (KB), TRIREFAC (KB), Major Shore Spares (MSS)). These alterations are necessary in order to replace obsolete/outdated equipment with new equipment to maintain or increase mission capabilities, replace or modify components/systems which have proven to be unreliable, correct design and safety problems and reduce fleet maintenance burdens. Funds provide for multiple efforts to ensure that the OHIO Class Ship Control Subsystem, both hardware and software components, support the extended life of the OHIO Class submarine platforms. In FY99 and again in FY06 a NUWC KEYPORT study identified a number of obsolete electronic components in the Ship Control Station (27 out of 107) that are no longer available. The FY06 study recommended that the Ship Control ISEA develop and execute a program that would address the near term obsolescence issues and ensure the continued availability of the subsystem in the out years. Alterations and actions are done at the lowest practicable and authorized level (taking into consideration urgency, priority, capability, capacity and cost). Alterations to OHIO Class Submarines are scheduled for accomplishment at the TRIREFAC, Kings Bay, NAVIMFAC, Bangor, and at Naval Shipyards during Depot Availabilities. This requires equipment procurement and installation, technical planning, training, and associated resources. This line provides for material procurement necessary to install the required alterations to OHIO Class Submarines. Commencing in FY19 funding is provided for upgrading Laboratory facilities at Electric Boar Corporation and Naval Undersea Warfare Center Newport Rhode Island and at the Trident Training Facilities in Kings Bay Georgia and Bangor Washington. This upgrade is required so the Ship Control Laboratory facilities and the Trident Training Facilities are current with installed Ohio Class Ship Control Systems. This upgrade completes in FY21. Additionally, this line provides for the utilization of specially trained and dedicated installation teams to ensure accelerated and correct installation of complex and high priority alterations within specific time frames. Provided are comprehensive program management and execution, including planning, direction, control, installation, integration, and coordination of specifically selected safety related, mission												

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment		P-1 Line Item Number / Title: 0950 / Strategic Platform Support Equip
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
enhancement or technical HM&E alterations. Starting in FY12, SSBN Strategic Weapon Support Systems (SWSS) OER Upgrades are planned for Ventilation Alarm Monitoring Panel (VAMP) and the Missile Heating and Cooling Proportional Controllers. Both upgrades are required to support Strategic Systems Programs' Strategic Weapon Systems (SWS) Integration program (Mod6/Mod7) which replaces the current Launcher, Fire Control and Weapons Support electronics. Starting in FY16, two SSBN/GN OER transducer upgrade programs are planned, one for Hovering Transducers and the second for MDD/ MHC Differential Pressure Transducers. Both transducer types are estimated to be out of spares by 2018 and will require form/fit/function replacement. The Hovering System on both SSBNs and SSGNs is experiencing obsolescence issues due to aging technology and terminated vendor component production as of 2000. The Missile Drying and Dehumidification (MDD) system and Missile Heating and Cooling (MHC) system on both SSBNs and SSGNs provides a stable temperature and humidity environment for the missile tubes, and has similar obsolescence issues, with terminated vendor component production as of 2009. Starting in FY19, the SSBN Strategic Weapon Support Systems (SWSS) program includes a Sustainability effort, which maintains the SWSS surveillance, modernization and obsolescence management program. This line monitors and predicts SWSS obsolescence issues and plans for program modernization to address predicted obsolescence, reliability or maintainability issues to ensure OHIO class submarines continue to meet mission requirements to end of life until replaced by the COLUMBIA Class. Items anticipated may include; Harvesting Critical Components, Reverse Engineering, Form-Fit-Function replacements, providing lifetime buys, providing component-level SHIPALTs (reactive). [P40A / HH012 EQUIPMENT HM&E TRIDENT ENGINEERING AVAILABILITY]: TRIDENT Engineered Availability (EA) support funding is required to provide replacement and contingency material to support the critical path schedule during the SSBN 726 Class Submarine Engineered Availabilities (EAs) commencing in FY93 and continuing through the operational life of the submarine. This program also provides funding for Quality Assurance (QA) oversight and certification by Supervisor Of Shipbuilding, Groton (SOS Groton) of SHIPALTS performed by Electric Boat Corporation (EB), provides funding to the Planning Yard for Configuration Record change and Liaison Action Request processing, and Selected Record Drawings mark ups for SHIPALT-related work, accomplishment of availability work package requirements assigned to the Planning Yard such as Design Review hanger inspections, Integrated Logistic Support product updates, and Configuration Overhaul Planning Product development and distribution for each availability, and funding for NUWC Newport system-level final end-to-end certification test support and deck plate coordination of Alteration Installation Team (AIT) work during Engineered Refueling Overhauls (ERO), Extended Refit Periods (ERPs), and Maintenance & Modernization Periods (MMPs). [P40A / HH0GN SSGN MODIFICATIONS]: Provides for procurement of SSGN unique system components that will be installed during planned modernization periods. Also provides funding to perform integrated testing of these unique systems to ensure satisfactory operation with other HM&E and Combat Systems. Funds are provided for procurement of Submarine Special Operations Forces (SOF) unique system components that will be installed during planned modernization periods. [P40A / SOF HH0GN]: Funds are provided for installation of Submarine Special Operations Forces (SOF) unique system components. Starting in FY19, additional funding is needed for the Modernized Dry Deck Shelter (DDS) Project and will be used to complete the SHIPALT production or Initial Fit-up of the Modernized DDS on the target (yet to be defined) VA Class host submarine. [P40A / SWSS VAMP & Proportional Controllers]: Strategic Weapons System Support Systems (SWSS) OER issues involving the Ventilation Alarm and Monitoring Panel (VAMP) and the Missile Heating and Cooling Proportional Controllers. Both upgrades are required to support Strategic Programs' SWS Integration program (Mod6/Mod7) which replaces the current Launcher, Fire Control and Weapons Support electronics.		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy								Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment						P-1 Line Item Number / Title: 0950 / Strategic Platform Support Equip				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Strategic Platform Support Equip	P-5a			- / 93.400	- / 6.554	- / 10.569	- / 12.010	- / -	- / 12.010
P-3a	2 / EQUIPMENT HM&E SWS/SS ALTERATION SCS SSBN/SSGN PROC (TBD)				- / 14.332	- / 8.017	- / 5.243	- / 10.244	- / 0.000	- / 10.244
P-40	Total Gross/Weapon System Cost				- / 107.732	- / 14.571	- / 15.812	- / 22.254	- / 0.000	- / 22.254
Exhibits Schedule					FY 2020	FY 2021	FY 2022	FY 2023	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	Strategic Platform Support Equip	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	2 / EQUIPMENT HM&E SWS/SS ALTERATION SCS SSBN/SSGN PROC (TBD)				- / 3.204	- / 5.931	- / 1.488	- / 0.000	- / 0.000	- / 48.459
P-40	Total Gross/Weapon System Cost				- / 12.358	- / 13.770	- / 7.457	- / 10.191	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: FY19 growth in this line is due to procurement and installation of OHIO CLASS Ship Control Station Obsolete Equipment Replacement (SCS OER). In FY18 to FY19 the number of procurements increases from 1 to 3 and Ship installations increase from 3 to 4. FY19 includes installation of shore based systems, including associated design and engineering, at maintenance activities (LAB) and Trident training facilities (TTFs). These are necessary to ensure ship control system can be maintained and crews are trained on new ship control systems. Starting in FY19, the SSBN Strategic Weapon Support Systems (SWSS) program includes a Sustainability effort, which maintains the SWSS surveillance, modernization and obsolescence management program. FY19 increase for SOF ALTS represents additional funding for enhanced SOF capability and will be used for dry deck shelter fit up.										

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9							P-1 Line Item Number / Title: 0950 / Strategic Platform Support Equip								Aggregated Items Title: Strategic Platform Support Equip					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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) HH009 EQUIPMENT HM&E & SWS/SS ALTERATION																				
1.1) SCS PY SHIPALT DEV	A		-	-	35.703	-	-	0.223	-	-	2.928	-	-	0.820	-	-	-	-	-	0.820
1.2) SWSS SSBN/SSGN Hovering System DP Transducers ⁽¹⁾	A		-	-	1.000	-	-	0.680	-	-	0.680	-	-	-	-	-	-	-	-	-
1.3) SWSS MDD/MHC Differential Pressure Transducers	A		-	-	1.000	-	-	0.800	-	-	0.800	-	-	-	-	-	-	-	-	-
1.4) Ship Control Station OER Material ⁽²⁾	A		-	-	0.860	-	-	0.100	-	-	0.670	-	-	1.567	-	-	-	-	-	1.567
1.5) SCS OER Lab/TTF Equip Upgrade ⁽³⁾	A		-	-	-	-	-	-	-	-	-	-	-	3.311	-	-	-	-	-	3.311
1.6) SWSS Sustainability	A		-	-	-	-	-	-	-	-	-	-	-	0.950	-	-	-	-	-	0.950
Subtotal: 1) HH009 EQUIPMENT HM&E & SWS/SS ALTERATION			-	-	38.563	-	-	1.803	-	-	5.078	-	-	6.648	-	-	-	-	-	6.648
2) HH012 EQUIPMENT HM&E TRIDENT ENGINEERING AVAILABILITY																				
2.1) SHIPALT INSTALLATION AND ENGINEERING SERVICES	A		-	-	16.774	-	-	0.805	-	-	1.949	-	-	1.384	-	-	-	-	-	1.384
2.2) CCS EQUIPMENT REFURBISHMENT & SHIPBOARD TESTING	A		-	-	14.256	-	-	0.651	-	-	1.578	-	-	1.121	-	-	-	-	-	1.121
2.3) HM&E EQUIPMENT REFURBISHMENT & SHIPBOARD TESTING	A		-	-	9.250	-	-	0.460	-	-	1.114	-	-	0.791	-	-	-	-	-	0.791
Subtotal: 2) HH012 EQUIPMENT HM&E TRIDENT ENGINEERING AVAILABILITY			-	-	40.280	-	-	1.916	-	-	4.641	-	-	3.296	-	-	-	-	-	3.296
3) HH0GN SSGN MODIFICATIONS																				
3.1) SOF UPGRADES	A		-	-	3.300	-	-	0.538	-	-	0.548	-	-	0.558	-	-	-	-	-	0.558
Subtotal: 3) HH0GN SSGN MODIFICATIONS			-	-	3.300	-	-	0.538	-	-	0.548	-	-	0.558	-	-	-	-	-	0.558
4) SOF HH0GN																				
4.1) SOF ALTS	A		-	-	2.766	-	-	0.297	-	-	0.302	-	-	1.508	-	-	-	-	-	1.508
Subtotal: 4) SOF HH0GN			-	-	2.766	-	-	0.297	-	-	0.302	-	-	1.508	-	-	-	-	-	1.508
5) SWSS VAMP & Proportional Controllers																				

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9							P-1 Line Item Number / Title: 0950 / Strategic Platform Support Equip							Aggregated Items Title: Strategic Platform Support Equip						
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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)
5.1) Procurement & Install ^(†)	A		530,687.50	16	8.491	500,000.00	4	2.000	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 5) SWSS VAMP & Proportional Controllers			-	-	8.491	-	-	2.000	-	-	-	-	-	-	-	-	-	-	-	-
Total			-	-	93.400	-	-	6.554	-	-	10.569	-	-	12.010	-	-	-	-	-	12.010

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) Starting in FY16, two SSBN/GN OER transducer upgrade programs are planned, one for Hovering Transducers and the second for MDD/MHC Differential Pressure Transducers. Both transducer types are estimated to be out of spares by 2018 and will require form/fit/function replacement. The Hovering System on both SSBNs and SSGNs is experiencing obsolescence issues due to aging technology and terminated vendor component production as of 2000. The Missile Drying and Dehumidification (MDD) system and Missile Heating and Cooling (MHC) system on both SSBNs and SSGNs provides a stable temperature and humidity environment for the missile tubes, and has similar obsolescence issues, with terminated vendor component production as of 2009.
- (2) Ship Control Station OER Material funds identified are for ancillary material required to set up for and support installations. Starting in FY16, these funds are moved from installation to procurement and shown as separate line items to better reflect the required funding profile.
- (3) The SCS OER Lab/TTF Equip Upgrade is required to ensure shore maintenance and training facility equipment is similar to ship installation in order support operational issues and ensure training at the TTFs matches the latest installed configuration of Ship Control Systems in the fleet.

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Exhibit P-5a, Procurement History and Planning: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0950 / Strategic Platform Support Equip						Aggregated Items: Strategic Platform Support Equip			
Item Number / Title [DODIC]	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date	
5) SWSS VAMP & Proportional Controllers													
5.1) Procurement & Install		2017	ELECTRIC BOAT / NEW LONDON	C / CPFF	NAVSEA	Feb 2017	Jun 2017	4	500,000.00	N			

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0950 / Strategic Platform Support Equip					Modification Number / Title: 2 / EQUIPMENT HM&E SWS/SS ALTERATION SCS SSBN/SSGN PROC		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	14.332	8.017	5.243	10.244	0.000	10.244	3.204	5.931	1.488	0.000	0.000	48.459
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	14.332	8.017	5.243	10.244	0.000	10.244	3.204	5.931	1.488	0.000	0.000	48.459
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	14.332	8.017	5.243	10.244	0.000	10.244	3.204	5.931	1.488	0.000	0.000	48.459
<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 Ship Control Obsolete Equipment Replacement - Perform multiple efforts to ensure that the OHIO Class Ship Control Subsystem, both hardware and software components, support the extended life of the OHIO Class submarine platforms. Note: Production lead-time for Ship Control System OER is 17 months except for the 2 units procured in FY12. These units in addition to the normal procurement lead-time will be used in the testing and certification program of the design of this safety of ship system. This testing and certification adds an additional 22 months of lead-time. These two units procured in FY12 have a total lead-time of 39 months and will be installed in FY16. [EQUIPMENT HM&E SWS/SS ALTERATION SCS SSBN/SSGN PROC] Installations of this SHIPALT are accomplished during SSBN refits, SSBN Extended Refit Periods (ERP), SSGN Major Maintenance Periods (MMP), and SSBN Engineered Refueling Overhauls (ERO). Installations do not complete until the availability completes. Thus the installation duration ranges from 90 days for refit installations to 821 days for ERO installations. By design, Ship Control ShipAlt TRID 588B is conjunctive with SSBN Modernization ShipAlt TRID601, which upgrades SSBNs to TI-16 sonar/fire control systems. The TI-16 fielding plan was accelerated by OPNAV and sonar/fire control PARMS. This additional funding for Ship Control ShipAlt TRID 588B allows accelerating installations into FY19, FY21 & FY22 to match the current TI-16 installation scheduled for SSBNs. Installation costs vary due to the number of installations, location and type of installation, e.g. ship or facility. Procurement lead time for SCS OER equipment is 17 months. The three procurements in FY19 support installations in 4th quarter FY20 (1 install) and 2nd quarter FY21 (2 installs) based on ship schedules. [SCS SSBN/SSGN INSTALLATION DSA] DSA costs vary due to the number of installations, location and type of installation, e.g. ship or facility.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0950 / Strategic Platform Support Equip					Modification Number / Title: 2 / EQUIPMENT HM&E SWS/SS ALTERATION SCS SSBN/SSGN PROC			
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> EQUIPMENT HM&E SWS/SS ALTERATION SCS SSBN/SSGN PROC													
B Kits													
Recurring													
1.1.1) EQUIPMENT HM&E SWS/SS ALTERATION SCS SSBN/SSGN PROC - NonOrganic	9 / 9.848	3 / 4.326	1 / 1.471	3 / 4.497	- / -	3 / 4.497	1 / 1.527	1 / 1.556	- / -	- / -	- / -	18 / 23.225	
1.1.2) SCS SSBN/SSGN INSTALLATION DSA - NonOrganic	- / 0.284	- / 0.031	- / 0.280	- / 0.317	- / -	- / 0.317	- / 0.162	- / 0.247	- / 0.084	- / -	- / -	- / 1.405	
<i>Subtotal: Recurring</i>	- / 10.132	- / 4.357	- / 1.751	- / 4.814	- / -	- / 4.814	- / 1.689	- / 1.803	- / 0.084	- / -	- / 0.000	- / 24.630	
<i>Subtotal: EQUIPMENT HM&E SWS/SS ALTERATION SCS SSBN/SSGN PROC</i>	9 / 10.132	3 / 4.357	1 / 1.751	3 / 4.814	- / -	3 / 4.814	1 / 1.689	1 / 1.803	- / 0.084	- / -	- / -	18 / 24.630	
<i>Subtotal: Procurement, All Modification Items</i>	- / 10.132	- / 4.357	- / 1.751	- / 4.814	- / -	- / 4.814	- / 1.689	- / 1.803	- / 0.084	- / -	- / 0.000	- / 24.630	
Installation													
<i>Modification Item 1 of 1:</i> EQUIPMENT HM&E SWS/SS ALTERATION SCS SSBN/SSGN PROC	- / 4.200	- / 3.660	- / 3.492	- / 5.430	- / 0.000	- / 5.430	- / 1.515	- / 4.128	- / 1.404	- / 0.000	- / 0.000	- / 23.829	
<i>Subtotal: Installation</i>	- / 4.200	- / 3.660	- / 3.492	- / 5.430	- / -	- / 5.430	- / 1.515	- / 4.128	- / 1.404	- / -	- / 0.000	- / 23.829	
Total													
Total Cost (Procurement + Support + Installation)	14.332	8.017	5.243	10.244	0.000	10.244	3.204	5.931	1.488	0.000	0.000	48.459	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0950 / Strategic Platform Support Equip										Modification Number / Title: 2 / EQUIPMENT HM&E SWS/SS ALTERATION SCS SSBN/SSGN PROC											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: EQUIPMENT HM&E SWS/SS ALTERATION SCS SSBN/SSGN PROC																															
Manufacturer Information																															
Manufacturer Name: Electric Boat															Manufacturer Location: Groton, CT																
Administrative Leadtime (in Months): 0															Production Leadtime (in Months): 17																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates		Jul 2017				Feb 2018				Feb 2019				Mar 2020				Oct 2020													
Delivery Dates		Dec 2018				Jul 2019				Jul 2020				Aug 2021				Mar 2022													
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: EQUIPMENT HM&E SWS/SS ALTERATION SCS SSBN/SSGN PROC																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		3 / 4.200		3 / 3.660		3 / 3.492		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		9 / 11.352							
FY 2017		- / -		- / -		- / -		3 / 4.073		0 / 0.000		3 / 4.073		- / -		- / -		- / -		- / -		0 / 0.000		3 / 4.073							
FY 2018		- / -		- / -		- / -		1 / 1.357		0 / 0.000		1 / 1.357		- / -		- / -		- / -		- / -		0 / 0.000		1 / 1.357							
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		1 / 1.515		2 / 2.752		- / -		- / -		0 / 0.000		3 / 4.267							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 1.376		- / -		- / -		0 / 0.000		1 / 1.376							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 1.404		- / -		0 / 0.000		1 / 1.404							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		3 / 4.200		3 / 3.660		3 / 3.492		4 / 5.430		0 / 0.000		4 / 5.430		1 / 1.515		3 / 4.128		1 / 1.404		- / -		0 / 0.000		18 / 23.829							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	3	-	1	2	-	2	1	-	-	1	2	-	1	-	-	-	-	1	-	2	-	-	1	-	1	-	-	-	-	-	18
Out	-	-	-	1	-	-	1	1	1	1	-	3	-	1	-	2	1	1	-	1	2	-	-	1	-	1	-	-	-	-	18

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment							P-1 Line Item Number / Title: 0955 / Deep Subm Sys Proj (DSSP) Equip					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	43.032	0.806	4.178	3.629	0.000	3.629	2.909	2.971	3.029	3.091	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	43.032	0.806	4.178	3.629	0.000	3.629	2.909	2.971	3.029	3.091	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	43.032	0.806	4.178	3.629	0.000	3.629	2.909	2.971	3.029	3.091	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: FY2019 through FY2023 funding levels support procurement of Submarine Rescue Hoses and planned upgrades to Submarine Rescue Diving and Recompression System (SRDRS). The Submarine Escape and Rescue Program, formerly Deep Submergence Systems Program (DSSP), is responsible for the procurement, life cycle support, and improvement and modernization of assigned platforms and programs. The Submarine Escape and Rescue Program provides for the procurement of equipment to support the establishment and maintenance of fleet capability for a number of programs which perform submarine search and rescue, inspection, and object location and retrieval from the ocean environment. Submarine Escape and Rescue procurements replace obsolete, non-supportable equipment and subsystems through phased improvement and modernization projects. These projects may include special ship alterations, field change kits, and design corrections. SOURCES: The sources for these acquisitions are limited. There are few private companies actively engaged in deep ocean engineering and even fewer with the specialized experience, knowledge, and facilities to meet the exacting requirement of the Submarine Escape and Rescue Program. Accordingly, sole source contracts are sometimes required; however, where possible, contracting via open competition is utilized. [P40A / HJ030 - RESCUE SUPPORT EQUIPMENT]: INTERVENTION SYSTEMS (REMOTELY OPERATED VEHICLE (ROV)/SRDRS/SUBMARINE RESCUE CHAMBER (SRC) Intervention assets (ROV) are required to support the SRDRS and SRC world-wide rescue capability mission. Intervention assets are used to clear disabled submarines seating surfaces, attach the SRC downhaul cable, attach salvage fittings, deliver emergency life support stores, and assess disabled submarines. The ROV is an unmanned system that reduces operational risk from the previous Intervention Assets that were a manned sytem, ATMOSPHERIC DIVING SYSTEM (ADS); full transition from ADS to ROV is pending availability of funding for a second ROV. SRC provides shallow water rescue capability. SRDRS is the deep water rescue system and will be delivered in increments. The Submarine Rescue System-Rescue Capable System (SRS-RCS) completed OPEVAL in FY08 and is currently the deep water rescue ready vehicle for the U.S. Navy. The final component of SRDRS is the Transfer Under Pressure (TUP) or Submarine Rescue System-Submarine Decompression System (SRS-SDS). Full Operational Capability (FOC) was delayed due to efforts associated with Pressurized Rescue Module (PRM) restoration to service; Initial Operating Capability (IOC) in FY2018.												

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy								Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment						P-1 Line Item Number / Title: 0955 / Deep Subm Sys Proj (DSSP) Equip				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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	Deep Subm Sys Proj (DSSP) Equip				- / 43.032	- / 0.806	- / 4.178	- / 3.629	- / -	- / 3.629
P-40	Total Gross/Weapon System Cost				- / 43.032	- / 0.806	- / 4.178	- / 3.629	- / 0.000	- / 3.629
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										

Justification:
 The FY 2019 funding request was reduced by \$0.056 million to reflect the Department of Navy's effort to support the Office of Management and Budget directed reforms for Efficiency and Effectiveness that include a lean, accountable, more efficient government.

FY2019 through FY2023 funding levels support procurement of Submarine Rescue Hoses and planned upgrades to Submarine Rescue Diving and Recompression System (SRDRS). FY19 funding is required to complete planned upgrades to the Remote Operated Vehicle (ROV) and SRDRS.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9						P-1 Line Item Number / Title: 0955 / Deep Subm Sys Proj (DSSP) Equip									Aggregated Items Title: Deep Subm Sys Proj (DSSP) Equip					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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) HJ030 - RESCUE SUPPORT EQUIPMENT																				
1.1) SRC Materials	A		-	-	3.114	-	-	0.260	-	-	0.266	-	-	0.271	-	-	-	-	-	0.271
1.2) SRDRS System Upgrade and Upgrade Spares ⁽¹⁾	A		-	-	39.918	-	-	0.546	-	-	3.912	-	-	3.358	-	-	-	-	-	3.358
Subtotal: 1) HJ030 - RESCUE SUPPORT EQUIPMENT			-	-	43.032	-	-	0.806	-	-	4.178	-	-	3.629	-	-	-	-	-	3.629
Total			-	-	43.032	-	-	0.806	-	-	4.178	-	-	3.629	-	-	-	-	-	3.629

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

Footnotes:

⁽¹⁾ Funding reductions in FY2017 were rephased during PB17 into FY2018 and FY2019.

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy								Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment						P-1 Line Item Number / Title: 0960 / CG Modernization						
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	2,569.518	319.920	306.050	276.446	0.000	276.446	302.185	221.839	139.942	26.378	2.529	4,164.807
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	2,569.518	319.920	306.050	276.446	0.000	276.446	302.185	221.839	139.942	26.378	2.529	4,164.807
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	2,569.518	319.920	306.050	276.446	0.000	276.446	302.185	221.839	139.942	26.378	2.529	4,164.807
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	3.588	0.680	1.248	-	1.248	-	1.833	2.023	2.220	Continuing	Continuing
Flyaway Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-
Description:												
The FY 2019 funding request was reduced by \$3.016 million to reflect the Department of Navy's effort to support the Office of Management and Budget directed reforms for Efficiency and Effectiveness that include a lean, accountable, more efficient government.												
Modernized Ticonderoga Class cruisers are multi-mission, large surface combatants which will operate as the Air Defense Commander platform for Carrier Strike Groups, as units of Surface Action Groups, in support of Marine Amphibious Task Forces, or independently in multi-threat environments that include air, surface and subsurface threats. These ships respond to Low Intensity Conflict, Coastal and Littoral Offshore Warfare, and joint mission scenarios as well as open ocean conflict, providing and augmenting power projection and forward presence. These ships conduct Air, Surface and Undersea Dominance, Land Attack, and Force Protection missions. The Ticonderoga Class is currently executing the CG Modernization (Mod) Program which upgrades combat systems; command, control, communications, computers, and intelligence (C4I) systems; and hull, mechanical, and electrical (HM&E) systems to achieve an extended service life and pace the multi-mission threats. Ticonderoga Class is also executing service life extension program (SLEP) fir C4I and combat systems.												
Current FY19 budget supports continued installations, engineering support services, and programmatic support for USS Cowpens (CG 63), USS Gettysburg (CG 64), USS Chosin (CG 65), USS Vicksburg (CG 69), USS Cape St George (CG 71), USS Anzio (CG 68), and USS Hue City (CG 66).												
[P40A / CC013 - INSTALLATION / DSA / AIT]: Provides Planning Yard Design Services Allocation (DSA) (design, advance planning, and kitted material), MSR installations and AIT installation support.												
[P40A / CC014 - CONJUNCTIVE COMBAT SYSTEM ALTERATIONS]: Conjunctive Combat System Alterations includes design integration, equipment procurement, recurring equipment engineering, equipment integration, and ILS.												
[P40A / CC019 - SERVICE LIFE EXTENSION PROGRAM (SLEP)]: Funding provides for modernization, annual sustainment, engineering support and upgrades to extend the service life of legacy Ticonderoga Class Cruisers.												
[P3A / CC001 - SPQ-9B UPGRADE]: Procures SPQ-9B for all CG Modernization ships including equipment procurement, recurring equipment engineering, equipment integration, and Integrated Logistics.												

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment		P-1 Line Item Number / Title: 0960 / CG Modernization
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
[P3A - 2 / CC003 - COOPERATIVE ENGAGEMENT CAPABILITIES (CEC)]: Procures Cooperative Engagement Capability (CEC) for all ships including equipment procurement, recurring equipment engineering, equipment integration, and ILS. [P3A - 3 / CC004 - AN/SQQ-89 A(V) 15 PROCUREMENT]: Procures AN/SQQ-89 A(V) 15 for Baseline 3 and 4 ships including equipment procurement, recurring equipment engineering, equipment integration, and ILS. [P3A - 4 / CC007 - AEGIS WEAPONS SYSTEM (AWS) UPGRADE PROCUREMENT]: Procures AEGIS Weapons System (AWS) upgrade for all ships including equipment procurement, recurring equipment engineering, equipment integration, and ILS. [P3A - 5 / CC008 - VERTICAL LAUNCH SYSTEM (VLS)]: Procures Vertical Launch System (VLS) upgrade for all ships including equipment procurement, recurring equipment engineering, equipment integration, and ILS. [P3A - 6 / CC010 - MK34 UPGRADE]: Procures MK34 Gun Weapon System (GWS) upgrade for all ships including equipment procurement, recurring equipment engineering, equipment integration, and ILS. [P3A - 7 / CC011 - INTEGRATED SHIP CONTROLS (ISC)]: Procures Smartship Integrated Ship Controls (ISC) for all ships requiring upgrade including equipment procurement, recurring equipment engineering, equipment integration, and ILS. [P3A - 8 / CC015 - MULTI-MISSION SIGPRO]: Procures Multi-Mission Signal Processor (MMSP) including equipment procurement, recurring equipment engineering, equipment integration, and ILS.		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy								Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment						P-1 Line Item Number / Title: 0960 / CG Modernization				
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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	CG Modernization				- / 768.847	- / 150.920	- / 166.334	- / 220.714	- / -	- / 220.714
P-3a	1 / CC001 - SPQ-9B UPGRADE (TBD)				- / 155.049	- / 15.400	- / 10.686	- / 2.700	- / 0.000	- / 2.700
P-3a	2 / CC003 - COOPERATIVE ENGAGEMENT CAPABILITIES (CEC) (TBD)				- / 121.279	- / 9.000	- / 7.817	- / 3.062	- / 0.000	- / 3.062
P-3a	3 / CC004 - AN/SQQ-89 A(V) 15 PROCUREMENT (TBD)				- / 228.922	- / 45.400	- / 33.027	- / 9.211	- / 0.000	- / 9.211
P-3a	4 / CC007 - AEGIS WEAPONS SYSTEM (AWS) UPGRADE PROCUREMENT (TBD)				- / 702.112	- / 58.400	- / 51.304	- / 21.204	- / 0.000	- / 21.204
P-3a	5 / CC008 - VERTICAL LAUNCH SYSTEM (VLS) (TBD)				- / 235.039	- / 9.800	- / 6.187	- / 1.110	- / 0.000	- / 1.110
P-3a	6 / CC010 - MK34 UPGRADE (TBD)				- / 169.737	- / 12.000	- / 12.501	- / 6.132	- / 0.000	- / 6.132
P-3a	7 / CC011 - INTEGRATED SHIP CONTROLS (ISC) (TBD)				- / 91.753	- / 19.000	- / 18.194	- / 12.313	- / 0.000	- / 12.313
P-3a	8 / CC015 - MULTI-MISSION SIGPRO (TBD)				- / 66.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	9 / CC016 - SPY-1B VARIANCE TRANSMITTER UPGRADES (TBD)				- / 30.780	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-40	Total Gross/Weapon System Cost				- / 2,569.518	- / 319.920	- / 306.050	- / 276.446	- / 0.000	- / 276.446
Exhibits Schedule					FY 2020	FY 2021	FY 2022	FY 2023	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	CG Modernization				- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / CC001 - SPQ-9B UPGRADE (TBD)				- / 2.452	- / 0.279	- / 1.168	- / 0.000	- / 0.000	- / 187.734
P-3a	2 / CC003 - COOPERATIVE ENGAGEMENT CAPABILITIES (CEC) (TBD)				- / 2.861	- / 0.294	- / 1.378	- / 0.000	- / 0.000	- / 145.691
P-3a	3 / CC004 - AN/SQQ-89 A(V) 15 PROCUREMENT (TBD)				- / 8.700	- / 0.845	- / 4.160	- / 0.000	- / 0.000	- / 330.265
P-3a	4 / CC007 - AEGIS WEAPONS SYSTEM (AWS) UPGRADE PROCUREMENT (TBD)				- / 19.730	- / 2.517	- / 9.294	- / 0.000	- / 0.000	- / 864.561
P-3a	5 / CC008 - VERTICAL LAUNCH SYSTEM (VLS) (TBD)				- / 1.040	- / 0.110	- / 0.500	- / 0.000	- / 1.101	- / 254.887
P-3a	6 / CC010 - MK34 UPGRADE (TBD)				- / 5.746	- / 0.602	- / 2.750	- / 0.000	- / 1.428	- / 210.896
P-3a	7 / CC011 - INTEGRATED SHIP CONTROLS (ISC) (TBD)				- / 52.802	- / 38.361	- / 9.033	- / 0.000	- / 0.000	- / 241.456
P-3a	8 / CC015 - MULTI-MISSION SIGPRO (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 66.000
P-3a	9 / CC016 - SPY-1B VARIANCE TRANSMITTER UPGRADES (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 30.780
P-40	Total Gross/Weapon System Cost				- / 302.185	- / 221.839	- / 139.942	- / 26.378	- / 2.529	- / 4,164.807
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown. Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										
Justification: FY 2019 requests funding for \$66.4 million to procure four shipsets of C4I systems on CG 67/70/72/73										

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment		P-1 Line Item Number / Title: 0960 / CG Modernization
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		

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9						P-1 Line Item Number / Title: 0960 / CG Modernization									Aggregated Items Title: CG Modernization ⁽¹⁾					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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) CC002 - SARTIS																				
1.1) SARTIS EQUIPMENT	A		227.091	11	2.498	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) CC002 - SARTIS			-	-	2.498	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2) CC005 - SGS/CDLMS																				
2.1) SGS/CDLMS EQUIPMENT	A		820.143	7	5.741	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.2) SGS/CDLMS ENGINEERING SERVICES	A		-	-	0.700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 2) CC005 - SGS/CDLMS			-	-	6.441	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3) CC012 - VIRGINIA SITES																				
3.1) VIRGINIA SITES	A		-	-	82.028	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 3) CC012 - VIRGINIA SITES			-	-	82.028	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4) CC013 - INSTALLATION / DSA / AIT																				
4.1) INSTALLATION / DSA / AIT	A		-	-	334.062	-	-	85.220	-	-	126.034	-	-	114.014	-	-	-	-	-	114.014
Subtotal: 4) CC013 - INSTALLATION / DSA / AIT			-	-	334.062	-	-	85.220	-	-	126.034	-	-	114.014	-	-	-	-	-	114.014
5) CC014 - CONJUNCTIVE COMBAT SYSTEM ALTERATIONS ⁽²⁾																				
5.1) CONJUNCTIVE COMBAT SYSTEM ALTERATION EQUIPMENT	A		83,934.500	4	335.738	-	-	65.700	-	-	40.300	-	-	106.700	-	-	-	-	-	106.700
Subtotal: 5) CC014 - CONJUNCTIVE COMBAT SYSTEM ALTERATIONS			-	-	335.738	-	-	65.700	-	-	40.300	-	-	106.700	-	-	-	-	-	106.700
6) CC017 - MULTI-MISSION BMD CAPABILITIES																				
6.1) MULTI-MISSION BMD CAPABILITIES EQUIPMENT	A		1,553.333	3	4.660	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 6) CC017 - MULTI-MISSION BMD CAPABILITIES			-	-	4.660	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7) CC018 - MULTI-MISSION SSA/CWI MICROWAVE TUBES																				
7.1) MULTI-MISSION SSA/CWI MICROWAVE TUBE EQUIPMENT	A		1,140.000	3	3.420	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 7) CC018 - MULTI-MISSION SSA/CWI MICROWAVE TUBES			-	-	3.420	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total			-	-	768.847	-	-	150.920	-	-	166.334	-	-	220.714	-	-	-	-	-	220.714
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 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0960 / CG Modernization	Aggregated Items Title: CG Modernization ⁽¹⁾
Footnotes: ⁽¹⁾ (1) The Consolidated Appropriations Act, 2015, H.R. 8110 re-appropriated and extended the Ship Modernization Operations and Sustainment Fund (SMOSF) to provide for costs associated with the continued operations and modernization of eleven cruisers. (2) FY15 and FY16 funding was provided via SMOSF transfer for procurements and installation for CG 63 Cowpens, CG 64 Gettysburg, CG 65 Chosin, and CG 69 Vicksburg. (3) SMOSF was rescinded in FY17 and placed in the Navy budget. (4) Funding for FY18 - FY23 is shifting from PB17 submit to 2-4-6 CG Modernization. (5) Conjunctive Funding / CC014 in FY19 supports procurement of four shipsets of C4I systems for CG 67 Shiloh, CG 70 Lake Erie, CG 72 Vela Gulf, and CG 73 Port Royal for FY21 installations. (6) CG service life extension program (SLEP)/ CC019 in FY20-FY23 supports service life extension for AWS, GWS, SPQ-9, C4I, SPY, and Undersea Warfare Systems on CG 52-57. ⁽²⁾ Increase in funding in FY 19 from PB 18 due to procurement of four shipsets of C4I systems on CG 67/70/72/73		

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Exhibit P-3a, Individual Modification: PB 2019 Navy						Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0960 / CG Modernization				Modification Number / Title: 1 / CC001 - SPQ-9B UPGRADE			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	155.049	15.400	10.686	2.700	0.000	2.700	2.452	0.279	1.168	0.000	0.000	187.734
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	155.049	15.400	10.686	2.700	0.000	2.700	2.452	0.279	1.168	0.000	0.000	187.734
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	155.049	15.400	10.686	2.700	0.000	2.700	2.452	0.279	1.168	0.000	0.000	187.734
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Replaces the existing AN/SPQ-9A heavyweight (HW) Radar Set with the AN/SPQ-9B lightweight (LW) Radar Set. Supports associated DSA and Planning for installation.

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0960 / CG Modernization					Modification Number / Title: 1 / CC001 - SPQ-9B UPGRADE			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: [No Model Specified]				Modification Type: TBD				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: CC001 - SPQ-9B UPGRADE													
B Kits													
Recurring													
1.1.1) CC001 - SPQ-9B EQUIPMENT - NonOrganic ⁽³⁾	14 / 122.109	2 / 13.845	1 / 7.140	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	17 / 143.094	
1.1.2) CC001 - SPQ-9B ENGINEERING SERVICES - Organic	- / 10.903	- / 1.555	- / 0.800	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 13.258	
<i>Subtotal: Recurring</i>	- / 133.012	- / 15.400	- / 7.940	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 156.352	
<i>Subtotal: CC001 - SPQ-9B UPGRADE</i>	14 / 133.012	2 / 15.400	1 / 7.940	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	17 / 156.352	
<i>Subtotal: Procurement, All Modification Items</i>	- / 133.012	- / 15.400	- / 7.940	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 156.352	
Installation													
Modification Item 1 of 1: CC001 - SPQ-9B UPGRADE	- / 22.037	- / 0.000	- / 2.746	- / 2.700	- / 0.000	- / 2.700	- / 2.452	- / 0.279	- / 1.168	- / 0.000	- / 0.000	- / 31.382	
<i>Subtotal: Installation</i>	- / 22.037	- / -	- / 2.746	- / 2.700	- / -	- / 2.700	- / 2.452	- / 0.279	- / 1.168	- / -	- / 0.000	- / 31.382	
Total													
Total Cost (Procurement + Support + Installation)	155.049	15.400	10.686	2.700	0.000	2.700	2.452	0.279	1.168	0.000	0.000	187.734	

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Exhibit P-3a, Individual Modification: PB 2019 Navy											Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9											P-1 Line Item Number / Title: 0960 / CG Modernization											Modification Number / Title: 1 / CC001 - SPQ-9B UPGRADE										
ID Code (A=Service Ready, B=Not Service Ready) :																MDAP/MAIS Code:																
Modification Item 1 of 1: CC001 - SPQ-9B UPGRADE																																
Manufacturer Information																																
Manufacturer Name: NORTHROP GRUMMAN SYSTEMS CORP.														Manufacturer Location: Melville, New York																		
Administrative Leadtime <i>(in Months)</i> : 6														Production Leadtime <i>(in Months)</i> : 18																		
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023						
Contract Dates		Jul 2017				Jul 2018																										
Delivery Dates		Jan 2019				Jan 2020																										
Installation Information																																
Method of Implementation: [none specified]:: Installation Name: CC001 - SPQ-9B EQUIPMENT																																
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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		10 / 22.037		- / -		2 / 2.646		2 / 2.350		0 / 0.000		2 / 2.350		- / -		- / -		- / -		- / -		0 / 0.000		14 / 27.033								
FY 2017		- / -		- / -		0 / 0.100		0 / 0.350		0 / 0.000		0 / 0.350		2 / 2.352		- / -		- / -		- / -		0 / 0.000		2 / 2.802								
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.100		0 / 0.279		1 / 1.168		- / -		0 / 0.000		1 / 1.547								
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
Total		10 / 22.037		- / -		2 / 2.746		2 / 2.700		0 / 0.000		2 / 2.700		2 / 2.452		0 / 0.279		1 / 1.168		- / -		0 / 0.000		17 / 31.382								
Installation Schedule																																
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot	
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
In	10	-	-	-	-	-	2	-	-	-	2	-	-	-	2	-	-	-	-	-	-	-	1	-	-	-	-	-	-			
Out	10	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2	-	-	-	2	-	-	-	-	-	-	-	1			
Footnotes: ⁽³⁾ FY15 combat systems procurements for the CG 63 Cowpens, CG 64 Gettysburg. FY16 procurements for CG 65 USS Chosin and CG 69 USS Vicksburg were funded by SMOSF. Initial DSA costs were funded by SMOSF and funded the SSRA in FY16 for CG 63 USS Cowpens and CG 64 USS Gettysburg. FY17 Combat System procurement for the CG 68 Anzio and CG71 Cape St. George. Funding for FY18 - FY23 is shifting from PB17 submit to 2-4-6 CG Modernization. Installation was executed incrementally: a portion of the work was accomplished in prior SSRAs and completed during the EDSRA.																																

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0960 / CG Modernization	Modification Number / Title: 1 / CC001 - SPQ-9B UPGRADE
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
In/Outs are reflecting the EDSRA since that is when the ship is being reactivated following the EDSRA. The Consolidation Appropriations Act, 2015, H.R. 8110 re-appropriated and extended the Ship Modernization ,Operations and Sustainment fund (SMOSF) mandated procuring this system ahead of need.		

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0960 / CG Modernization					Modification Number / Title: 2 / CC003 - COOPERATIVE ENGAGEMENT CAPABILITIES (CEC)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	121.279	9.000	7.817	3.062	0.000	3.062	2.861	0.294	1.378	0.000	0.000	145.691
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	121.279	9.000	7.817	3.062	0.000	3.062	2.861	0.294	1.378	0.000	0.000	145.691
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	121.279	9.000	7.817	3.062	0.000	3.062	2.861	0.294	1.378	0.000	0.000	145.691
<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>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Procure and install Cooperative Engagement Capability (CEC). Supports DSA and Planning for installation.												

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0960 / CG Modernization						Modification Number / Title: 2 / CC003 - COOPERATIVE ENGAGEMENT CAPABILITIES (CEC)			
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: CC003 - COOPERATIVE ENGAGEMENT CAPABILITIES (CEC)</i>													
B Kits													
Recurring													
1.1.1) CC003 - CEC EQUIPMENT - NonOrganic ⁽⁴⁾	14 / 90.518	2 / 8.091	1 / 4.180	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	17 / 102.789	
1.1.2) CC003 - CEC ENGINEERING SERVICES - NonOrganic	- / 8.329	- / 0.909	- / 0.470	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 9.708	
<i>Subtotal: Recurring</i>	<i>- / 98.847</i>	<i>- / 9.000</i>	<i>- / 4.650</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 0.000</i>	<i>- / 112.497</i>	
<i>Subtotal: CC003 - COOPERATIVE ENGAGEMENT CAPABILITIES (CEC)</i>	<i>14 / 98.847</i>	<i>2 / 9.000</i>	<i>1 / 4.650</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>17 / 112.497</i>	
<i>Subtotal: Procurement, All Modification Items</i>	<i>- / 98.847</i>	<i>- / 9.000</i>	<i>- / 4.650</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 0.000</i>	<i>- / 112.497</i>	
Installation													
<i>Modification Item 1 of 1: CC003 - COOPERATIVE ENGAGEMENT CAPABILITIES (CEC)</i>	<i>- / 22.432</i>	<i>- / 0.000</i>	<i>- / 3.167</i>	<i>- / 3.062</i>	<i>- / 0.000</i>	<i>- / 3.062</i>	<i>- / 2.861</i>	<i>- / 0.294</i>	<i>- / 1.378</i>	<i>- / 0.000</i>	<i>- / 0.000</i>	<i>- / 33.194</i>	
<i>Subtotal: Installation</i>	<i>- / 22.432</i>	<i>- / -</i>	<i>- / 3.167</i>	<i>- / 3.062</i>	<i>- / -</i>	<i>- / 3.062</i>	<i>- / 2.861</i>	<i>- / 0.294</i>	<i>- / 1.378</i>	<i>- / -</i>	<i>- / 0.000</i>	<i>- / 33.194</i>	
Total													
Total Cost (Procurement + Support + Installation)	121.279	9.000	7.817	3.062	0.000	3.062	2.861	0.294	1.378	0.000	0.000	145.691	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0960 / CG Modernization										Modification Number / Title: 2 / CC003 - COOPERATIVE ENGAGEMENT CAPABILITIES (CEC)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: CC003 - COOPERATIVE ENGAGEMENT CAPABILITIES (CEC)																															
Manufacturer Information																															
Manufacturer Name: RAYTHEON															Manufacturer Location: ST. PETERSBURG, FL																
Administrative Leadtime (in Months): 6															Production Leadtime (in Months): 18																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates		Jul 2017				Jul 2018																									
Delivery Dates		Jan 2019				Jan 2020																									
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: CC003 - CEC EQUIPMENT																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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		10 / 22.432		- / -		2 / 3.067		2 / 2.773		0 / 0.000		2 / 2.773		- / -		- / -		- / -		- / -		0 / 0.000		14 / 28.272							
FY 2017		- / -		- / -		0 / 0.100		0 / 0.289		0 / 0.000		0 / 0.289		2 / 2.756		- / -		- / -		- / -		0 / 0.000		2 / 3.145							
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.105		0 / 0.294		1 / 1.378		- / -		0 / 0.000		1 / 1.777							
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		10 / 22.432		- / -		2 / 3.167		2 / 3.062		0 / 0.000		2 / 3.062		2 / 2.861		0 / 0.294		1 / 1.378		- / -		0 / 0.000		17 / 33.194							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	10	-	-	-	-	-	2	-	-	-	2	-	-	-	2	-	-	-	-	-	-	-	1	-	-	-	-	-	-		
Out	10	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2	-	-	-	2	-	-	-	-	-	-	-	1		
Footnotes: ⁽⁴⁾ FY15 combat systems procurements for the CG 63 Cowpens, CG 64 Gettysburg, CG 65 Chosin, and CG 69 Vicksburg. Initial DSA costs were funded by SMOSF and funded the SSRA in FY16 for CG 63 USS Cowpens and CG 64 USS Gettysburg. FY17 Combat Systems procurements for CG 68 Anzio and CG 71 Cape St. George. Funding for FY18 - FY23 is shifting from PB17 submit to 2-4-6 CG Modernization.																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0960 / CG Modernization	Modification Number / Title: 2 / CC003 - COOPERATIVE ENGAGEMENT CAPABILITIES (CEC)
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
Installation was executed incrementally: a portion of the work was accomplished in prior SSRAs and completed during the EDSRA. The Consolidation Appropriations Act, 2015, H.R. 8110 re-appropriated and extended the Ship Modernization ,Operations and Sustainment fund (SMOSF) mandated procuring this system ahead of need.		

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0960 / CG Modernization					Modification Number / Title: 3 / CC004 - AN/SQQ-89 A(V) 15 PROCUREMENT		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	228.922	45.400	33.027	9.211	0.000	9.211	8.700	0.845	4.160	0.000	0.000	330.265
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	228.922	45.400	33.027	9.211	0.000	9.211	8.700	0.845	4.160	0.000	0.000	330.265
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	228.922	45.400	33.027	9.211	0.000	9.211	8.700	0.845	4.160	0.000	0.000	330.265
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Procure and Install AN/SQQ-89 A(V) 15 for CG Modernization. Supports DSA and Planning for installation.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0960 / CG Modernization						Modification Number / Title: 3 / CC004 - AN/SQQ-89 A(V) 15 PROCUREMENT			
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> CC004 - AN/SQQ-89 A(V) 15 PROCUREMENT													
B Kits													
Recurring													
1.1.1) CC004 - AN/SQQ-89 A(V) 15 EQUIPMENT - NonOrganic ⁽⁵⁾	14 / 170.111	2 / 40.815	1 / 21.140	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	17 / 232.066	
1.1.2) CC004 - AN/SQQ-89 A(V) 15 ENGINEERING SERVICES - NonOrganic	- / 41.290	- / 4.585	- / 2.380	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 48.255	
<i>Subtotal: Recurring</i>	- / 211.401	- / 45.400	- / 23.520	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 280.321	
<i>Subtotal: CC004 - AN/SQQ-89 A(V) 15 PROCUREMENT</i>	14 / 211.401	2 / 45.400	1 / 23.520	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	17 / 280.321	
<i>Subtotal: Procurement, All Modification Items</i>	- / 211.401	- / 45.400	- / 23.520	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 280.321	
Installation													
<i>Modification Item 1 of 1:</i> CC004 - AN/SQQ-89 A(V) 15 PROCUREMENT	- / 17.521	- / 0.000	- / 9.507	- / 9.211	- / 0.000	- / 9.211	- / 8.700	- / 0.845	- / 4.160	- / 0.000	- / 0.000	- / 49.944	
<i>Subtotal: Installation</i>	- / 17.521	- / -	- / 9.507	- / 9.211	- / -	- / 9.211	- / 8.700	- / 0.845	- / 4.160	- / -	- / 0.000	- / 49.944	
Total													
Total Cost (Procurement + Support + Installation)	228.922	45.400	33.027	9.211	0.000	9.211	8.700	0.845	4.160	0.000	0.000	330.265	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy												Date: February 2018																			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0960 / CG Modernization										Modification Number / Title: 3 / CC004 - AN/SQQ-89 A(V) 15 PROCUREMENT											
ID Code (A=Service Ready, B=Not Service Ready) :														MDAP/MAIS Code:																	
Modification Item 1 of 1: CC004 - AN/SQQ-89 A(V) 15 PROCUREMENT																															
Manufacturer Information																															
Manufacturer Name: LOCKHEED MARTIN														Manufacturer Location: SYRACUSE, NY																	
Administrative Leadtime (in Months): 6														Production Leadtime (in Months): 18																	
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates		Jul 2017				Jul 2018																									
Delivery Dates		Jan 2019				Jan 2020																									
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: CC004 - AN/SQQ-89 A(V) 15 EQUIPMENT																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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		10 / 17.521		- / -		2 / 9.208		2 / 8.373		0 / 0.000		2 / 8.373		- / -		- / -		- / -		- / -		0 / 0.000		14 / 35.102							
FY 2017		- / -		- / -		0 / 0.299		0 / 0.838		0 / 0.000		0 / 0.838		2 / 8.399		- / -		- / -		- / -		0 / 0.000		2 / 9.536							
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.301		0 / 0.845		1 / 4.160		- / -		0 / 0.000		1 / 5.306							
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		10 / 17.521		- / -		2 / 9.507		2 / 9.211		0 / 0.000		2 / 9.211		2 / 8.700		0 / 0.845		1 / 4.160		- / -		0 / 0.000		17 / 49.944							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	10	-	-	-	-	-	2	-	-	-	2	-	-	-	-	2	-	-	-	-	-	-	1	-	-	-	-	-	-	-	17
Out	10	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2	-	-	-	2	-	-	-	-	-	-	-	1	-	17
Footnotes: ⁽⁵⁾ FY15 combat systems procurements for the CG 63 Cowpens, CG 64 Gettysburg, CG 65 Chosin, and CG 69 Vicksburg. Initial DSA costs were funded by SMOSF and funded the SSRA in FY16 for CG 63 USS Cowpens and CG 64 USS Gettysburg. FY17 Combat System procurement for the CG 68 Anzio and CG 71 Cape St. George. Funding for FY18 - FY23 is shifting from PB17 submit to 2-4-6 CG																															

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0960 / CG Modernization	Modification Number / Title: 3 / CC004 - AN/SQQ-89 A(V) 15 PROCUREMENT
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
Modernization. Installation was executed incrementally: a portion of the work was accomplished in prior SSRAs and completed during the EDSRA. The Consolidation Appropriations Act, 2015, H.R. 8110 re-appropriated and extended the Ship Modernization ,Operations and Sustainment fund (SMOSF) mandated procuring this system ahead of need.		

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy						Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0960 / CG Modernization				Modification Number / Title: 4 / CC007 - AEGIS WEAPONS SYSTEM (AWS) UPGRADE PROCUREMENT			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	702.112	58.400	51.304	21.204	0.000	21.204	19.730	2.517	9.294	0.000	0.000	864.561
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	702.112	58.400	51.304	21.204	0.000	21.204	19.730	2.517	9.294	0.000	0.000	864.561
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	702.112	58.400	51.304	21.204	0.000	21.204	19.730	2.517	9.294	0.000	0.000	864.561
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Provides improved computing and display capabilities, faster processing, and greater track capacity. Supports DSA and Planning for installation.

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0960 / CG Modernization						Modification Number / Title: 4 / CC007 - AEGIS WEAPONS SYSTEM (AWS) UPGRADE PROCUREMENT			
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> CC007 - AEGIS WEAPONS SYSTEM (AWS) UPGRADE PROCUREMENT													
B Kits													
Recurring													
1.1.1) CC007 - AWS EQUIPMENT - NonOrganic ⁽⁶⁾	14 / 463.718	2 / 52.502	1 / 24.220	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	17 / 540.440	
1.1.2) CC007 - AWS ENGINEERING SERVICES - NonOrganic	- / 37.549	- / 5.898	- / 2.720	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 46.167	
<i>Subtotal: Recurring</i>	- / 501.267	- / 58.400	- / 26.940	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 586.607	
<i>Subtotal: CC007 - AEGIS WEAPONS SYSTEM (AWS) UPGRADE PROCUREMENT</i>	14 / 501.267	2 / 58.400	1 / 26.940	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	17 / 586.607	
<i>Subtotal: Procurement, All Modification Items</i>	- / 501.267	- / 58.400	- / 26.940	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 586.607	
Installation													
<i>Modification Item 1 of 1:</i> CC007 - AEGIS WEAPONS SYSTEM (AWS) UPGRADE PROCUREMENT	- / 200.845	- / 0.000	- / 24.364	- / 21.204	- / 0.000	- / 21.204	- / 19.730	- / 2.517	- / 9.294	- / 0.000	- / 0.000	- / 277.954	
<i>Subtotal: Installation</i>	- / 200.845	- / -	- / 24.364	- / 21.204	- / -	- / 21.204	- / 19.730	- / 2.517	- / 9.294	- / -	- / 0.000	- / 277.954	
Total													
Total Cost (Procurement + Support + Installation)	702.112	58.400	51.304	21.204	0.000	21.204	19.730	2.517	9.294	0.000	0.000	864.561	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0960 / CG Modernization										Modification Number / Title: 4 / CC007 - AEGIS WEAPONS SYSTEM (AWS) UPGRADE PROCUREMENT											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: CC007 - AEGIS WEAPONS SYSTEM (AWS) UPGRADE PROCUREMENT																															
Manufacturer Information																															
Manufacturer Name: LOCKHEED MARTIN															Manufacturer Location: SYRACUSE, NY																
Administrative Leadtime (in Months): 6															Production Leadtime (in Months): 20																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates		May 2017				May 2018																									
Delivery Dates		Jan 2019				Jan 2020																									
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: CC007 - AWS EQUIPMENT																															
Installation Cost		Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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		10 / 200.845		- / -		2 / 23.107		2 / 18.705		0 / 0.000		2 / 18.705		- / -		- / -		- / -		- / -		0 / 0.000		14 / 242.657							
FY 2017		- / -		- / -		0 / 1.257		0 / 2.499		0 / 0.000		0 / 2.499		2 / 18.599		- / -		- / -		- / -		0 / 0.000		2 / 22.355							
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		0 / 1.131		0 / 2.517		1 / 9.294		- / -		0 / 0.000		1 / 12.942							
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		10 / 200.845		- / -		2 / 24.364		2 / 21.204		0 / 0.000		2 / 21.204		2 / 19.730		0 / 2.517		1 / 9.294		- / -		0 / 0.000		17 / 277.954							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	10	-	-	-	-	-	2	-	-	-	2	-	-	-	2	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	17
Out	10	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2	-	-	-	2	-	-	-	-	-	-	-	1	-	17
Footnotes:																															
⁽⁶⁾ FY15 combat systems procurements for the CG 63 Cowpens, CG 64 Gettysburg, CG 65 Chosin, and CG 69 Vicksburg. Initial DSA costs were funded by SMOSF and funded the SSRA in FY16 for CG 63 USS Cowpens and CG 64 USS Gettysburg. FY17 Combat System procurements for the CG 68 Anzio and CG 71 Cape St. George. Funding for FY18 - FY23 is shifting funds from PB17 submit to 2-4-6 CG																															

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0960 / CG Modernization	Modification Number / Title: 4 / CC007 - AEGIS WEAPONS SYSTEM (AWS) UPGRADE PROCUREMENT
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
Modernization. Installation was executed incrementally: a portion of the work was accomplished in prior SSRAs and completed during the EDSRA. The Consolidation Appropriations Act, 2015, H.R. 8110 re-appropriated and extended the Ship Modernization ,Operations and Sustainment fund (SMOSF) mandated procuring this system ahead of need.		

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0960 / CG Modernization						Modification Number / Title: 5 / CC008 - VERTICAL LAUNCH SYSTEM (VLS)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	235.039	9.800	6.187	1.110	0.000	1.110	1.040	0.110	0.500	0.000	1.101	254.887
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	235.039	9.800	6.187	1.110	0.000	1.110	1.040	0.110	0.500	0.000	1.101	254.887
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	235.039	9.800	6.187	1.110	0.000	1.110	1.040	0.110	0.500	0.000	1.101	254.887
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Provides VLS upgrades one module forward and one module aft to support evolved sea sparrow missile system capability. Supports DSA and Planning for installation.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0960 / CG Modernization						Modification Number / Title: 5 / CC008 - VERTICAL LAUNCH SYSTEM (VLS)			
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: CC008 - VERTICAL LAUNCH SYSTEM (VLS)													
B Kits													
Recurring													
1.1.1) CC008 - VLS EQUIPMENT - NonOrganic ⁽⁷⁾	14 / 212.426	2 / 8.810	1 / 4.520	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	17 / 225.756	
1.1.2) CC008 - VLS ENGINEERING SERVICES - Organic	- / 7.329	- / 0.990	- / 0.510	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.101	- / 9.930	
Subtotal: Recurring	- / 219.755	- / 9.800	- / 5.030	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.101	- / 235.686	
Subtotal: CC008 - VERTICAL LAUNCH SYSTEM (VLS)	14 / 219.755	2 / 9.800	1 / 5.030	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.101	17 / 235.686	
Subtotal: Procurement, All Modification Items	- / 219.755	- / 9.800	- / 5.030	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.101	- / 235.686	
Installation													
Modification Item 1 of 1: CC008 - VERTICAL LAUNCH SYSTEM (VLS)	- / 15.284	- / 0.000	- / 1.157	- / 1.110	- / 0.000	- / 1.110	- / 1.040	- / 0.110	- / 0.500	- / 0.000	- / 0.000	- / 19.201	
Subtotal: Installation	- / 15.284	- / -	- / 1.157	- / 1.110	- / -	- / 1.110	- / 1.040	- / 0.110	- / 0.500	- / -	- / 0.000	- / 19.201	
Total													
Total Cost (Procurement + Support + Installation)	235.039	9.800	6.187	1.110	0.000	1.110	1.040	0.110	0.500	0.000	1.101	254.887	

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Exhibit P-3a, Individual Modification: PB 2019 Navy												Date: February 2018																			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0960 / CG Modernization										Modification Number / Title: 5 / CC008 - VERTICAL LAUNCH SYSTEM (VLS)											
ID Code (A=Service Ready, B=Not Service Ready) :														MDAP/MAIS Code:																	
Modification Item 1 of 1: CC008 - VERTICAL LAUNCH SYSTEM (VLS)																															
Manufacturer Information																															
Manufacturer Name: LOCKHEED MARTIN														Manufacturer Location: MOORESTOWN, NJ																	
Administrative Leadtime (in Months): 6														Production Leadtime (in Months): 18																	
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates		Jul 2017				Jul 2018																									
Delivery Dates		Jan 2019				Jan 2020																									
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: CC008 - VLS EQUIPMENT																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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		10 / 15.284		- / -		2 / 1.117		2 / 1.005		0 / 0.000		2 / 1.005		- / -		- / -		- / -		- / -		0 / 0.000		14 / 17.406							
FY 2017		- / -		- / -		0 / 0.040		0 / 0.105		0 / 0.000		0 / 0.105		2 / 1.000		- / -		- / -		- / -		0 / 0.000		2 / 1.145							
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.040		0 / 0.110		1 / 0.500		- / -		0 / 0.000		1 / 0.650							
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		10 / 15.284		- / -		2 / 1.157		2 / 1.110		0 / 0.000		2 / 1.110		2 / 1.040		0 / 0.110		1 / 0.500		- / -		0 / 0.000		17 / 19.201							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	10	-	-	-	-	-	2	-	-	-	2	-	-	-	2	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	17
Out	10	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2	-	-	-	2	-	-	-	-	-	-	-	1	-	17
Footnotes: ⁽⁷⁾ FY15 combat systems procurements for the CG 63 Cowpens, CG 64 Gettysburg, CG 65 Chosin, and CG 69 Vicksburg. Initial DSA costs were funded by SMOSF and funded the SSRA in FY16 for CG 63 USS Cowpens and CG 64 USS Gettysburg. FY17 Combat System procurements for the CG 68 Anzio and CG 71 Cape St. George. Funding for FY18 - FY23 is shifting funds from PB17 submit to 2-4-6 CG																															

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LI 0960 - CG Modernization
Navy

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Exhibit P-3a, Individual Modification: PB 2019 Navy						Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0960 / CG Modernization				Modification Number / Title: 6 / CC010 - MK34 UPGRADE			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	169.737	12.000	12.501	6.132	0.000	6.132	5.746	0.602	2.750	0.000	1.428	210.896
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	169.737	12.000	12.501	6.132	0.000	6.132	5.746	0.602	2.750	0.000	1.428	210.896
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	169.737	12.000	12.501	6.132	0.000	6.132	5.746	0.602	2.750	0.000	1.428	210.896
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Procures the MK34 Mod 4 Gun Weapon System (GWS) to replace the existing MK86 Gun Fire Control System. Supports DSA and Planning for installation.

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Exhibit P-3a, Individual Modification: PB 2019 Navy									Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0960 / CG Modernization					Modification Number / Title: 6 / CC010 - MK34 UPGRADE				
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: [No Model Specified]				Modification Type: TBD				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: CC010 - MK34 UPGRADE													
B Kits													
Recurring													
1.1.1) CC010 - MK34 EQUIPMENT - NonOrganic ⁽⁸⁾	14 / 110.591	2 / 10.788	1 / 5.560	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	17 / 126.939	
1.1.2) CC010 - MK34 ENGINEERING SERVICES - NonOrganic	- / 21.601	- / 1.212	- / 0.630	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.428	- / 24.871	
<i>Subtotal: Recurring</i>	- / 132.192	- / 12.000	- / 6.190	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.428	- / 151.810	
<i>Subtotal: CC010 - MK34 UPGRADE</i>	14 / 132.192	2 / 12.000	1 / 6.190	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.428	17 / 151.810	
<i>Subtotal: Procurement, All Modification Items</i>	- / 132.192	- / 12.000	- / 6.190	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.428	- / 151.810	
Installation													
Modification Item 1 of 1: CC010 - MK34 UPGRADE	- / 37.545	- / 0.000	- / 6.311	- / 6.132	- / 0.000	- / 6.132	- / 5.746	- / 0.602	- / 2.750	- / 0.000	- / 0.000	- / 59.086	
<i>Subtotal: Installation</i>	- / 37.545	- / -	- / 6.311	- / 6.132	- / -	- / 6.132	- / 5.746	- / 0.602	- / 2.750	- / -	- / 0.000	- / 59.086	
Total													
Total Cost (Procurement + Support + Installation)	169.737	12.000	12.501	6.132	0.000	6.132	5.746	0.602	2.750	0.000	1.428	210.896	

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Exhibit P-3a, Individual Modification: PB 2019 Navy											Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9											P-1 Line Item Number / Title: 0960 / CG Modernization											Modification Number / Title: 6 / CC010 - MK34 UPGRADE										
ID Code (A=Service Ready, B=Not Service Ready) :																MDAP/MAIS Code:																
Modification Item 1 of 1: CC010 - MK34 UPGRADE																																
Manufacturer Information																																
Manufacturer Name: Various														Manufacturer Location: Various																		
Administrative Leadtime <i>(in Months)</i> : 6														Production Leadtime <i>(in Months)</i> : 18																		
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023						
Contract Dates		Jul 2017				Jul 2018																										
Delivery Dates		Jan 2019				Jan 2020																										
Installation Information																																
Method of Implementation: [none specified]:: Installation Name: CC010 - MK34 EQUIPMENT																																
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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		10 / 37.545		- / -		2 / 6.111		2 / 5.535		0 / 0.000		2 / 5.535		- / -		- / -		- / -		- / -		0 / 0.000		14 / 49.191								
FY 2017		- / -		- / -		0 / 0.200		0 / 0.597		0 / 0.000		0 / 0.597		2 / 5.540		- / -		- / -		- / -		0 / 0.000		2 / 6.337								
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.206		0 / 0.602		1 / 2.750		- / -		0 / 0.000		1 / 3.558								
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
Total		10 / 37.545		- / -		2 / 6.311		2 / 6.132		0 / 0.000		2 / 6.132		2 / 5.746		0 / 0.602		1 / 2.750		- / -		0 / 0.000		17 / 59.086								
Installation Schedule																																
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot	
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
In	10	-	-	-	-	-	2	-	-	-	2	-	-	-	2	-	-	-	-	-	-	-	1	-	-	-	-	-	-			
Out	10	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2	-	-	-	2	-	-	-	-	-	-	-	1			
Footnotes: ⁽⁸⁾ FY15 combat systems procurements for the CG 63 Cowpens, CG 64 Gettysburg, CG 65 Chosin, and CG 69 Vicksburg. Initial DSA costs were funded by SMOSF and funded the SSRA in FY16 for CG 63 USS Cowpens and CG 64 USS Gettysburg. FY17 Combat System procurements for the CG 68 Anzio and CG 71 Cape St. George. Funding for FY18 - FY23 is shifting funds from PB17 submit to 2-4-6 CG Modernization. Installation was executed incrementally: a portion of the work was accomplished in prior SSRAs and completed during the EDSRA. The Consolidation Appropriations Act, 2015, H.R. 8110 re-appropriated and extended the Ship Modernization ,Operations and Sustainment fund (SMOSF) mandated procuring this system ahead of need.																																

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0960 / CG Modernization						Modification Number / Title: 7 / CC011 - INTEGRATED SHIP CONTROLS (ISC)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	91.753	19.000	18.194	12.313	0.000	12.313	52.802	38.361	9.033	0.000	0.000	241.456
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	91.753	19.000	18.194	12.313	0.000	12.313	52.802	38.361	9.033	0.000	0.000	241.456
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	91.753	19.000	18.194	12.313	0.000	12.313	52.802	38.361	9.033	0.000	0.000	241.456
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Procure and Install Smartship Integrated Ship Control (ISC) for CG Modernization.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0960 / CG Modernization					Modification Number / Title: 7 / CC011 - INTEGRATED SHIP CONTROLS (ISC)			
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> CC011 - INTEGRATED SHIP CONTROLS (ISC)													
B Kits													
Recurring													
1.1.1) CC011 - ISC EQUIPMENT - NonOrganic ⁽⁹⁾	14 / 51.705	2 / 17.081	1 / 6.840	- / -	- / -	- / -	4 / 30.560	- / -	- / -	- / -	- / -	21 / 106.186	
1.1.2) CC011 - ISC ENGINEERING SERVICES - Organic	- / 2.771	- / 1.919	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 4.690	
<i>Subtotal: Recurring</i>	- / 54.476	- / 19.000	- / 6.840	- / -	- / -	- / -	- / 30.560	- / -	- / -	- / -	- / 0.000	- / 110.876	
<i>Subtotal: CC011 - INTEGRATED SHIP CONTROLS (ISC)</i>	14 / 54.476	2 / 19.000	1 / 6.840	- / -	- / -	- / -	4 / 30.560	- / -	- / -	- / -	- / -	21 / 110.876	
<i>Subtotal: Procurement, All Modification Items</i>	- / 54.476	- / 19.000	- / 6.840	- / -	- / -	- / -	- / 30.560	- / -	- / -	- / -	- / 0.000	- / 110.876	
Installation													
<i>Modification Item 1 of 1:</i> CC011 - INTEGRATED SHIP CONTROLS (ISC)	- / 37.277	- / 0.000	- / 11.354	- / 12.313	- / 0.000	- / 12.313	- / 22.242	- / 38.361	- / 9.033	- / 0.000	- / 0.000	- / 130.580	
<i>Subtotal: Installation</i>	- / 37.277	- / -	- / 11.354	- / 12.313	- / -	- / 12.313	- / 22.242	- / 38.361	- / 9.033	- / -	- / 0.000	- / 130.580	
Total													
Total Cost (Procurement + Support + Installation)	91.753	19.000	18.194	12.313	0.000	12.313	52.802	38.361	9.033	0.000	0.000	241.456	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0960 / CG Modernization										Modification Number / Title: 7 / CC011 - INTEGRATED SHIP CONTROLS (ISC)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: CC011 - INTEGRATED SHIP CONTROLS (ISC)																															
Manufacturer Information																															
Manufacturer Name: HENSCHEL															Manufacturer Location: NEWBURY PORT, MA																
Administrative Leadtime <i>(in Months)</i> : 6															Production Leadtime <i>(in Months)</i> : 6																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates		Jan 2018				Jan 2019																									
Delivery Dates		Jan 2019				Jan 2020																									
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: CC011 - ISC EQUIPMENT																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		To Complete		Total							
		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>									
Prior Years		6 / 37.277		- / -		1 / 10.604		1 / 9.431		0 / 0.000		1 / 9.431		- / -		- / -		- / -		- / -		6 / 0.000		14 / 57.312							
FY 2017		- / -		- / -		0 / 0.750		0 / 2.132		0 / 0.000		0 / 2.132		2 / 19.222		- / -		- / -		- / -		0 / 0.000		2 / 22.104							
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.798		0 / 2.239		1 / 9.033		- / -		0 / 0.000		1 / 12.070							
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2020		- / -		- / -		- / -		0 / 0.750		0 / 0.000		0 / 0.750		0 / 2.222		4 / 36.122		- / -		- / -		0 / 0.000		4 / 39.094							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		6 / 37.277		- / -		1 / 11.354		1 / 12.313		0 / 0.000		1 / 12.313		2 / 22.242		4 / 38.361		1 / 9.033		- / -		6 / 0.000		21 / 130.580							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	6	-	-	-	-	-	1	-	-	-	1	-	-	-	2	-	-	4	-	-	-	-	1	-	-	-	-	-	-	6	21
Out	6	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	6	-	-	-	-	-	-	-	1	6	21
Footnotes: ⁽⁹⁾ FY15 ISC procurements for the CG63 USS Cowpens and CG69 USS Vicksburg. Initial DSA costs were funded by SMOSF and funded the SSRA in FY16 for CG63 USS Cowpens. FY17 Combat System procurements for the CG 68 Anzio and CG 71 Cape St. George. Funding for FY18 - FY23 is shifting funds from PB17 submit to 2-4-6 CG Modernization. Installation was executed incrementally: a portion of																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0960 / CG Modernization	Modification Number / Title: 7 / CC011 - INTEGRATED SHIP CONTROLS (ISC)
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
the work was accomplished in prior SSRAs and completed during the EDSRA. The Consolidation Appropriations Act, 2015, H.R. 8110 re-appropriated and extended the Ship Modernization ,Operations and Sustainment fund (SMOSF) mandated procuring this system ahead of need.		

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Exhibit P-3a, Individual Modification: PB 2019 Navy						Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0960 / CG Modernization				Modification Number / Title: 8 / CC015 - MULTI-MISSION SIGPRO			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	66.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	66.000
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	66.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	66.000
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	66.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	66.000
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Replaces existing AN/SPY-1B/B(V) MIL-STANDARD Signal Processor with the COTS Multi-Mission SIGPRO set.

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[illegible]

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0960 / CG Modernization	Modification Number / Title: 8 / CC015 - MULTI-MISSION SIGPRO
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
Modification Item 1 of 1: CC015 - MULTI-MISSION SIGPRO		

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0960 / CG Modernization						Modification Number / Title: 9 / CC016 - SPY-1B VARIANCE TRANSMITTER UPGRADES		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	30.780	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	30.780
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	30.780	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	30.780
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	30.780	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	30.780
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Provides upgrades to the existing Radio Frequency Monitor (RFM), existing Driver/Pre-Driver (DPD) and modifies existing Deckhouse Wave Guide.												

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LI 0960 - CG Modernization
Navy

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Exhibit P-3a, Individual Modification: PB 2019 Navy					Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9			P-1 Line Item Number / Title: 0960 / CG Modernization			Modification Number / Title: 9 / CC016 - SPY-1B VARIANCE TRANSMITTER UPGRADES	
ID Code (A=Service Ready, B=Not Service Ready) :					MDAP/MAIS Code:		
Modification Item 1 of 1: CC016 - SPY-1B VARIANCE TRANSMITTER UPGRADES							
Manufacturer Information							
Manufacturer Name: Not Specified.					Manufacturer Location: Not Specified..		
Administrative Leadtime (<i>in Months</i>): 6					Production Leadtime (<i>in Months</i>): 18		
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Contract Dates							
Delivery Dates							

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment							P-1 Line Item Number / Title: 0970 / LCAC					
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	115.429	3.090	5.507	3.709	0.000	3.709	5.512	5.456	20.795	21.205	-	180.703
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	115.429	3.090	5.507	3.709	0.000	3.709	5.512	5.456	20.795	21.205	-	180.703
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	115.429	3.090	5.507	3.709	0.000	3.709	5.512	5.456	20.795	21.205	-	180.703
<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 2019 funding request was reduced by \$.236 million to reflect the Department of Navy's effort to support the Office of Management and Budget directed reforms for Efficiency and Effectiveness that include a lean, accountable, more efficient government. The LCAC (Landing Craft, Air Cushion) mission is to transport weapons systems, equipment, cargo, and personnel of the assault elements for the Marine Air/Ground Task Force from ship to shore and across the beach. The LCAC rides on a cushion of air contained in a flexible skirt and is propelled by two aft-mounted, reversible, variable pitch propellers. It is capable of speeds in excess of 40 knots. The LCAC sustainment funding is programmed for equipment procurement using OPN to replace selected engines, personnel transport modules and other equipment that the fleet urgently requires to maintain acceptable levels of readiness. LC001 - LCAC SYSTEM UPGRADES The LCAC System Upgrade Program provides procurement and installation of components required to maintain acceptable levels of fleet operational readiness. LCAC System Upgrade Program will also provide materials to support systems upgrades. Equipment removal and installation will take place at Assault Craft Unit FOUR (ACU 4), ACU 5 and Naval Beach Unit SEVEN (NBU 7). LC002 - ENGINES The ETF-40B engines are enhanced versions of the current TF-40B engines and are being provided with the rest of the SLEP craft. Catastrophic engine failures have highlighted the need for spare engines to reduce operational downtime. Engine procurements are also for Pack Up Kits (PUKs) that accompany fleet deployment of LCACs aboard amphibious ships. Additional ETF 40B Engines will be needed to meet operational needs. LC007 - LIGHTWEIGHT ARMOR The portable lightweight armor system replaces the existing armor system. The portable system can be transported via a Container Express (CONEX) box and provides the fleet ballistic/fragmentation protection to manned spaces on the craft as well as to selected machinery components. LC008 - COLD WEATHER KITS LCACs are required to operate in ambient temperatures as low as 10F. Snow and ice accumulation leads to actuation of a safety system that bypasses the main engine inlet air filtration system and allows engines to draw in unfiltered air. Cold weather kits prevent snow and ice accumulation in the main engines during cold weather operations keeping the craft operational during deployments.												

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment		P-1 Line Item Number / Title: 0970 / LCAC
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		
LC009 - PERSONNEL TRANSPORT MODULE The Personnel Transport Module (PTM) provides the capability of the Landing Craft Air Cushion (LCAC) to transport personnel and protect occupants from the elements inherent in an amphibious environment.		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy								Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment						P-1 Line Item Number / Title: 0970 / LCAC				
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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	LCAC				- / 115.429	- / 3.090	- / 5.507	- / 3.709	- / -	- / 3.709
P-40	Total Gross/Weapon System Cost				- / 115.429	- / 3.090	- / 5.507	- / 3.709	- / 0.000	- / 3.709
*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 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9							P-1 Line Item Number / Title: 0970 / LCAC								Aggregated Items Title: LCAC					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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) LCAC																				
1.1) LC001 LCAC SYSTEMS UPGRADE	A		3,742K	16	59.865	-	-	-	688,122.00	3	2.064	688,150.00	2	1.376	-	-	-	688,150.00	2	1.376
1.2) LC002 ENGINES	A		2,075K	22	45.648	1,490K	1	1.490	-	-	-	-	-	-	-	-	-	-	-	-
1.3) LC007 LIGHTWEIGHT ARMOR	A		610,545.45	11	6.716	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.4) LC008 COLD WEATHER KITS	A		-	-	-	-	-	-	515,000.00	3	1.545	513,000.00	1	0.513	-	-	-	513,000.00	1	0.513
1.5) LC009 PERSONNEL TRANSPORT MODULE	A		800,000.00	4	3.200	800,000.00	2	1.600	949,000.00	2	1.898	910,000.00	2	1.820	-	-	-	910,000.00	2	1.820
Subtotal: 1) LCAC			-	-	115.429	-	-	3.090	-	-	5.507	-	-	3.709	-	-	-	-	-	3.709
Total			-	-	115.429	-	-	3.090	-	-	5.507	-	-	3.709	-	-	-	-	-	3.709

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

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment	P-1 Line Item Number / Title: 0977 / Underwater EOD Programs

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0603654N

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	223.380	34.650	68.270	78.807	9.200	88.007	37.598	38.251	38.989	39.739	-	568.884
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	223.380	34.650	68.270	78.807	9.200	88.007	37.598	38.251	38.989	39.739	-	568.884
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	223.380	34.650	68.270	78.807	9.200	88.007	37.598	38.251	38.989	39.739	-	568.884

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

Initial Spares (<i>\$ in Millions</i>)	-	1.786	5.355	2.424	-	2.424	3.681	3.234	2.156	2.204	Continuing	Continuing
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Underwater Explosive Ordnance Disposal (EOD) program supplies EOD and Maritime Expeditionary forces with the necessary allowance outfitting, and diving and diving-related equipment aligned to fulfill assigned missions that includes Expeditionary Mine Countermeasures (ExMCM), other Maritime Expeditionary missions, and Marine Mammal Systems (MMS) operations. Most equipment must have inherently low acoustic and magnetic signatures to support maritime operations in the vicinity of influence fired ordnance. This funding supports outfitting the Navy's only comprehensive capability in the fleet that can conduct full spectrum detect-to-engage expeditionary MCM missions. Specifically, the Underwater Explosive Ordnance Disposal (EOD) program supports EOD Groups, Units, and Detachments worldwide as well as Mobile Driving and Salvage Units (MDSUs) across the globe.

The establishment of ExMCM Forces under the direction of Commander, US Fleet Forces Command has resulted in an increased inventory requirement for Underwater EOD systems and equipment, with a resultant requirement for re-aligned procurement and fielding priorities. The nature of the missions assigned to EOD and MCM forces under OPNAVINST 3501.97H, Required Operational Capabilities & Projected Operational Environments (ROC/POE), require an aggregated set of systems and equipment to perform the wide range of mine countermeasures, underwater detection, location, investigation, force protection, and neutralization tasks that comprise the mission set. The requirements for the procurement of each of these system suites are articulated in OPNAV approved requirements documents in accordance with DoD Directive 5000.2, SECNAVINST 5000.2E, and the JCIDS process as defined by CJSCINST 3170.01 and defined by the JROC approved ExMCM ICD.

Naval Special Warfare (NSW) - FY 2019 continues procurement of a service-common systems program for Naval Special Warfare's (NSW) Unmanned Undersea Vehicles (UUVs). Naval Special Warfare currently employs UUVs as an intelligence collection platform, building situational awareness of the Undersea Domain, and prior to conducting clandestine operations in support of the highest strategic objectives. UUVs are critical to NSW's undersea component, mission planning for anti-access and area denial (A2AD) environments, and the current fight against violent extremist organizations. The use of open architecture, untethered platforms not only buys down risk to mission and force, but also provides the operational commander a diversified menu of employment options.

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy								Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment						P-1 Line Item Number / Title: 0977 / Underwater EOD Programs				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: 0603654N				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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 / Underwater EOD Programs	P-5a, P-21			- / 223.380	- / 34.650	- / 47.908	- / 41.793	- / 0.000	- / 41.793
P-5	2 / Expeditionary Mine Countermeasures (ExMCM)	P-5a, P-21			- / 0.000	- / 0.000	- / 15.412	- / 33.640	- / 6.700	- / 40.340
P-5	3 / Naval Special Warfare Forces	P-5a			- / 0.000	- / 0.000	- / 4.950	- / 3.374	- / 2.500	- / 5.874
P-40	Total Gross/Weapon System Cost				- / 223.380	- / 34.650	- / 68.270	- / 78.807	- / 9.200	- / 88.007
*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 2019 funding is required to continue procurement and fielding of Underwater EOD program systems and equipment to outfit Expeditionary MCM Companies, EOD and Mobile Salvage units with advanced sensors and hardware required to accomplish their OPNAV approved Required Operational Capability and Projected Operational Environments. This equipment will allow warfighters to detect, locate, investigate, neutralize and render safe unexploded ordnance including improvised explosive devices. The increase in FY2019 supports the Expeditionary MCM companies to support their increase in deployments and Table of Allowance requirements including the MK18 Mod 1 unmanned undersea vehicle (UUV). Additionally, FY2019 funding is required to procure product improvements needed for systems designed and first produced over 40 years ago, as well as the production engineering and integrated logistics support needed for all Expeditionary MCM Companies, EOD Units, and Expeditionary Salvage units. These systems provide the only expeditionary mine interdiction capability in the US Navy. If these forces are not properly outfitted lives may be lost, access to sea lanes of communication could be severed, and risk to transiting forces will be elevated. Specifically, upgrade kits to MK 18 Family of Systems will be procured to provide increased MCM capability through procurement of the Mod 1 Block C upgrade kits; MOTS ROV enhancements will be procured to provide EOD Response capabilities for mine/unexploded ordnance (UXO) target prosecution; improved diver sensor tools will be procured to provide enhanced target detection and localization capabilities; and auxiliary equipment procured that is required to fully outfit systems to perform their intended missions. OCO: Naval Special Warfare (NSW) - FY 2019 will support the replacement of the Mk 18 Mod 1 unmanned undersea vehicle variant that US Navy SEALs currently employ as an intelligence collection platform prior to conducting clandestine operations in support of Operation Inherent Resolve and other missions. Unmanned Undersea Vehicles (UUVs) enable NSW to extend its range of operations from manned undersea vehicles and enable access in diverse and hazardous areas. The MK18 MOD1 SWORDFISH UUV is an unmanned tool that increases the range of NSW influence and reduces risk to US Navy SEALs through increased battle space awareness in maritime environments. Forward deployed NSW personnel are using UUVs in contingency and high-threat environments in operations against violent extremist organizations. Underwater EOD Programs - FY19 OCO funding will provide resources to procure needed Expeditionary Mine Countermeasures (ExMCM) equipment including Underwater Breathing Apparatus (UBAs), Diver held tools, and other associated equipment needed to outfit ExMCM Companies.										

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Exhibit P-5, Cost Analysis: PB 2019 Navy													Date: February 2018								
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9							P-1 Line Item Number / Title: 0977 / Underwater EOD Programs							Item Number / Title [DODIC]: 1 / Underwater EOD Programs							
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:											
Resource Summary				Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
Procurement Quantity <i>(Units in Each)</i>				-			-			-			-			-			-		
Gross/Weapon System Cost <i>(\$ in Millions)</i>				223.380			34.650			47.908			41.793			0.000			41.793		
Less PY Advance Procurement <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Net Procurement (P-1) <i>(\$ in Millions)</i>				223.380			34.650			47.908			41.793			0.000			41.793		
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Total Obligation Authority <i>(\$ in Millions)</i>				223.380			34.650			47.908			41.793			0.000			41.793		
(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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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 - UQ019-MINE WARFARE VULENERABILITY IDENTIFICATION PROGRAM (MIW-VIP) Cost																					
Recurring Cost																					
1.1.1) MIW-VIP ⁽¹⁾	-	-	1.874	-	-	0.304	-	-	0.309	-	-	0.315	-	-	0.000	-	-	0.315			
Subtotal: Recurring Cost	-	-	1.874	-	-	0.304	-	-	0.309	-	-	0.315	-	-	0.000	-	-	0.315			
Subtotal: Hardware - UQ019-MINE WARFARE VULENERABILITY IDENTIFICATION PROGRAM (MIW-VIP) Cost	-	-	1.874	-	-	0.304	-	-	0.309	-	-	0.315	-	-	0.000	-	-	0.315			
Hardware - UQ034 - U/W EOD & MCM SYSTEM/EQUIPMENT Cost																					
Recurring Cost																					
2.1.1) MK 18 MOD 1 UUV ⁽¹⁾	390,833.33	6	2.345	408,400.00	5	2.042	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000			
2.1.2) MK 18 MOD 1 UCMC UUV INCREMENTAL (CIP) Retrofit Kit ^{(1) (2)}	1,060K	10	10.600	1,060K	2	2.120	1,060K	6	6.360	1,060K	2	2.120	-	-	0.000	1,060K	2	2.120			
2.1.3) MK 18 MOD 2 UUV ^{(1) (3)}	968,705.88	17	16.468	990,000.00	2	1.980	990,000.00	8	7.920	1,050K	3	3.150	-	-	0.000	1,050K	3	3.150			
2.1.4) MK 18 MOD 2 RETROFIT KITS ⁽¹⁾	1,820K	17	30.944	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000			
2.1.5) MK 18 MOD 2 RETROFIT KITS (SSAM) ^{(1) (4)}	1,318K	4	5.270	600,000.00	4	2.400	-	-	0.000	600,000.00	6	3.600	-	-	0.000	600,000.00	6	3.600			

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Exhibit P-5, Cost Analysis: PB 2019 Navy													Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9							P-1 Line Item Number / Title: 0977 / Underwater EOD Programs						Item Number / Title [DODIC]: 1 / Underwater EOD Programs					
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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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)
2.1.6) MK18 MOD 2 RETROFIT KITS (ATLAS) ^{(†) (5)}	-	-	0.000	-	-	0.000	400,000.00	15	6.000	400,000.00	22	8.800	-	-	0.000	400,000.00	22	8.800
2.1.7) MK18 MOD 2 RETROFIT KITS (INC J) ^{(†) (6)}	-	-	0.000	-	-	0.000	73,750.00	24	1.770	73,750.00	24	1.770	-	-	0.000	73,750.00	24	1.770
2.1.9) MK 18 MOD2 Overhaul	-	-	0.000	-	-	0.000	-	-	3.382	-	-	0.000	-	-	0.000	-	-	0.000
2.1.10) AUXILLIARY EQUIPMENT (MK 18) ^{(†) (7)}	371,060.61	33	12.245	381,333.33	3	1.144	388,000.00	12	4.656	390,000.00	12	4.680	-	-	0.000	390,000.00	12	4.680
2.1.11) MK 19 FAMILY OF SYSTEMS ROV UPGRADES ^{(†) (8)}	150,000.00	19	2.850	177,000.00	12	2.124	175,000.00	14	2.450	-	-	0.000	-	-	0.000	-	-	0.000
2.1.12) MODIFIED OFF-THE-SHELF (MOTS) REMOTELY OPERATED VEHICLE (ROV) ^{(†) (9)}	-	-	0.000	-	-	0.000	-	-	0.000	205,555.00	9	1.850	-	-	0.000	205,555.00	9	1.850
2.1.13) UW DIVER INTEGRATION SENSORS ^{(†) (10)}	152,478.99	119	18.145	236,000.00	5	1.180	220,000.00	5	1.100	225,000.00	5	1.125	-	-	0.000	225,000.00	5	1.125
2.1.14) ADVANCED FIRING SYSTEM ^(†)	25,789.47	190	4.900	11,000.00	50	0.550	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
2.1.15) INFLUENCE SIGNATURE REDUCTION ⁽¹¹⁾	-	-	0.000	-	-	0.000	-	-	1.586	-	-	1.350	-	-	0.000	-	-	1.350
2.1.17) MK 18 Mod 2 Systems Advanced Sensors	-	-	0.000	-	-	10.300	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	103.767	-	-	23.840	-	-	35.224	-	-	28.445	-	-	0.000	-	-	28.445
Subtotal: Hardware - UQ034 - UW EOD & MCM SYSTEM/EQUIPMENT Cost	-	-	103.767	-	-	23.840	-	-	35.224	-	-	28.445	-	-	0.000	-	-	28.445
Hardware - UQ035 - OUTFIT EOD/UMCM TOOLS & EQUIPMENT Cost																		
Recurring Cost																		
3.1.1) UW INTEGRATED SYSTEM INTERFACE ⁽¹²⁾	-	-	1.471	-	-	0.250	-	-	0.345	-	-	0.395	-	-	0.000	-	-	0.395
Subtotal: Recurring Cost	-	-	1.471	-	-	0.250	-	-	0.345	-	-	0.395	-	-	0.000	-	-	0.395

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Exhibit P-5, Cost Analysis: PB 2019 Navy													Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9							P-1 Line Item Number / Title: 0977 / Underwater EOD Programs						Item Number / Title [DODIC]: 1 / Underwater EOD Programs					
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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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 - UQ035 - OUTFIT EOD/UMCM TOOLS & EQUIPMENT Cost	-	-	1.471	-	-	0.250	-	-	0.345	-	-	0.395	-	-	0.000	-	-	0.395
Hardware - UQ036 - DIVER SAFETY LIFE SUPPORT EQUIPMENT Cost																		
Recurring Cost																		
4.1.1) DIVER SAFETY LIFE SUPPORT EQUIPMENT ⁽¹³⁾	-	-	3.538	-	-	0.411	-	-	0.475	-	-	0.660	-	-	0.000	-	-	0.660
Subtotal: Recurring Cost	-	-	3.538	-	-	0.411	-	-	0.475	-	-	0.660	-	-	0.000	-	-	0.660
Subtotal: Hardware - UQ036 - DIVER SAFETY LIFE SUPPORT EQUIPMENT Cost	-	-	3.538	-	-	0.411	-	-	0.475	-	-	0.660	-	-	0.000	-	-	0.660
Hardware - UQ037 - MARINE MAMMAL SYSTEM/EQUIPMENT Cost																		
Recurring Cost																		
5.1.1) MMS UMCM ⁽¹⁴⁾	-	-	22.432	-	-	0.832	-	-	1.878	-	-	1.885	-	-	0.000	-	-	1.885
5.1.2) MMS ALLOWANCE ⁽¹⁵⁾	-	-	1.889	-	-	0.300	-	-	0.235	-	-	0.245	-	-	0.000	-	-	0.245
5.1.3) MEDICAL OUTFITTING ⁽¹⁶⁾	-	-	3.060	-	-	0.442	-	-	0.400	-	-	0.400	-	-	0.000	-	-	0.400
5.1.4) UW LOW MAGNETIC TEST EQUIPM UPGRADE ⁽¹⁷⁾	-	-	0.862	-	-	0.120	-	-	0.157	-	-	0.165	-	-	0.000	-	-	0.165
5.1.5) MMS LITTORAL PORT & HARBOR DEFENSE OPERATIONS ⁽¹⁸⁾	-	-	6.833	-	-	0.217	-	-	0.274	-	-	0.250	-	-	0.000	-	-	0.250
Subtotal: Recurring Cost	-	-	35.076	-	-	1.911	-	-	2.944	-	-	2.945	-	-	0.000	-	-	2.945
Subtotal: Hardware - UQ037 - MARINE MAMMAL SYSTEM/EQUIPMENT Cost	-	-	35.076	-	-	1.911	-	-	2.944	-	-	2.945	-	-	0.000	-	-	2.945
Support - UQ830 - PRODUCTION ENGINEERING Cost																		
6.1) PRODUCTION ENGINEERING ⁽¹⁹⁾	-	-	16.221	-	-	4.253	-	-	4.552	-	-	4.788	-	-	0.000	-	-	4.788
Subtotal: Support - UQ830 - PRODUCTION ENGINEERING Cost	-	-	16.221	-	-	4.253	-	-	4.552	-	-	4.788	-	-	0.000	-	-	4.788

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Exhibit P-5, Cost Analysis: PB 2019 Navy											Date: February 2018							
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9						P-1 Line Item Number / Title: 0977 / Underwater EOD Programs						Item Number / Title [DODIC]: 1 / Underwater EOD Programs						
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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
Support - UQ850 - PRODUCT IMPROVEMENT Cost																		
7.1) PRODUCT IMPROVEMENT ⁽²⁰⁾	-	-	12.715	-	-	3.331	-	-	3.634	-	-	3.710	-	-	0.000	-	-	3.710
Subtotal: Support - UQ850 - PRODUCT IMPROVEMENT Cost	-	-	12.715	-	-	3.331	-	-	3.634	-	-	3.710	-	-	0.000	-	-	3.710
Support - UQTNG - INITIAL TRAINING Cost																		
8.1) INITIAL TRAINING ⁽²¹⁾	-	-	1.447	-	-	0.350	-	-	0.425	-	-	0.535	-	-	0.000	-	-	0.535
Subtotal: Support - UQTNG - INITIAL TRAINING Cost	-	-	1.447	-	-	0.350	-	-	0.425	-	-	0.535	-	-	0.000	-	-	0.535
Support - PRIOR YEARS CUMULATIVE FUNDING Cost																		
9.1) PRIOR YEARS CUMULATIVE FUNDING	-	-	47.271	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Support - PRIOR YEARS CUMULATIVE FUNDING Cost	-	-	47.271	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Gross/Weapon System Cost	-	-	223.380	-	-	34.650	-	-	47.908	-	-	41.793	-	-	0.000	-	-	41.793

(†) indicates the presence of a P-5a

Footnotes:

(1) CE 1.1.1 MIW-VIP: FY2019 efforts will focus on ranging RHIBS and unmanned systems to determine specific signature characteristics that will aid in development of tactics and procedures to ensure survivability of these systems in various operation conditions. MIW-VIP measures magnetic and acoustic signatures using existing ranges and portable ranges (Forward Area Combined Degaussing and Acoustic Range (FACDAR)). Measurements are taken in both home port areas and deployment areas to assess susceptibility to various threat mines. Efforts across the FYDP include ranging RHIBS, newly acquired equipment (related OPNAV approved Table of Allowance items) and unmanned systems (i.e. MK 18 Mod's 1 & 2).

(2) CE 2.1.2 MK 18 MOD 1 UCMU UUV INCREMENTAL (CIP) Retrofit Kit: Unit cost of individual retrofit kits may vary based on the number and type of technologies included and systems being upgraded and are identified as incremental Block Upgrades (e.g., current increment Block C retrofit kit is an upgrade in capability for the Mk 18 Mod 1 UUV system). These retrofit kits address more than one upgrade and address different functional area, i.e. enhanced navigation, system autonomy, improved post mission analysis, etc. Accordingly the number of retrofit kits may exceed number of systems/vehicles fielded

(3) CE 2.1.3 MK 18 MOD 2 UUV: Provides for procurement of UUV MK 18 Mod 2 vehicles, which will be employed in operational missions in Shallow Water (SW) and Very Shallow Water (VSW) environments including rotational deployments to the Fifth Fleet and Seventh Fleet areas of responsibility.

(4) CE 2.1.5 MK 18 MOD 2 RETROFIT KITS SYNTHETIC APERTURE SONAR (SSAM)- previously UCMU UUV INCREMENTAL (CIP) RETROFIT (BLKB): Provides for procurement of UUV MK 18 Mod 2 retrofit kits, which will be employed in operational missions in Shallow Water (SW) and Very Shallow Water (VSW) environments including rotational deployments to the Fifth Fleet and Seventh Fleet area of responsibility. These retrofit kits add advanced capability to the MK 18 Mod 2 system. Unit costs of the advanced sensor retrofit kits can vary based on the number and type of sensor upgrades.

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

Footnotes:

- (1) CE 1.1.1 MIW-VIP: FY2019 efforts will focus on ranging RHIBS and unmanned systems to determine specific signature characteristics that will aid in development of tactics and procedures to ensure survivability of these systems in various operation conditions. MIW-VIP measures magnetic and acoustic signatures using existing ranges and portable ranges (Forward Area Combined Degaussing and Acoustic Range (FACDAR)). Measurements are taken in both home port areas and deployment areas to assess susceptibility to various threat mines. Efforts across the FYDP include ranging RHIBS, newly acquired equipment (related OPNAV approved Table of Allowance items) and unmanned systems (i.e. MK 18 Mod's 1 & 2).
- (2) CE 2.1.2 MK 18 MOD 1 UCMC UUV INCREMENTAL (CIP) Retrofit Kit: Unit cost of individual retrofit kits may vary based on the number and type of technologies included and systems being upgraded and are identified as incremental Block Upgrades (e.g., current increment Block C retrofit kit is an upgrade in capability for the Mk 18 Mod 1 UUV system). These retrofit kits address more than one upgrade and address different functional area, i.e. enhanced navigation, system autonomy, improved post mission analysis, etc. Accordingly the number of retrofit kits may exceed number of systems/vehicles fielded
- (3) CE 2.1.3 MK 18 MOD 2 UUV: Provides for procurement of UUV MK 18 Mod 2 vehicles, which will be employed in operational missions in Shallow Water (SW) and Very Shallow Water (VSW) environments including rotational deployments to the Fifth Fleet and Seventh Fleet areas of responsibility.
- (4) CE 2.1.5 MK 18 MOD 2 RETROFIT KITS SYNTHETIC APERTURE SONAR (SSAM)- previously UCMC UUV INCREMENTAL (CIP) RETROFIT (BLKB): Provides for procurement of UUV MK 18 Mod 2 retrofit kits, which will be employed in operational missions in Shallow Water (SW) and Very Shallow Water (VSW) environments including rotational deployments to the Fifth Fleet and Seventh Fleet area of responsibility. These retrofit kits add advanced capability to the MK 18 Mod 2 system. Unit costs of the advanced sensor retrofit kits can vary based on the number and type of sensor upgrades.

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Exhibit P-5, Cost Analysis: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0977 / Underwater EOD Programs	Item Number / Title [DODIC]: 1 / Underwater EOD Programs
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
(5) CE 2.1.6 MK 18 Mod 2 Retrofit Kits (ATLAS forward look sonar) - Previously UMCM UUV INCREMENTAL (CIP) RETROFIT (BLKD): Provides for procurement of UUV MK 18 Mod 2 retrofit kits, which will be employed in operational missions in Shallow Water (SW) and Very Shallow Water (VSW) environments including rotational deployments to the Fifth Fleet and Seventh Fleet area of responsibility. These retrofit kits add advanced capability to the MK 18 Mod 2 system. Unit costs of the advanced sensor retrofit kits can vary based on the number and type of sensor upgrades. (6) CE 2.1.7 MK 18 MOD 2 RETROFIT KITS INCREMENT 1(Autonomy and Automated Target Recognition): Previously UMCM INCREMENT (CIP) (BLKC) - Provides for procurement of UUV MK 18 Mod 2 retrofit kits, which will be employed in operational missions in Shallow Water (SW) and Very Shallow Water (VSW) environments including rotational deployments to the Fifth Fleet and Seventh Fleet area of responsibility. These retrofit kits add advanced capability to the MK 18 Mod 2 system. Unit costs of the advanced sensor retrofit kits can vary based on the number and type of sensor upgrades. (7) CE 2.1.10 AUXILLIARY EQUIPMENT (MK 18 Family of Systems): Provides for procurement of OPNAV approved fleet outfitting of equipment other than UUVs that is required for the MK 18 and MK 19 systems to accomplish their missions. This includes equipment required for deployment, pre-mission planning and post mission analysis of the data collected by the UUVs. In addition, new procurement auxiliary kits will be procured to support enhancements to legacy fleet systems through engineering changes, system upgrades and obsolescence of legacy auxiliary kits. (8) CE 2.1.11 MK 19 FoS ROV Upgrades: Previously HULS Retrofit Kits - MK 19 FoS upgrades leverage advancements in robotic manipulators, target recognition software, user interface, and explosive recognition and neutralization that have been achieved in land robots and which can now be integrated into undersea remotely operated vehicles. These upgrades to previously fielded EOD response ROVs will enable more rapid reacquisition, identification and neutralization of mine like targets found by the MK 18 or other MCM search assets. (9) CE 2.1.12 MODIFIED OFF-THE-SHELF (MOTS) REMOTELY OPERATED VEHICLE (ROV): Provides for procurement funding for OPNAV approved fleet outfitting of a modified-off-the-shelf Remotely Operated Vehicle. This capability will significantly reduce operational risk to divers when investigation and interdiction of a underwater is required, i.e. sea mine or underwater Improved Explosive Device. (10) CE 2.1.13 UW DIVER INTEGRATION SENSORS: Provides for the procurement of a family of systems based on Modified-Off-The Shelf (MTS), mature technologies and upgrades to Diver Integrated Sensors. Unit cost of individual retrofit kits may vary based on number and type of technology included in the kit. (11) CE 2.1.15 INFLUENCE SIGNATURE REDUCTION: Funding procures reduction of acoustic, magnetic and seismic signatures for equipment used in a suspected minefield. (12) CE 3.1.1. UNDERWATER (UW) INTEGRATED SYSTEM INTERFACE: FY2019 resources support the continued outfitting of the upgrade of COIN (Common Operator Interface, Navy, a graphical user interface) to interoperate with the MK 18 Family of Systems and the advanced sensors. COIN upgrades resourced will ensure interoperability with legacy MCM assets and that the fielding of the advanced sensors will meet interoperability performance requirements. (13) CE 4.1.1 DIVER SAFETY LIFE SUPPORT EQUIPMENT: Provides for the procurement of a family of systems based on MOTS and mature technologies to provide safer tools and life support systems for EOD UMCM and MDSU operations. Based on family of systems concept, unit cost of individual systems and sub-systems will vary based on number and type of technology included. (14) CE 5.1.1 MMS UMCM: Funding procures equipment needed to outfit MK 7 MMS detachments in support of Maritime Homeland Defense and contingency response MCM missions. MK 7 MMS remains the only operational buried mine hunting capability in the US Navy. (15) CE 5.1.2 MMS ALLOWANCE: FY2019 funding supports outfitting of tools/equipment for all Fleet MMS in accordance with CNO approved allowance list. MK 7 MMS provides the USN's only buried mine hunting capability. (16) CE 5.1.3 MEDICAL OUTFITTING: Provides funding to procure necessary medical equipment for Navy MMS in accordance with SECNAVINST 3900.41 (17) CE 5.1.4 UW LOW MAGNETIC TEST EQUIPMENT UPGRADE - Upgrades existing equipment which measures acoustic, magnetic and seismic signatures for that equipment used in a suspected minefield. (18) CE 5.1.5 MMS LITTORAL PORT & HARBOR DEFENSE OPERATIONS: Funding procures equipment necessary for Fleet MMS to conduct port and harbor defense operations in support of USNORTHCOM Homeland Defense Contingency Response missions. (19) CE 6.1 Production Engineering: FY2019 funding supports the increased production of MK 18 and MK 19 Family of Systems requiring additional production support to include production contract award, first article tests, and factory acceptance tests. (20) CE 7.1 Product Improvement: Provides for engineering services to improve fielded MMS Systems/EOD Diver-based and unmanned systems to improve Human Systems Integration (HSI)/Logistics domains insert technology refresh and/or decrease costs. (21) CE 8.1 INITIAL TRAINING: FY 2019 funding provides resources needed due to the increase in training requirements due to expanded employment of fleet systems (i.e. mainly MK 18 and MK 19 Family of Systems) and increased inventory objectives. This training is required based on execution of acquisition programs, ECPs and product improvements.		

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Exhibit P-5a, Procurement History and Planning: PB 2019 Navy								Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9			P-1 Line Item Number / Title: 0977 / Underwater EOD Programs					Item Number / Title [DODIC]: 1 / Underwater EOD Programs				
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
2.1.1) MK 18 MOD 1 UUV		2016	VARIOUS / VARIOUS	C / FFP	NSWCIH, MD	Oct 2015	Oct 2016	3	396,666.67	Y		
2.1.2) MK 18 MOD 1 UMCM UUV INCREMENTAL (CIP) Retrofit Kit ^(†)		2016	VARIOUS / VARIOUS	C / FFP	NSWCIHD, MD	Mar 2016	Mar 2017	5	1,060K	Y		
2.1.3) MK 18 MOD 2 UUV		2016	VARIOUS / VARIOUS	C / FFP	NSWCIH, MDNSWCIH, MD	Mar 2016	Mar 2017	2	990,000.00	Y		
2.1.3) MK 18 MOD 2 UUV		2017	VARIOUS / VARIOUS	C / TBD	NSWCIH, MDNSWCIH, MD	Apr 2017	Apr 2018	2	990,000.00	Y		
2.1.3) MK 18 MOD 2 UUV		2018	VARIOUS / VARIOUS	C / TBD	NSWCIH, MD	Jan 2018	Jan 2019	8	990,000.00	Y		
2.1.4) MK 18 MOD 2 RETROFIT KITS ^(†)		2016	VARIOUS / VARIOUS	C / FFP	NSWCIHD, MD	Nov 2015	Aug 2016	12	1,812K	Y		
2.1.5) MK 18 MOD 2 RETROFIT KITS (SSAM) ^(†)		2017	VARIOUS / VARIOUS	C / FFP	Various	Mar 2017	Mar 2018	4	600,000.00	Y		
2.1.6) MK18 MOD 2 RETROFIT KITS (ATLAS) ^(†)		2018	VARIOUS / VARIOUS	C / FFP	Various	Apr 2018	Apr 2019	15	400,000.00	Y		
2.1.6) MK18 MOD 2 RETROFIT KITS (ATLAS) ^(†)		2019	VARIOUS / VARIOUS	C / FFP	Various	Feb 2019	Feb 2020	22	400,000.00	Y		
2.1.7) MK18 MOD 2 RETROFIT KITS (INC I)		2018	VARIOUS / VARIOUS	C / FFP	Various	Apr 2018	Apr 2019	24	73,750.00	Y		
2.1.10) AUXILLIARY EQUIPMENT (MK 18)		2016	VARIOUS / VARIOUS	C / FFP	NSWCIH, MD	Apr 2016	Apr 2017	4	386,000.00	Y		
2.1.11) MK 19 FAMILY OF SYSTEMS ROV UPGRADES		2016	VARIOUS / Various	C / FFP	NSWCIHD, MD	Mar 2016	Mar 2017	13	150,230.77	Y		
2.1.11) MK 19 FAMILY OF SYSTEMS ROV UPGRADES		2017	VARIOUS / Various	C / FFP	NSWCIHD, MD	Mar 2017	Mar 2018	12	177,000.00	Y		
2.1.11) MK 19 FAMILY OF SYSTEMS ROV UPGRADES		2018	VARIOUS / Various	C / FFP	NSWCIHD, MD	Mar 2018	Mar 2019	14	175,000.00	Y		
2.1.12) MODIFIED OFF-THE- SHELF (MOTS) REMOTELY OPERATED VEHICLE (ROV)		2019	TBD / NSWC, IH	C / TBD	NSWCIH, MD	Mar 2019	Mar 2020	9	205,555.00	N		
2.1.13) UW DIVER INTEGRATION SENSORS		2014	UARC-University of Texas at Austin / Austin, TX	C / FFP	NSWCIHD, MD	May 2014	May 2015	27	132,888.89	Y		
2.1.13) UW DIVER INTEGRATION SENSORS		2017	UARC-University of Texas at Austin / Austin, TX	C / FFP	NAVSEA, HQ	May 2017	May 2018	5	236,000.00	Y		
2.1.13) UW DIVER INTEGRATION SENSORS		2018	UARC-University of Texas at Austin / Austin, TX	C / FFP	NAVSEA, HQ	May 2018	May 2019	5	220,000.00	Y		
2.1.14) ADVANCED FIRING SYSTEM		2016	UARC-University of Texas at Austin / Austin, TX	C / TBD	NAVSEA, HQ	May 2016	May 2017	50	20,000.00	Y		

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Exhibit P-5a, Procurement History and Planning: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0977 / Underwater EOD Programs	Item Number / Title [DODIC]: 1 / Underwater EOD Programs

(†) indicates the presence of a P-21		

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Exhibit P-21, Production Schedule: PB 2019 Navy																				Date: February 2018															
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0977 / Underwater EOD Programs										Item Number / Title [DODIC]: 1 / Underwater EOD Programs															
Cost Elements (Units in Each)							Fiscal Year 2014													Fiscal Year 2015													BALANCE		
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2013	BAL DUE AS OF 1 OCT	Calendar Year 2014													Calendar Year 2015															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					
2.1.2) MK 18 MOD 1 UCMC UUV INCREMENTAL (CIP) Retrofit Kit ⁽²⁾																																			
Prior Years Deliveries: 5																																			
	1	2016	NAVY	5	0	5																													5
2.1.4) MK 18 MOD 2 RETROFIT KITS																																			
Prior Years Deliveries: 5																																			
	2	2016	NAVY	12	0	12																													12
2.1.5) MK 18 MOD 2 RETROFIT KITS (SSAM) ⁽⁴⁾																																			
Prior Years Deliveries: 4																																			
	3	2017	NAVY	4	0	4																													4
2.1.6) MK18 MOD 2 RETROFIT KITS (ATLAS) ⁽⁵⁾																																			
	4	2018	NAVY	15	0	15																													15
	4	2019	NAVY	22	0	22	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	22				

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Exhibit P-21, Production Schedule: PB 2019 Navy																							Date: February 2018											
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0977 / Underwater EOD Programs													Item Number / Title [DODIC]: 1 / Underwater EOD Programs											
Cost Elements <i>(Units in Each)</i>							Fiscal Year 2016													Fiscal Year 2017													BALANCE	
O C C #	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				
2.1.2) MK 18 MOD 1 UCMC UUV INCREMENTAL (CIP) Retrofit Kit ⁽²⁾																																		
Prior Years Deliveries: 5																																		
	1	2016	NAVY	5	0	5							A -	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	1	-	1	1	
2.1.4) MK 18 MOD 2 RETROFIT KITS																																		
Prior Years Deliveries: 5																																		
	2	2016	NAVY	12	0	12			A -	-	-	-	-	-	-	-	-	1	-	2	-	2	-	-	2	2	2	1					0	
2.1.5) MK 18 MOD 2 RETROFIT KITS (SSAM) ⁽⁴⁾																																		
Prior Years Deliveries: 4																																		
	3	2017	NAVY	4	0	4																			A -	-	-	-	-	-	-	-	4	
2.1.6) MK18 MOD 2 RETROFIT KITS (ATLAS) ⁽⁵⁾																																		
	4	2018	NAVY	15	0	15																												15
	4	2019	NAVY	22	0	22																												22
							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 2019 Navy																				Date: February 2018															
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0977 / Underwater EOD Programs										Item Number / Title [DODIC]: 1 / Underwater EOD Programs															
Cost Elements <i>(Units in Each)</i>							Fiscal Year 2018										Fiscal Year 2019													B A L A N C E					
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT				Calendar Year 2018										Calendar Year 2019															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P				
2.1.2) MK 18 MOD 1 UCMC UUV INCREMENTAL (CIP) Retrofit Kit ⁽²⁾																																			
Prior Years Deliveries: 5																																			
	1	2016	NAVY	5	4	1	-	1																											0
2.1.4) MK 18 MOD 2 RETROFIT KITS																																			
Prior Years Deliveries: 5																																			
	2	2016	NAVY	12	12	0																												0	
2.1.5) MK 18 MOD 2 RETROFIT KITS (SSAM) ⁽⁴⁾																																			
Prior Years Deliveries: 4																																			
	3	2017	NAVY	4	0	4	-	-	-	-	-	1	-	1	-	1	-	1																0	
2.1.6) MK18 MOD 2 RETROFIT KITS (ATLAS) ⁽⁵⁾																																			
	4	2018	NAVY	15	0	15	A -						-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	9			
	4	2019	NAVY	22	0	22	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	22				

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Exhibit P-21, Production Schedule: PB 2019 Navy																							Date: February 2018										
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0977 / Underwater EOD Programs										Item Number / Title [DODIC]: 1 / Underwater EOD Programs													
Cost Elements <i>(Units in Each)</i>							Fiscal Year 2020												Fiscal Year 2021												BALANCE		
OCO	MFR #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	Calendar Year 2020												Calendar Year 2021														
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP			
2.1.2) MK 18 MOD 1 UMCM UUV INCREMENTAL (CIP) Retrofit Kit ⁽²⁾																																	
Prior Years Deliveries: 5																																	
	1	2016	NAVY		5	5	0																										0
2.1.4) MK 18 MOD 2 RETROFIT KITS																																	
Prior Years Deliveries: 5																																	
	2	2016	NAVY		12	12	0																										0
2.1.5) MK 18 MOD 2 RETROFIT KITS (SSAM) ⁽⁴⁾																																	
Prior Years Deliveries: 4																																	
	3	2017	NAVY		4	4	0																										0
2.1.6) MK18 MOD 2 RETROFIT KITS (ATLAS) ⁽⁵⁾																																	
	4	2018	NAVY		15	6	9	1	1	1	1	1	1	1	1																	0	
	4	2019	NAVY		22	0	22	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	
								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 2019 Navy																							Date: February 2018											
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0977 / Underwater EOD Programs													Item Number / Title [DODIC]: 1 / Underwater EOD Programs											
Cost Elements <i>(Units in Each)</i>							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				
2.1.2) MK 18 MOD 1 UCMC UUV INCREMENTAL (CIP) Retrofit Kit ⁽²⁾																																		
Prior Years Deliveries: 5																																		
	1	2016	NAVY	5	5	0																											0	
2.1.4) MK 18 MOD 2 RETROFIT KITS																																		
Prior Years Deliveries: 5																																		
	2	2016	NAVY	12	12	0																											0	
2.1.5) MK 18 MOD 2 RETROFIT KITS (SSAM) ⁽⁴⁾																																		
Prior Years Deliveries: 4																																		
	3	2017	NAVY	4	4	0																											0	
2.1.6) MK18 MOD 2 RETROFIT KITS (ATLAS) ⁽⁵⁾																																		
	4	2018	NAVY	15	15	0																											0	
	4	2019	NAVY	22	20	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 2019 Navy				Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9			P-1 Line Item Number / Title: 0977 / Underwater EOD Programs			Item Number / Title [DODIC]: 1 / Underwater EOD Programs	

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
		MSR For 2019	1-8-5 For 2019	MAX For 2019	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	VARIOUS - VARIOUS				0	0	0	0	0	0	0	0
2	VARIOUS - VARIOUS				0	0	0	0	0	0	0	0
3	VARIOUS - VARIOUS				0	0	0	0	0	0	0	0
4	VARIOUS - VARIOUS				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-5, Cost Analysis: PB 2019 Navy												Date: February 2018						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9						P-1 Line Item Number / Title: 0977 / Underwater EOD Programs						Item Number / Title [DODIC]: 2 / Expeditionary Mine Countermeasures (ExMCM)						
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Resource Summary				Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total				
Procurement Quantity (Units in Each)				-		-		-		-		-		-				
Gross/Weapon System Cost (\$ in Millions)				0.000		0.000		15.412		33.640		6.700		40.340				
Less PY Advance Procurement (\$ in Millions)				-		-		-		-		-		-				
Net Procurement (P-1) (\$ in Millions)				0.000		0.000		15.412		33.640		6.700		40.340				
Plus CY Advance Procurement (\$ in Millions)				-		-		-		-		-		-				
Total Obligation Authority (\$ in Millions)				0.000		0.000		15.412		33.640		6.700		40.340				
(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)				-		-		-		-		-		-				
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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 - UQ038 Expeditionary Mine Countermeasures (ExMCM) Cost																		
Recurring Cost																		
1.1.1) Expeditionary MCM (EXMCM) MK 18 MOD 2 UUV ^(†) (22)	-	-	0.000	-	-	0.000	1,050K	6	6.300	1,050K	6	6.300	-	-	0.000	1,050K	6	6.300
1.1.2) ExMCM MK 18 MOD 2 Support Kit ^(†) (23)	-	-	0.000	-	-	0.000	287,000.00	6	1.722	287,000.00	6	1.722	-	-	0.000	287,000.00	6	1.722
1.1.3) ExMCM MK 18 MOD 2 Maint Kit ^(†) (24)	-	-	0.000	-	-	0.000	241,500.00	6	1.449	257,636.36	11	2.834	-	-	0.000	257,636.36	11	2.834
1.1.4) ExMCM MK 18 MOD 1 UUV ^(†) (25)	-	-	0.000	-	-	0.000	-	-	0.000	440,000.00	12	5.280	-	-	0.000	440,000.00	12	5.280
1.1.5) ExMCM MK 18 MOD 1 Support Kit ^(†) (26)	-	-	0.000	-	-	0.000	-	-	0.000	187,000.00	12	2.244	-	-	0.000	187,000.00	12	2.244
1.1.6) ExMCM MK 18 MOD 1 Aux Kit ^(†) (27)	-	-	0.000	-	-	0.000	-	-	0.000	207,000.00	12	2.484	-	-	0.000	207,000.00	12	2.484
1.1.7) ExMCM Open Water Transport Sys/ Shipboard Charging Container OWTS/ SCC ^(†) (28)	-	-	0.000	-	-	0.000	-	-	0.000	290,363.00	44	12.776	-	-	0.000	290,363.00	44	12.776

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Exhibit P-5, Cost Analysis: PB 2019 Navy										Date: February 2018							
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0977 / Underwater EOD Programs					Item Number / Title [DODIC]: 2 / Expeditionary Mine Countermeasures (ExMCM)							

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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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) ExMCM Mission Support Equipment (MSE) ^(†)	-	-	0.000	-	-	0.000	385,000.00	5	1.925	-	-	0.000	-	-	0.000	-	-	0.000
1.1.9) ExMCM Procurement C6F OCO	-	-	0.000	-	-	0.000	-	-	4.016	-	-	0.000	-	-	0.000	-	-	0.000
1.1.10) ExMCM Diver Equipment Outfitting ⁽²⁹⁾	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	6.700	-	-	6.700
<i>Subtotal: Recurring Cost</i>	-	-	<i>0.000</i>	-	-	<i>0.000</i>	-	-	<i>15.412</i>	-	-	<i>33.640</i>	-	-	<i>6.700</i>	-	-	<i>40.340</i>
<i>Subtotal: Hardware - UQ038 Expeditionary Mine Countermeasures (ExMCM) Cost</i>	-	-	<i>0.000</i>	-	-	<i>0.000</i>	-	-	<i>15.412</i>	-	-	<i>33.640</i>	-	-	<i>6.700</i>	-	-	<i>40.340</i>
Gross/Weapon System Cost	-	-	0.000	-	-	0.000	-	-	15.412	-	-	33.640	-	-	6.700	-	-	40.340

Remarks:

[Hardware/Recurring] CE 1.1) Ex MCM Outfitting: This funding resources the procurement of Expeditionary UUV-based systems and support equipment on the OPNAV approved Table of Allowance. Procurement of this equipment will allow the UUV-based systems to be deployed globally and employed from a wide variety of shipboard platforms at sea as well as small craft. ExMCM cost elements include MK 18 MOD 1 and Mod 2 UUVs which provides for procurement of UUV MK 18 vehicles, which will be employed in operational missions in Shallow Water (SW) and Very Shallow Water (VSW) environments including rotational deployments to the Fifth Fleet, Sixth Fleet, and Seventh Fleet areas of responsibility. Additional ExMCM procurement cost elements include Open Water Transport Systems (OWTS), Shipboard Charging Containers (SCC), Auxiliary Equipment sets, Mission support Equipment, Maintenance Kits, and Fleet Support Kits. The various kits comprise the ancillary and support equipment necessary to outfit an ExMCM Company with a complete set of Mk 18 UUV related equipment and are procured from a variety of OEMs and sources.

^(†) indicates the presence of a P-5a

Footnotes:

⁽²²⁾ CE 1.1.1 Expeditionary MCM (EXMCM) MK 18 MOD 2UUV: This funding resources the procurement of Expeditionary UUV-based systems and support equipment on the OPNAV approved Table of Allowance. Procurement of this equipment will allow the UUV-based systems to be deployed globally and employed from a wide variety of shipboard platforms at sea as well as small craft.

⁽²³⁾ CE 1.1.2 The MK 18 MOD 2 Support Kit comprises GETACs, PMA stations, cross-domain modules, and other support items that comprise a portion of the Mk 18 Mod 2 system outfitting.

⁽²⁴⁾ CE 1.1.3 The MOD 2 Maintenance Kit comprises special tool kits, calibration equipment, fly away maintenance modules, and other maintenance items that comprise a portion of the Mk 18 Mod 2 system outfitting

⁽²⁵⁾ CE 1.1.4 Ex MCM MK 18 Mod 1 UUV: Supports procurement of MK 18 Mod 1 for outfitting Ex MCM Companies.

⁽²⁶⁾ CE 1.1.5 Ex MCM MK 18 Mod 1 Support Kit: Supports procurement of MK 18 Mod 1 support equipment such as computers, PMA stations, displays, hard drives, etc..

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Exhibit P-5, Cost Analysis: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0977 / Underwater EOD Programs	Item Number / Title [DODIC]: 2 / Expeditionary Mine Countermeasures (ExMCM)
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
(27) CE 1.1.6 " The Aux Kits includes equipment required for deployment, pre-mission planning and post mission analysis of the data collected by the Family of Systems to include both Mod1 and Mod 2 UUVs. In addition, new procurement auxiliary kits will need to be procured to support enhancements to legacy fleet systems through engineering changes, system upgrades and obsolescence of legacy auxiliary kits. Items include those required to deploy the MK 18 Family of Systems (FoS) such as transport carts, transport cases, test equipment, pre-mission planning equipment not covered in the support or maintenance kits. (28) CE 1.1.7 Ex MCM OWTS/SCC: Supports initial fielding of hardware of the Open Water Transport equipment and shipboard charging containers. Anticipated delivery schedule 2 per month. (29) CE 1.1.10 OCO Funding for procurement of Underwater Breathing Apparatus (UBA) and associated diver support equipment in support of CENTCOM AOR Underwater EOD Divers and EXMCM Companies		

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Exhibit P-5a, Procurement History and Planning: PB 2019 Navy								Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0977 / Underwater EOD Programs				Item Number / Title [DODIC]: 2 / Expeditionary Mine Countermeasures (ExMCM)			

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) Expeditionary MCM (EXMCM) MK 18 MOD 2 UUV		2018	Various / Various	C / FFP	NSWCIH, MD	Jan 2018	Jan 2019	6	1,050K	Y		
1.1.1) Expeditionary MCM (EXMCM) MK 18 MOD 2 UUV		2019	Various / Various	C / FFP	NSWCIH, MD	Jan 2019	Jan 2020	6	1,050K	Y		
1.1.2) ExMCM MK 18 MOD 2 Support Kit		2018	VARIOUS / VARIOUS	C / FFP	NSWCIH, MD	Jan 2018	Jan 2019	6	287,000.00	Y		
1.1.2) ExMCM MK 18 MOD 2 Support Kit		2019	VARIOUS / VARIOUS	C / FFP	NSWCIH, MD	Jan 2019	Jan 2020	6	287,000.00	Y		
1.1.3) ExMCM MK 18 MOD 2 Maint Kit		2018	VARIOUS / VARIOUS	C / FFP	NSWCIH, MD	Jan 2018	Jan 2019	6	241,500.00	Y		
1.1.3) ExMCM MK 18 MOD 2 Maint Kit		2019	VARIOUS / VARIOUS	C / FFP	NSWCIH, MD	Jan 2019	Jan 2020	11	257,636.36	Y		
1.1.4) ExMCM MK 18 MOD 1 UUV		2019	VARIOUS / VARIOUS	C / FFP	NSWCIH, MD	Mar 2019	Mar 2020	12	440,000.00	Y		
1.1.5) ExMCM MK 18 MOD 1 Support Kit		2019	VARIOUS / VARIOUS	C / FFP	NSWCIH, MD	Mar 2019	Mar 2020	12	187,000.00	Y		
1.1.6) ExMCM MK 18 MOD 1 Aux Kit		2019	VARIOUS / VARIOUS	C / FFP	NSWCIH, MD	Mar 2019	Mar 2020	12	207,000.00	Y		
1.1.7) ExMCM Open Water Transport Sys/Shipboard Charging Container OWTS/SCC ^(†)		2019	VARIOUS / VARIOUS	C / FFP	NSWCIH, MD	Mar 2019	Mar 2020	44	290,363.00	Y		
1.1.8) ExMCM Mission Support Equipment (MSE)		2018	VARIOUS / VARIOUS	C / TBD	NSWCIH, MD	Jan 2018	Jan 2019	5	385,000.00	Y		

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2019 Navy																				Date: February 2018													
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9							P-1 Line Item Number / Title: 0977 / Underwater EOD Programs													Item Number / Title [DODIC]: 2 / Expeditionary Mine Countermeasures (ExMCM)													
Cost Elements (Units in Each)							Fiscal Year 2018													Fiscal Year 2019													BALANCE
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2017	BAL DUE AS OF 1 OCT	Calendar Year 2018													Calendar Year 2019													
							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			
1.1.7) ExMCM Open Water Transport Sys/Shipboard Charging Container OWTS/SCC ⁽²⁸⁾																																	
	1	2019	NAVY	44	0	44														A -	-	-	-	-	-	-	-					44	
							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 2019 Navy																							Date: February 2018											
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0977 / Underwater EOD Programs													Item Number / Title [DODIC]: 2 / Expeditionary Mine Countermeasures (ExMCM)											
Cost Elements <i>(Units in Each)</i>							Fiscal Year 2020													Fiscal Year 2021													BALANCE	
OCCO	MFR#	FY	SERVICE	PROCQTY	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				
1.1.7) ExMCM Open Water Transport Sys/Shipboard Charging Container OWTS/SCC ⁽²⁸⁾																																		
	1	2019	NAVY		44	0	44	-	-	-	-	-	2	2	4	4	4	4	4	4	4	4	4	4	4									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 2019 Navy				Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9			P-1 Line Item Number / Title: 0977 / Underwater EOD Programs			Item Number / Title [DODIC]: 2 / Expeditionary Mine Countermeasures (ExMCM)	

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
		MSR For 2019	1-8-5 For 2019	MAX For 2019	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	VARIOUS - VARIOUS				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-5, Cost Analysis: PB 2019 Navy												Date: February 2018							
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9						P-1 Line Item Number / Title: 0977 / Underwater EOD Programs						Item Number / Title [DODIC]: 3 / Naval Special Warfare Forces							
ID Code (A=Service Ready, B=Not Service Ready) :									MDAP/MAIS Code:										
Resource Summary				Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total					
Procurement Quantity (Units in Each)				-		-		-		-		-		-					
Gross/Weapon System Cost (\$ in Millions)				0.000		0.000		4.950		3.374		2.500		5.874					
Less PY Advance Procurement (\$ in Millions)				-		-		-		-		-		-					
Net Procurement (P-1) (\$ in Millions)				0.000		0.000		4.950		3.374		2.500		5.874					
Plus CY Advance Procurement (\$ in Millions)				-		-		-		-		-		-					
Total Obligation Authority (\$ in Millions)				0.000		0.000		4.950		3.374		2.500		5.874					
(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)				-		-		-		-		-		-					
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																			
Cost Elements		Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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 - UQ039 NSW Common Equipment Cost																			
Recurring Cost																			
1.1.1) NSW MK18 MOD 1 ^(†) (30)		-	-	0.000	-	-	0.000	435,666.00	6	2.614	440,000.00	4	1.760	440,000.00	3	1.320	440,000.00	7	3.080
1.1.2) NSW MK18 MOD1 Auxiliary Kit ^(†) (31)		-	-	0.000	-	-	0.000	207,000.00	6	1.242	207,000.00	4	0.828	207,000.00	3	0.621	207,000.00	7	1.449
1.1.3) NSW MK18 MOD1 Support Kit ^(†) (32)		-	-	0.000	-	-	0.000	182,400.00	6	1.094	186,333.33	4	0.745	186,333.33	3	0.559	186,333.33	7	1.304
Subtotal: Recurring Cost		-	-	0.000	-	-	0.000	-	-	4.950	-	-	3.333	-	-	2.500	-	-	5.833
Subtotal: Hardware - UQ039 NSW Common Equipment Cost		-	-	0.000	-	-	0.000	-	-	4.950	-	-	3.333	-	-	2.500	-	-	5.833
Support - Program Support Cost																			
2.1) Program Support		-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.041	-	-	0.000	-	-	0.041
Subtotal: Support - Program Support Cost		-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.041	-	-	0.000	-	-	0.041
Gross/Weapon System Cost		-	-	0.000	-	-	0.000	-	-	4.950	-	-	3.374	-	-	2.500	-	-	5.874
Remarks: [Hardware/Recurring] MK 18 UUV outfitting in support of Naval Special Operation Forces.																			

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Exhibit P-5, Cost Analysis: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0977 / Underwater EOD Programs	Item Number / Title [DODIC]: 3 / Naval Special Warfare Forces
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
(†) indicates the presence of a P-5a Footnotes: ⁽³⁰⁾ CE:1.1.1 MK18 MOD1 UUV: Baseline and OCO funding provides for the replacement procurement of (4) MK18 MOD1 UUV in support of contingency Naval Special Warfare missions. The MK18 UUV systems have been identified as a Navy service-common systems and beginning in FY18 are funded using Department of the Navy resources. Previous MK18 UUV systems were procured by Special Operations Command (SOCOM) funding. ⁽³¹⁾ CE:1.1.2 AUXILIARY EQUIPMENT (MK 18 MOD 1) Baseline and OCO funding provided to Naval Special Warfare for procurement of equipment other than UUVs that is required for the MK18 to accomplish NSW missions. This includes equipment required for deployment, pre-mission planning and post mission analysis of the data collected by the UUVs. ⁽³²⁾ CE:1.1.3 MK18 MOD 1 Support Kits: Baseline and OCO funding is provided to Naval Special Warfare for procurement of equipment other than UUVs that is required for the MK 18 MOD 1 systems to accomplish NSW missions. This includes On Board Repair Parts (OBRP)and other support equipment as required.		

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Exhibit P-5a, Procurement History and Planning: PB 2019 Navy								Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9			P-1 Line Item Number / Title: 0977 / Underwater EOD Programs					Item Number / Title [DODIC]: 3 / Naval Special Warfare Forces				
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) NSW MK18 MOD 1	✓	2018	VARIOUS / VARIOUS	C / FFP	NSWCIH, MD	Mar 2018	Mar 2019	6	435,666.00	Y		
1.1.1) NSW MK18 MOD 1		2019	VARIOUS / VARIOUS	C / FFP	NSWCIH, MD	Mar 2019	Mar 2020	4	440,000.00	Y		
1.1.1) NSW MK18 MOD 1	✓	2019	VARIOUS / VARIOUS	C / FFP	NSWCIH, MD	Mar 2019	Mar 2019	3	440,000.00	Y		
1.1.2) NSW MK18 MOD1 Auxiliary Kit	✓	2018	VARIOUS / VARIOUS	C / FFP	NSWCIH, MD	Mar 2018	Mar 2019	6	207,000.00	Y		
1.1.2) NSW MK18 MOD1 Auxiliary Kit		2019	VARIOUS / VARIOUS	C / FFP	NSWCIH, MD	Mar 2019	Mar 2019	4	207,000.00	N		
1.1.2) NSW MK18 MOD1 Auxiliary Kit	✓	2019	VARIOUS / VARIOUS	C / FFP	NSWCIH, MD	Mar 2019	Mar 2019	3	207,000.00	N		
1.1.3) NSW MK18 MOD1 Support Kit	✓	2018	VARIOUS / VARIOUS	C / FFP	NSWCIH, MD	Mar 2018	Mar 2019	6	182,400.00	Y		
1.1.3) NSW MK18 MOD1 Support Kit		2019	VARIOUS / VARIOUS	C / FFP	NSWCIH, MD	Mar 2019	Mar 2019	4	186,333.33	Y		
1.1.3) NSW MK18 MOD1 Support Kit	✓	2019	VARIOUS / VARIOUS	C / FFP	NSWCIH, MD	Mar 2019	Mar 2019	3	186,333.33	Y		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment							P-1 Line Item Number / Title: 0981 / 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	570.873	65.994	96.909	126.865	0.000	126.865	76.447	86.373	70.266	60.801	13.080	1,167.608
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	570.873	65.994	96.909	126.865	0.000	126.865	76.447	86.373	70.266	60.801	13.080	1,167.608
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	570.873	65.994	96.909	126.865	0.000	126.865	76.447	86.373	70.266	60.801	13.080	1,167.608
<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 2019 funding request was reduced by \$0.594 million to reflect the Department of Navy's effort to support the Office of Management and Budget directed reforms for Efficiency and Effectiveness that include a lean, accountable, more efficient government. This budget provides for "S" cognizance (Shipboard, Hull, Mechanical & Electrical (HM&E) equipment for surface ships and aircraft carriers) which are not in any specific category. This equipment accomplishes program alterations for installation during CNO and Fleet availabilities, fills Fleet requisitions from casualties and attrition, provide tech refresh upgrades, and replaces obsolete equipment. Primary objectives are to maintain or improve readiness, safety, reliability, reduce workload, lower maintenance costs, improve sailor quality of life, and/or sustain ship classes through their notional life or beyond. The budget purchases install various equipment including machinery pumps, generators, ships propellers and shafts, air compressors, davits, A/C Plants, and steam propulsion items. It also procures allowance items as required by the Coordinated Shipboard Allowance List (COSAL). Major programs are the CVN Class Machinery Plant Upgrades, MACHALTs, Carrier Auto Voltage Regulator (AVR), Solid State Lighting, Patrol Coastal Modernization, and Expeditionary Mobile Base (ESB). [P40A / LT060 - MACHALTs]: The Machinery Alteration (MACHALT) Program supports identification, procurement, and installation of Hull, Mechanical and Electrical (HM&E) internal equipment and system improvements on in-service surface ships. The components are required to support units in the Fleet during the Continuous Maintenance Availability (CMAV) and other windows of opportunity (WOO). Due to Fleet usage, requirements, and alignment of availability periods in a given year, adjustments are made to quantities and items throughout the FYDP. Program execution improves system readiness and reduces life cycle cost. MACHALTs are installed via the Navy Modernization Process (NMP) in the following priority order: (1) Mandatory Safety, (2) Statutory, (3) Safety, and (4) Troubled Systems/Obsolescence Alts. [P40A / LT110 - Propellers and Shafts]: LT110- VARIOUS PROPELLERS AND SHAFTS - This funding procures spare waterborne shafting (propeller shafts and stern tube shafts) and controllable pitch propeller (CPP) system end items such as propeller blades, hubs and oil distribution (OD) boxes used on DDG 51 class ships. These spares are required to meet DDG 51 class Fleet demand due to scheduled replacement caused by lifecycle wear and unscheduled replacements caused by CASREPs. The component has long repair turn-around times (1-2 years) and thus cannot be repaired and reused during the same availability. The technical requirements and drydocking constraints drives the program to establish a rotatable pool to support replacements. The growing size of the DDG 51 class is driving the requirement to increase the number of spares to support a rotatable pool and ensure readiness. A malfunctioning propeller or shaft may result in excessive vibration, which could lead to damage of ship structures and equipment (bearings, main reduction gears, and bulkhead seal); increase of ship cavitation/noise, loss of speed or loss of motion.												

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment		P-1 Line Item Number / Title: 0981 / 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		
[P40A / LT120 - Carrier Propulsion Plant Inspection]: Funds will be utilized to procure the latest technology inspection system tooling, i.e., laser-optic, ultrasonic, fiber-optic, electro-optic and computed radiography inspection systems.		
[P40A / LT130 - Steam Propulsion Items]: LT130 - STEAM PROPULSION ITEMS This provides for several initiatives oriented to upgrading boiler efficiency and safety with downstream maintenance effectiveness. In particular, the items procured include: Upgraded Stack Gas Analyzer (SGA) , Optimization Trim Loop Material including fuel oil meters, stack gas temperature sensors, electronic automatic boiler controls interface software/schema to improve steam plant efficiency, Upgraded electronic automatic boiler control (E-ABC) system process controllers/smart transmitters, Upgraded Boiler Water/Feedwater (BW/FW) Chemistry Analysis/Carbohydrazide Implementation Equipment., Upgraded SSTG Protective Devices (Overspeed Trips), and Upgrades to Boiler Igniter System (BIS) (Fuel Valve and Insert/Retract Air Actuators). The Steam Propulsion Improvement Program provides safe and reliable power for ship movement through the water, and, in addition, provides power to ships combat and habitability systems, whether electrical or steam dependent. At any given time, due to propulsion plant casualties, ship propulsion systems may be operating at reduced capability, adversely affecting the ship's mission(s). The Steam Propulsion improvement program encompasses steam and diesel propulsion surface ships in the Fleet, and provides for material upgrades to propulsion systems resulting in increased readiness, safety and reliability. Items can be installed during a scheduled or unscheduled availability by a shipyard, tender/ Intermediate Maintenance Activity or Alteration Installation Team (AIT).		
[P40A / LT830 - Carrier Production Engineering]: The review and approval of any production contract technical documentation, or the separate development of this documentation, to include: Technical Manuals, Planned Maintenance System (PMS), Level III Production Drawings, Provisioning Technical Documentation (PTD), Program Support Data (PSD), and Allowance Parts List (APL); engineering support for final design reviews.		
[P40A / LT325 - Propulsion Shafting]: Establishes a holistic shafting program that provides program management and life cycle support for Carrier propulsion shafting. Purchases the two intermediate shaft segments to complete the CVN rotatable pool of shafting. Purchases the couplings required to make the shaft segments ready for install. Several CVNs had docking periods extended because the time required to overhaul existing shafts did not meet project milestones. To rectify the issue, the Department stood up a partial pool of "ready for issue" CVN shafts using existing carcasses and refurbished removals from decommissioned ships. Using existing funds to overhaul existing carcasses, a pool of over 12 segments was built. Funding required for 2 additional segments that are required to meet Shipyard requirements. No carcasses exist to meet this need; therefore these two shaft segments will be purchased new along with ancillary material (couplings) required for installation.		
[P40A / LT328 - Mobile Cleaning Recovery and Recycle System (MCRRS)]: The Mobile Cleaning, Recovery & Recycling System (MCRRS) is a shipboard heavy duty, self-powered and propelled cleaning vehicle which utilizes pressurized water jet technology, water reclaiming and recycling systems onboard the unit to clean and restore non-skid surfaces on Navy aircraft capable ships. MCRRS will replace the existing obsolete Tennant flight deck scrubber, significantly reduce manpower allocation and materials required to conduct the manual cleaning process utilizing soap and water, and be fielded on all LHA and LHD platforms. Funding will procure units, spares, training, and engineering services support.		
[P40A / LT330 - CVN Cybersecurity]: CVN Cyber Security enables the development and installation of Ship Change Documents (SCDs) for Boundary Defense Capability (BDC), Situational Awareness and Physical Security. It will increase the Defense in Depth and improve the Cyber Security aspects of the CVN Nimitz Class HM&E Networks. Funding will be used to update hardware and software applications and system configurations required to be compatible with and meet DoD CYBER requirements, Security Technical Implementation Guide and other CYBER requirements. Funding will also be used to update system cybersecurity Certification and Accreditation. Add capability to protect, detect, and respond/recover to internal system events, and add additional defense in depth and monitoring to external interfaces.		
[P40A / LT 331 CVN78]: CVN78 will transition to an PMS 312 in-service asset with modernization planning and execution requirements. Modernization is required during the FY20 planned incremental availability (PIA) to upgrade the configuration of Machinery Control and Monitoring System (MCMS) valve operator architecture from Ring to star configuration, upgrade the Aircrew Survival Equipment maintenance shops and flight/survival gear storage rooms, install increased waste handling/management equipment upgrades to support Plasma Arc Waste Destruction System (PAWDS and update the Dual Band Radar (DBR) Power Quality Data Acquisition System (PQDAS).		
[P3A / LT160 - Machinery Plant Upgrades]: ICAN provides core infrastructure (node rooms, air blown fiber optic cable plant, network services) for integrating voice, video and data systems. This capability is easily upgradeable for rapid and cost effective expansion to support new technologies, such as IT-21, and is compatible with the Navy's integrated Information Networks MOA.		
[P3A - 2 / LT306 - Automated Voltage Regulator (AVR)]: LT306 - AUTOMATED VOLTAGE REGULATOR		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment		P-1 Line Item Number / Title: 0981 / 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		
The CVN Automatic Voltage Regulator (AVR) is a microprocessor based voltage regulator system for the NIMITZ Class, programmed to replace the legacy analog voltage regulator, which, although operational, lacks the improved reliability and lower maintenance costs of the AVR. It controls the output voltage of a turbine generator (TG), which converts steam into the electricity used for aircraft and combat operations, and reactor cooling. [P3A - 3 / LT307 - Carrier Canned Lube Oil Pump]: The Canned Lube Oil Pump (CLOP) with a two-speed motor will replace both the Standby Lube Oil Pump (SLOP) and Emergency Lube Oil Pump (ELOP) on all CVN-68 Class ships. The ships have repeatedly overhauled SLOPs to replace turbine and reduction gear parts as well as replacing leaking mechanical seals at excessive costs. The ELOPs are also regularly overhauled to replace leaking mechanical seals. In addition, the installed ELOP does not meet all operational requirements for a Lube Oil System. The motor and pump are an integral piece on the CLOP which alleviates any alignment issues and a mechanical seal is no longer required. [P3A - 4 / LT308 - LHD/LHA Davits]: LT308 - LHD/LHA Davit Funding provides for the procurement of Rigid Inflatable Boat (RIB) Davits for LHA and LHD Class Ships. These allow ships to utilize Navy Standard 11M RIBs which replace antiquated Landing Craft Personnel (LCPL) boats which are no longer supported and present a maintenance burden, reduction in operational availability and jeopardize ships' ability to perform Anti-Terrorism Force Protection (ATFP) missions. [P3A - 5 / LT309 - Solid-State Lighting (SSL)]: LT309- SOLID-STATE LIGHTING (SSL) FIXTURES Solid State Lighting refers to a type of lighting that uses semiconductor Light-Emitting Diodes (LEDs), Organic Light-Emitting Diodes (OLEDs), or Polymer Light-Emitting Diodes (PLEDs) as sources of illumination rather than electrical filaments, plasma (used in arc lamps such as fluorescent lamps) or gas. Funds provide for replacement of fluorescent and incandescent lighting fixtures installed on Amphibious Class ships with a Solid-State Lighting (SSL) fixtures. [P3A - 6 / LT314 - Carrier Oil Water Separator]: A new Oil Water Separator (OWS) system will be installed on the CVN 68 Class to meet the new environmental discharge law of 15 parts per million (ppm) worldwide. System will include OWS, Oil content monitor and bilge and stripping system. The current OWSs installed on CVN 68 Class experience a high degree of costly maintenance and reliability issues and they do not meet the 15 ppm requirement. [P3A - 7 / LT316 - Patrol Coastal ECDIS]: LT316 - PATROL COASTAL MODERNIZATION The PC Sustainment Program provides necessary modifications and upgrades to keep PC 1 class ships in-service and supportable through their expected service lives (until 2025). Upgrades include Navigation upgrades, Electronic Chart Display and Information System-Navy (ECDIS-N) upgrades, and Forward Looking Infrared (FLIR) upgrades. FY16 increase due to the Navigator of the Navy direction, that all ships must be paperless by the end of FY16. [P3A - 10 / LT318 - Carriers Passive Countermeasures System (PCMS)]: classified effort [P3A - 11 / FMP Ship Units - LSD Davit]: LT322 - LSD Davit Provide Davit capabilities to meet the new OPNAV LSD boat requirement for two 11M Rigid Hull Inflatable Boats (RHIBs). Previous requirement was one 7M RHIB and one 11M RHIB. New Davit provides RHIB Launching Capability that meets Mandatory Safety of Life At Sea (SOLAS), Force Protection and Mission Requirements (Amphibious Assault; Anti-Piracy; Visit, Board, Search, and Seizure (VBSS)). [P3A - 12 / LT321 ESB SOF Backfit]: Funds provided for ESB 3 and 4 Special Operation Forces (SOF) components. Efforts include ship changes necessary to add radio infrastructure and increase bandwidth capacity, make ESB compatible with night vision devices, and to add additional aircraft operating spots. Other efforts include ship changes and services for additional Twenty-foot Equivalent Unit (TEU) capacity, increased medical services (shock/triage/forward resuscitative surgery system), and increased capacity for storage/fueling capability of MOGAS. [P3A - 13 / LT327 - Modular Refrigeration System.]: Modular Refrigeration System (MRS) replaces the existing legacy ship's stores refrigeration system (SSRS) onboard CVN68 class carriers. The legacy system is energy inefficient, space inefficient, and maintenance intensive, requiring highly skilled personnel to operate and maintain acceptable box temperatures. Most hardware associated with the legacy systems is specialized mil-spec and is either becoming unsupportable due to obsolescence, or is grossly expensive to maintain. Each MRS is comprised of a Modular Refrigeration Unit (MRU), an operating/diagnostic control panel, and small chilled water cooled flat-plate condenser. There are 15 MRUs required per hull. MRS's are self-contained hatchable MRUs with a dedicated control panel that eliminate 90% of current maintenance requirements and require minimal operator support/training.		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy				Date: February 2018	
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment			P-1 Line Item Number / Title: 0981 / 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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 \$5M Programs	P-5a			- / 143.411	- / 13.748	- / 11.356	- / 58.328	- / -	- / 58.328
P-3a	1 / LT160 - Machinery Plant Upgrades (TBD)				- / 191.274	- / 16.770	- / 20.294	- / 13.044	- / 0.000	- / 13.044
P-3a	2 / LT306 - Automated Voltage Regulator (AVR) (TBD)				- / 57.054	- / 2.600	- / 3.700	- / 1.855	- / 0.000	- / 1.855
P-3a	3 / LT307 - Carrier Canned Lube Oil Pump (TBD)				- / 24.145	- / 0.000	- / 2.950	- / 6.750	- / 0.000	- / 6.750
P-3a	4 / LT308 - LHD/LHA Davits (TBD)				- / 19.372	- / 2.665	- / 6.359	- / 0.529	- / 0.000	- / 0.529
P-3a	5 / LT309 - Solid-State Lighting (SSL) (TBD)				- / 22.031	- / 1.920	- / 0.678	- / 6.406	- / 0.000	- / 6.406
P-3a	6 / LT314 - Carrier Oil Water Separator (TBD)				- / 7.972	- / 1.600	- / 5.000	- / 5.000	- / 0.000	- / 5.000
P-3a	7 / LT316 - Patrol Coastal ECDIS (TBD)				- / 10.188	- / 0.395	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	8 / LT316 - Patrol Coastal Navigation Upgrade (TBD)				- / 12.140	- / 0.640	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	9 / LT316 - Patrol Coastal FLIR (TBD)				- / 4.100	- / 2.528	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	10 / LT318 - Carriers Passive Countermeasures System (PCMS) (TBD)				- / 52.226	- / 10.100	- / 19.225	- / 19.450	- / 0.000	- / 19.450
P-3a	11 / LT322 - LSD Boat Davit (TBD)				- / 7.413	- / 6.916	- / 9.376	- / 9.933	- / 0.000	- / 9.933
P-3a	12 / LT321 ESB SOF Backfit (TBD)				- / 19.547	- / 2.712	- / 15.404	- / 5.570	- / 0.000	- / 5.570
P-3a	13 / LT327 - Modular Refrigeration System. (TBD)				- / 0.000	- / 3.400	- / 2.567	- / 0.000	- / 0.000	- / 0.000
P-40	Total Gross/Weapon System Cost				- / 570.873	- / 65.994	- / 96.909	- / 126.865	- / 0.000	- / 126.865

Exhibits Schedule					FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Items Less than \$5M Programs	P-5a			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / LT160 - Machinery Plant Upgrades (TBD)				- / 23.814	- / 31.601	- / 25.009	- / 27.478	- / 0.000	- / 349.284
P-3a	2 / LT306 - Automated Voltage Regulator (AVR) (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 65.209
P-3a	3 / LT307 - Carrier Canned Lube Oil Pump (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 33.845
P-3a	4 / LT308 - LHD/LHA Davits (TBD)				- / 3.378	- / 0.000	- / 0.000	- / 0.005	- / 0.000	- / 32.308
P-3a	5 / LT309 - Solid-State Lighting (SSL) (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 31.035
P-3a	6 / LT314 - Carrier Oil Water Separator (TBD)				- / 3.400	- / 1.600	- / 5.000	- / 3.400	- / 0.000	- / 32.972
P-3a	7 / LT316 - Patrol Coastal ECDIS (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 10.583
P-3a	8 / LT316 - Patrol Coastal Navigation Upgrade (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 12.780
P-3a	9 / LT316 - Patrol Coastal FLIR (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 1.680	- / 8.308
P-3a	10 / LT318 - Carriers Passive Countermeasures System (PCMS) (TBD)				- / 3.400	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 104.401
P-3a	11 / LT322 - LSD Boat Davit (TBD)				- / 7.220	- / 5.748	- / 2.947	- / 0.000	- / 0.000	- / 49.553
P-3a	12 / LT321 ESB SOF Backfit (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 43.233
P-3a	13 / LT327 - Modular Refrigeration System. (TBD)				- / 2.600	- / 4.500	- / 4.500	- / 4.500	- / 11.400	- / 33.467

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy							Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment					P-1 Line Item Number / Title: 0981 / 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					FY 2020	FY 2021	FY 2022	FY 2023	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-40	Total Gross/Weapon System Cost				- / 76.447	- / 86.373	- / 70.266	- / 60.801	- / 13.080	- / 1,167.608
*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:

Baseline funds increase of +\$30.0M in this line item is a result of increases due to CVN78 transitioning to an in-service asset requiring modernization planning and execution requirements.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9								P-1 Line Item Number / Title: 0981 / Items less than \$5 Million							Aggregated Items Title: Items Less than \$5M Programs					
Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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) LT060 - MACHALTs																				
1.1) MACHALTs (Amphibs)	A		-	-	16.906	-	-	0.293	-	-	0.323	-	-	0.649	-	-	-	-	-	0.649
1.2) MACHALTs (Surface Ships) ⁽¹⁾	A		-	-	72.334	-	-	5.520	-	-	5.416	-	-	7.087	-	-	-	-	-	7.087
Subtotal: 1) LT060 - MACHALTs			-	-	89.240	-	-	5.813	-	-	5.739	-	-	7.736	-	-	-	-	-	7.736
2) LT110 - Propellers and Shafts ⁽²⁾																				
2.1) Blade Set Port/ STBD, DDG 51 CL ^{(3)(†)}	B		783,666.67	3	2.351	1,004K	1	1.004	-	-	-	1,300K	2	2.599	-	-	-	1,300K	2	2.599
2.2) Hub Port DDG51 CL ^(†)	A		1,038K	5	5.190	1,016K	1	1.016	-	-	-	1,094K	1	1.094	-	-	-	1,094K	1	1.094
2.3) Hub STBD DDG51 CL ^{(4)(†)}	A		894,500.00	8	7.156	1,016K	1	1.016	-	-	-	-	-	-	-	-	-	-	-	-
2.4) Prop Shaft DDG51 CL ^{(5)(†)}	A		1,520K	7	10.639	-	-	-	1,619K	1	1.619	-	-	-	-	-	-	-	-	-
2.5) Stern Tube DDG51 CL ^(†)	A		1,211K	14	16.959	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.6) Oil Distribution (OD) Box, STBD DDG 51 CL CPP ^(†)	A		230,416.67	12	2.765	-	-	-	279,000.00	1	0.279	285,000.00	1	0.285	-	-	-	285,000.00	1	0.285
2.7) Oil Distribution (OD) Box, Port DDG 51 CL CPP ^{(6)(†)}	A		214,600.00	5	1.073	-	-	-	279,000.00	1	0.279	-	-	-	-	-	-	-	-	-
Subtotal: 2) LT110 - Propellers and Shafts			-	-	46.133	-	-	3.036	-	-	2.177	-	-	3.978	-	-	-	-	-	3.978
3) LT120 - Carrier Propulsion Plant Inspection																				
3.1) Propulsion Plant Inspection	A		-	-	1.543	-	-	0.170	-	-	0.170	-	-	0.170	-	-	-	-	-	0.170
Subtotal: 3) LT120 - Carrier Propulsion Plant Inspection			-	-	1.543	-	-	0.170	-	-	0.170	-	-	0.170	-	-	-	-	-	0.170
4) LT130 - Steam Propulsion Items																				
4.1) Steam Propulsion Items	A		-	-	2.597	-	-	0.249	-	-	0.224	-	-	0.189	-	-	-	-	-	0.189
Subtotal: 4) LT130 - Steam Propulsion Items			-	-	2.597	-	-	0.249	-	-	0.224	-	-	0.189	-	-	-	-	-	0.189
5) LT830 - Carrier Production Engineering																				
5.1) Production Engineering	A		-	-	0.358	-	-	0.040	-	-	0.040	-	-	0.040	-	-	-	-	-	0.040
Subtotal: 5) LT830 - Carrier Production Engineering			-	-	0.358	-	-	0.040	-	-	0.040	-	-	0.040	-	-	-	-	-	0.040

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9						P-1 Line Item Number / Title: 0981 / Items less than \$5 Million						Aggregated Items Title: Items Less than \$5M Programs								
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
7) LT325 - Propulsion Shafting																				
7.1) Propulsion Shafting	A		-	-	-	-	-	2.500	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 7) LT325 - Propulsion Shafting			-	-	0.000	-	-	2.500	-	-	-	-	-	-	-	-	-	-	-	-
8) LT328 - Mobile Cleaning Recovery and Recycle System (MCRRS)																				
8.1) MCRRS Production Units ^{(7)(t)}	A		750,000.00	1	0.750	835,000.00	2	1.670	857,000.00	3	2.571	874,000.00	6	5.244	-	-	-	874,000.00	6	5.244
8.2) MCRRS Upgrades ^(t)	A		615,000.00	2	1.230	135,000.00	2	0.270	138,000.00	3	0.414	140,000.00	5	0.700	-	-	-	140,000.00	5	0.700
8.3) MCRRS Engineering Support	A		-	-	1.560	-	-	-	-	-	0.021	-	-	0.091	-	-	-	-	-	0.091
Subtotal: 8) LT328 - Mobile Cleaning Recovery and Recycle System (MCRRS)			-	-	3.540	-	-	1.940	-	-	3.006	-	-	6.035	-	-	-	-	-	6.035
9) LT330 - CVN Cybersecurity																				
9.1) LT330 - CVN Cybersecurity ⁽⁸⁾	A		-	-	-	-	-	-	-	-	-	-	-	7.280	-	-	-	-	-	7.280
Subtotal: 9) LT330 - CVN Cybersecurity			-	-	0.000	-	-	-	-	-	-	-	-	7.280	-	-	-	-	-	7.280
10) LT331 CVN78 ⁽⁹⁾																				
10.1) LT 331 CVN78	A		-	-	-	-	-	-	-	-	-	-	-	32.900	-	-	-	-	-	32.900
Subtotal: 10) LT331 CVN78			-	-	0.000	-	-	-	-	-	-	-	-	32.900	-	-	-	-	-	32.900
Total			-	-	143.411	-	-	13.748	-	-	11.356	-	-	58.328	-	-	-	-	-	58.328
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
^(t) indicates the presence of a P-5a																				
Footnotes:																				
⁽¹⁾ Due to the significant decreases, the MACHALT program was rebaselined to address MANDATORY SAFETY issues. With the decreased level of funding in this line, these Mandatory Safety Alterations are requiring four years to complete fielding. Increased cost growth (+\$2.0M) in FY19 is restoring budget line to required levels.																				
⁽²⁾ LT110 - The projected propeller shaft and Oil Distribution (OD) box prices used to generate the DON19 budget are based upon actual escalation rates calculated from past contract awards where available and from rough order of magnitude (ROM) price estimates provided by the vendor where actual award data is not available. These escalation rates typically are in the range of approximately 4.25% to 5.5%. It also should be noted that many of these controllable pitch propeller (CPP) assets are purchased from Rolls Royce Naval Marine (RRNM). The 2S COG program also procures marine gas turbine engines from RRNM, and the latest ROM estimates (letter dated 10/30/2015) provided by Rolls-Royce for gas turbines includes escalation rates of roughly 4% per year, similar to the escalation rates for CPP and shaft assets. Any pricing anomaly, such as an unexpectedly low bid from a shaft vendor to win a competitively bid contract, must be factored into the comprehensive historical data and trends. In order to ensure sufficient funds are available to execute scheduled procurements, budget requirements must be generated consistent with these escalation rates.																				
⁽³⁾ LT110 - Procurement cost for FY19 cost element 2.1, Blade Set PORT/STBD, DDG51 CL, based upon actual FY17 contract award price.																				
⁽⁴⁾ LT110 - FY16 planned procurement of one (1) Hub STBD dropped from FY16 procurement plans after FY16 Blade Set award came in at double the projected cost.																				
⁽⁵⁾ LT110 - Changes from PB18. FY17 Blade Set PORT/STBD procurement QTY reduced from two (2) to one (1). Total FY17 adjustment of \$849K assessed for propellers and shafts unit cost growth.																				
⁽⁶⁾ LT110 - Changes from PB18. FY19 OD Box, PORT procurement QTY reduced from two (2) to zero (0).																				
⁽⁷⁾ LT328 - FY17 funds realigned for base contract award of 2 production units and 2 spare kits.																				

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0981 / Items less than \$5 Million	Aggregated Items Title: Items Less than \$5M Programs
⁽⁸⁾ Funds are added in FY19 to provide cybersecurity of carrier assets and infrastructure with emphasis to prevent network intrusion on CVNs. Efforts consists of (1) boundary defense mods, (2)situational awareness mods and (3) physical security mods. Quantities vary per hull and are fundamentally different; therefore not shown since not suited for comparison. Hulls will receive different mods in varying combinations; so each hull cost is mutually exclusive of others costs. ⁽⁹⁾ CVN78 will transition to a PMS 312 in-service asset with modernization planning and execution requirements. Modernization is required during the FY20 planned incremental availability (PIA) to upgrade the configuration of Machinery Control and Monitoring System (MCMS) valve operator architecture from Ring to star configuration, upgrade the Aircrew Survival Equipment maintenance shops and flight/survival gear storage rooms, install increased waste handling/ management equipment upgrades to support Plasma Arc Waste Destruction System (PAWDS and update the Dual Band Radar (DBR) Power Quality Data Acquisition System (PQDAS).		

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Exhibit P-5a, Procurement History and Planning: PB 2019 Navy									Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9			P-1 Line Item Number / Title: 0981 / Items less than \$5 Million						Aggregated Items: Items Less than \$5M Programs			
Item Number / Title [DODIC]	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
2) LT110 - Propellers and Shafts												
2.1) Blade Set Port/STBD, DDG 51 CL ⁽³⁾		2016	Rolls Royce / MS	C / FP	NAVSUP	May 2017	Apr 2019	1	1,218K	Y		
2.1) Blade Set Port/STBD, DDG 51 CL ⁽³⁾		2017	Rolls Royce / MS	C / FP	NAVSUP	Jan 2018	Dec 2019	1	1,004K	Y		
2.1) Blade Set Port/STBD, DDG 51 CL ⁽³⁾		2019	Rolls Royce / MS	C / FP	NAVSUP	Sep 2019	Aug 2021	2	1,300K	Y		
2.2) Hub Port DDG51 CL		2016	Rolls Royce / MS	C / FP	NAVSUP	Sep 2016	Feb 2018	1	979,850.00	Y		
2.2) Hub Port DDG51 CL		2017	Rolls Royce / MS	C / FP	NAVSUP	Jan 2018	Jan 2020	1	1,016K	Y		
2.2) Hub Port DDG51 CL		2019	Rolls Royce / MS	C / FP	NAVSUP	Sep 2019	Sep 2021	1	1,094K	Y		
2.3) Hub STBD DDG51 CL ⁽⁴⁾		2017	Rolls Royce / MS	C / FP	NAVSUP	Jan 2018	Jan 2020	1	1,016K	Y		
2.4) Prop Shaft DDG51 CL ⁽⁵⁾		2016	Erie Forge / PA	C / FP	NAVSUP	Sep 2016	Aug 2018	1	1,066K	Y		
2.4) Prop Shaft DDG51 CL ⁽⁵⁾		2018	Erie Forge / PA	C / FP	NAVSUP	Sep 2018	Aug 2020	1	1,619K	Y		
2.5) Stern Tube DDG51 CL		2015	Erie Forge / PA	C / FP	NAVSUP	Jul 2015	Jan 2018	2	1,243K	Y		
2.5) Stern Tube DDG51 CL		2016	Erie Forge / PA	C / FP	NAVSUP	Sep 2016	Aug 2018	1	870,631.00	Y		
2.6) Oil Distribution (OD) Box, STBD DDG 51 CL CPP		2018	Rolls Royce / MS	C / FP	NAVSUP	May 2018	Nov 2019	1	279,000.00	Y		
2.6) Oil Distribution (OD) Box, STBD DDG 51 CL CPP		2019	Rolls Royce / MS	C / FP	NAVSUP	May 2019	Nov 2020	1	285,000.00	Y		
2.7) Oil Distribution (OD) Box, Port DDG 51 CL CPP ⁽⁶⁾		2018	Rolls Royce / MS	C / FP	NAVSUP	May 2018	Nov 2019	1	279,000.00	Y		
8) LT328 - Mobile Cleaning Recovery and Recycle System (MCRRS)												
8.1) MCRRS Production Units ⁽⁷⁾		2017 ⁽¹⁰⁾	Triverus, LLC / Palmer, AK	C / FFP	Palmer, AK	Apr 2018	Apr 2019	2	835,000.00	Y		
8.1) MCRRS Production Units ⁽⁷⁾		2018	Triverus, LLC / Palmer, AK	C / FFP	Palmer, AK	Apr 2018	Apr 2019	3	857,000.00	Y		
8.1) MCRRS Production Units ⁽⁷⁾		2019	Triverus, LLC / Palmer, AK	C / FFP	Palmer, AK	Oct 2018	Oct 2019	6	874,000.00	N		
8.2) MCRRS Upgrades		2017 ⁽¹¹⁾	Triverus, LLC / Palmer, AK	C / FFP	Palmer, AK	Apr 2018	Apr 2019	2	135,000.00	Y		
8.2) MCRRS Upgrades		2018	Triverus, LLC / Palmer, AK	C / FFP	Palmer, AK	Apr 2018	Apr 2019	3	138,000.00	Y		
8.2) MCRRS Upgrades		2019	Triverus, LLC / Palmer, AK	C / FFP	Palmer, AK	Oct 2018	Oct 2019	5	140,000.00	N		
Footnotes: ⁽¹⁰⁾ Date of First Scheduled Delivery is 2018-8 (4 months) ⁽¹¹⁾ Date of First Scheduled Delivery is 2018-8 (4 months)												

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Exhibit P-3a, Individual Modification: PB 2019 Navy						Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0981 / Items less than \$5 Million				Modification Number / Title: 1 / LT160 - Machinery Plant Upgrades			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	191.274	16.770	20.294	13.044	0.000	13.044	23.814	31.601	25.009	27.478	0.000	349.284
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	191.274	16.770	20.294	13.044	0.000	13.044	23.814	31.601	25.009	27.478	0.000	349.284
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	191.274	16.770	20.294	13.044	0.000	13.044	23.814	31.601	25.009	27.478	0.000	349.284
(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:

LT160 - MACHINERY PLANT UPGRADES (INTEGRATED COMMUNICATIONS AND ADVANCED NETWORK (ICAN)

ICAN provides core infrastructure (node rooms, air blown fiber optic cable plant, network services) for integrating voice, video and data systems. This capability is easily upgradable for rapid and cost effective expansion to support new technologies, such as IT-21, and is compatible with the Navy integrated Information Networks MOA.

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0981 / Items less than \$5 Million						Modification Number / Title: 1 / LT160 - Machinery Plant Upgrades			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: Machinery Plant Upgrades				Modification Type: TBD				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> LT160 - Machinery Plant Upgrades													
B Kits													
Recurring													
1.1.1) Machinery Plant Upgrades - NonOrganic ⁽¹²⁾	30 / 74.386	4 / 4.927	3 / 6.704	3 / 5.418	- / -	3 / 5.418	4 / 6.949	4 / 12.085	4 / 9.475	4 / 10.349	- / -	56 / 130.293	
<i>Subtotal: Recurring</i>	- / 74.386	- / 4.927	- / 6.704	- / 5.418	- / -	- / 5.418	- / 6.949	- / 12.085	- / 9.475	- / 10.349	- / 0.000	- / 130.293	
<i>Subtotal: LT160 - Machinery Plant Upgrades</i>	30 / 74.386	4 / 4.927	3 / 6.704	3 / 5.418	- / -	3 / 5.418	4 / 6.949	4 / 12.085	4 / 9.475	4 / 10.349	- / -	56 / 130.293	
<i>Subtotal: Procurement, All Modification Items</i>	- / 74.386	- / 4.927	- / 6.704	- / 5.418	- / -	- / 5.418	- / 6.949	- / 12.085	- / 9.475	- / 10.349	- / 0.000	- / 130.293	
Installation													
<i>Modification Item 1 of 1:</i> LT160 - Machinery Plant Upgrades	- / 116.888	- / 11.843	- / 13.590	- / 7.626	- / 0.000	- / 7.626	- / 16.865	- / 19.516	- / 15.534	- / 17.129	- / 0.000	- / 218.991	
<i>Subtotal: Installation</i>	- / 116.888	- / 11.843	- / 13.590	- / 7.626	- / -	- / 7.626	- / 16.865	- / 19.516	- / 15.534	- / 17.129	- / 0.000	- / 218.991	
Total													
Total Cost (Procurement + Support + Installation)	191.274	16.770	20.294	13.044	0.000	13.044	23.814	31.601	25.009	27.478	0.000	349.284	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0981 / Items less than \$5 Million										Modification Number / Title: 1 / LT160 - Machinery Plant Upgrades											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: LT160 - Machinery Plant Upgrades																															
Manufacturer Information																															
Manufacturer Name: various															Manufacturer Location: various																
Administrative Leadtime (<i>in Months</i>): 2															Production Leadtime (<i>in Months</i>): 5																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates		Nov 2016				Nov 2017				Nov 2018																					
Delivery Dates		Apr 2017				Apr 2018				Apr 2019																					
Installation Information																															
Method of Implementation: ALT:: Installation Name: Machinery Plant Upgrades																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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		28 / 116.383		2 / 5.922		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		30 / 122.305							
FY 2017		0 / 0.505		1 / 4.421		3 / 8.600		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		4 / 13.526							
FY 2018		- / -		0 / 1.500		1 / 3.032		2 / 3.851		0 / 0.000		2 / 3.851		- / -		- / -		- / -		- / -		0 / 0.000		3 / 8.383							
FY 2019		- / -		- / -		0 / 1.958		1 / 2.375		0 / 0.000		1 / 2.375		2 / 7.395		- / -		- / -		- / -		0 / 0.000		3 / 11.728							
FY 2020		- / -		- / -		- / -		0 / 1.400		0 / 0.000		0 / 1.400		2 / 7.470		2 / 7.341		- / -		- / -		0 / 0.000		4 / 16.211							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		0 / 2.000		2 / 7.175		2 / 4.764		- / -		0 / 0.000		4 / 13.939							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 5.000		2 / 4.770		2 / 8.565		0 / 0.000		4 / 18.335							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 6.000		2 / 8.564		2 / 0.000		4 / 14.564							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		28 / 116.888		3 / 11.843		4 / 13.590		3 / 7.626		0 / 0.000		3 / 7.626		4 / 16.865		4 / 19.516		4 / 15.534		4 / 17.129		2 / 0.000		56 / 218.991							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	28	-	2	-	1	-	3	1	-	1	1	1	-	1	1	2	-	1	1	2	-	-	2	-	2	-	2	1	1	2	56
Out	25	3	-	1	1	-	1	1	-	1	1	2	-	-	1	2	2	1	1	1	-	1	-	2	-	1	1	1	1	5	56
Footnotes: ⁽¹²⁾ Installation funds are also required in the year prior to install for DSA (hull planning yard ship checks, installation drawing development), Advanced Planning, and Integrated Logistics Support (ILS). The Machinery Plant Upgrade project within the CVN Fleet Modernization Program (FMP) encompasses CVN Machinery Control Systems, Ship Control (Navigation/Steering), Integrated Voice Control Networks, Announcing Systems and Shipboard Air Traffic Control Communication Systems. The machinery plant upgrade modernization alterations currently consist of greater than 40 different Ship Change Documents (SCD) with a cost value of approximately \$42M for all the alterations combined. Individual SCDs can range in cost from \$5K (for software only changes) to ~ \$14M for major system upgrade procurements. The																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0981 / Items less than \$5 Million	Modification Number / Title: 1 / LT160 - Machinery Plant Upgrades
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
range of SCD installs can cost as low as \$100k and as high as \$4 million for individual SCDs. During each CNO availability, we schedule and complete a subset of these 40+ alterations. Each hull is different receiving varying subsets of the 40+ SCDs depending on individual ship configurations. These alts are scheduled for installation over 3-4 availabilities (which may be 9-12 years) with many installations occurring in later years of the FYDP. Additionally, the machinery plant upgrade program is technology driven and many alterations are still being finalized in the Navy modernization Program (i.e. Ship Change Document (SCD) development) process for installation in later years. New SCDs continue to be developed to proactively address obsolescence issues associated with ever changing technology. Changes from PB18: FY17: Congressional Mark - \$6.135M - "Improving funds mgmt: Machinery plant upgrades installation funding ahead of need due to contract delay"; FY19: program under execution reductions \$7.296M = \$1.733M applied to LT160 procurement + \$4.363M applied to LT160 installation + \$1.2M applied to LT314 procurement.		

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Exhibit P-3a, Individual Modification: PB 2019 Navy						Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0981 / Items less than \$5 Million				Modification Number / Title: 2 / LT306 - Automated Voltage Regulator (AVR)			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	57.054	2.600	3.700	1.855	0.000	1.855	0.000	0.000	0.000	0.000	0.000	65.209
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	57.054	2.600	3.700	1.855	0.000	1.855	0.000	0.000	0.000	0.000	0.000	65.209
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	57.054	2.600	3.700	1.855	0.000	1.855	0.000	0.000	0.000	0.000	0.000	65.209
(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 CVN Automatic Voltage Regulator (AVR) is a microprocessor based voltage regulator system for the NIMITZ Class, programmed to replace the legacy analog voltage regulator, which, although operational, lacks the improved reliability and lower maintenance costs of the AVR. It controls the output voltage of a turbine generator (TG), which converts steam into the electricity used for aircraft and combat operations, and reactor cooling.

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0981 / Items less than \$5 Million						Modification Number / Title: 2 / LT306 - Automated Voltage Regulator (AVR)			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: Auto Voltage Regulator				Modification Type: TBD				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: LT306 - Automated Voltage Regulator (AVR)													
B Kits													
Recurring													
1.1.1) AVR - NonOrganic ⁽¹³⁾	62 / 29.975	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	62 / 29.975	
1.1.2) Field Engineering Services - NonOrganic	- / 1.547	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.547	
Subtotal: Recurring	- / 31.522	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 31.522	
Subtotal: LT306 - Automated Voltage Regulator (AVR)	62 / 31.522	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	62 / 31.522	
Subtotal: Procurement, All Modification Items	- / 31.522	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 31.522	
Installation													
Modification Item 1 of 1: LT306 - Automated Voltage Regulator (AVR)	- / 25.532	- / 2.600	- / 3.700	- / 1.855	- / 0.000	- / 1.855	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 33.687	
Subtotal: Installation	- / 25.532	- / 2.600	- / 3.700	- / 1.855	- / -	- / 1.855	- / -	- / -	- / -	- / -	- / 0.000	- / 33.687	
Total													
Total Cost (Procurement + Support + Installation)	57.054	2.600	3.700	1.855	0.000	1.855	0.000	0.000	0.000	0.000	0.000	65.209	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0981 / Items less than \$5 Million										Modification Number / Title: 2 / LT306 - Automated Voltage Regulator (AVR)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: LT306 - Automated Voltage Regulator (AVR)																															
Manufacturer Information																															
Manufacturer Name: NG P/CS															Manufacturer Location: MD																
Administrative Leadtime (in Months): 6															Production Leadtime (in Months): 18																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates																															
Delivery Dates																															
Installation Information																															
Method of Implementation: SHIPYARD:: Installation Name: AVR																															
Installation Cost		Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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		41 / 25.532		8 / 2.600		8 / 3.700		4 / 1.855		0 / 0.000		4 / 1.855		- / -		- / -		- / -		- / -		0 / 0.000		61 / 33.687							
FY 2017		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		41 / 25.532		8 / 2.600		8 / 3.700		4 / 1.855		0 / 0.000		4 / 1.855		- / -		- / -		- / -		- / -		0 / 0.000		61 / 33.687							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	41	8	-	-	-	-	-	-	8	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	61
Out	41	-	-	8	-	-	-	-	-	-	-	-	-	8	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	61
Footnotes: ⁽¹³⁾ Note: AVRs procured = 62. AVRs to be installed = 61. The difference between the 62 procured vs 61 installed is due to one AVR purchased being used at the manufacturer's plant as a unit to test new circuit cards before issuing to the fleet. Installation cost per shipset of AVRs ~ \$3.6M. Total cost for the FY17 shipset installs is \$3.6M. Planning and long lead material purchase (to support 1st qtr FY17 avail start) obligated \$1.0M in prior year funds; and has \$2.6M for the actual install cost in FY17.																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0981 / Items less than \$5 Million					Modification Number / Title: 3 / LT307 - Carrier Canned Lube Oil Pump		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	24.145	0.000	2.950	6.750	0.000	6.750	0.000	0.000	0.000	0.000	0.000	33.845
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	24.145	0.000	2.950	6.750	0.000	6.750	0.000	0.000	0.000	0.000	0.000	33.845
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	24.145	0.000	2.950	6.750	0.000	6.750	0.000	0.000	0.000	0.000	0.000	33.845
<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 Canned Lube Oil Pump (CLOP) with a two-speed motor will replace both the Standby Lube Oil Pump (SLOP) and Emergency Lube Oil Pump (ELOP) on all CVN-68 Class ships. The ships have repeatedly overhauled SLOPs to replace turbine and reduction gear parts as well as replacing leaking mechanical seals at excessive costs. The ELOPs are also regularly overhauled to replace leaking mechanical seals. In addition, the installed ELOP does not meet all operational requirements for Lube Oil System. The motor and pump are an integral piece on the CLOP which alleviates any alignment issues and a mechanical seal is no longer required.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0981 / Items less than \$5 Million					Modification Number / Title: 3 / LT307 - Carrier Canned Lube Oil Pump			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: Carrier Canned Lube Oil Pump					Modification Type: TBD					Related RDT&E PEs:			
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> LT307 - Carrier Canned Lube Oil Pump													
B Kits													
Recurring													
1.1.1) Canned Lube Oil Pump - NonOrganic ⁽¹⁴⁾	16 / 5.000	- / -	8 / 2.200	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	24 / 7.200	
<i>Subtotal: Recurring</i>	<i>- / 5.000</i>	<i>- / -</i>	<i>- / 2.200</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 0.000</i>	<i>- / 7.200</i>	
<i>Subtotal: LT307 - Carrier Canned Lube Oil Pump</i>	<i>16 / 5.000</i>	<i>- / -</i>	<i>8 / 2.200</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>24 / 7.200</i>	
<i>Subtotal: Procurement, All Modification Items</i>	<i>- / 5.000</i>	<i>- / -</i>	<i>- / 2.200</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 0.000</i>	<i>- / 7.200</i>	
Installation													
<i>Modification Item 1 of 1:</i> LT307 - Carrier Canned Lube Oil Pump	- / 19.145	- / 0.000	- / 0.750	- / 6.750	- / 0.000	- / 6.750	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 26.645	
<i>Subtotal: Installation</i>	<i>- / 19.145</i>	<i>- / -</i>	<i>- / 0.750</i>	<i>- / 6.750</i>	<i>- / -</i>	<i>- / 6.750</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 0.000</i>	<i>- / 26.645</i>	
Total													
Total Cost (Procurement + Support + Installation)	24.145	0.000	2.950	6.750	0.000	6.750	0.000	0.000	0.000	0.000	0.000	33.845	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0981 / Items less than \$5 Million										Modification Number / Title: 3 / LT307 - Carrier Canned Lube Oil Pump											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: LT307 - Carrier Canned Lube Oil Pump																															
Manufacturer Information																															
Manufacturer Name: IMO Pumps															Manufacturer Location: Monroe, NC																
Administrative Leadtime <i>(in Months)</i> : 2															Production Leadtime <i>(in Months)</i> : 12																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates						Apr 2018																									
Delivery Dates						Apr 2019																									
Installation Information																															
Method of Implementation: Shipyard:: Installation Name: Canned Lube Oil Pump																															
Installation Cost		Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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		16 / 19.145		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		16 / 19.145							
FY 2017		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2018		- / -		- / -		0 / 0.750		8 / 6.750		0 / 0.000		8 / 6.750		- / -		- / -		- / -		- / -		0 / 0.000		8 / 7.500							
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		16 / 19.145		- / -		0 / 0.750		8 / 6.750		0 / 0.000		8 / 6.750		- / -		- / -		- / -		- / -		0 / 0.000		24 / 26.645							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	16	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24
Out	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	24
Footnotes: ⁽¹⁴⁾ Note: Installation costs for Lube Oil Service Pump effort has been updated to reflect actual costs from the performing activity. Installation funds are also required in the year prior to install for DSA (hull planning yard ship checks, installation drawing development), Advanced Planning, and Integrated Logistics Support (ILS)																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0981 / Items less than \$5 Million	Modification Number / Title: 4 / LT308 - LHD/LHA Davits

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	19.372	2.665	6.359	0.529	0.000	0.529	3.378	0.000	0.000	0.005	0.000	32.308
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	19.372	2.665	6.359	0.529	0.000	0.529	3.378	0.000	0.000	0.005	0.000	32.308
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	19.372	2.665	6.359	0.529	0.000	0.529	3.378	0.000	0.000	0.005	0.000	32.308
(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 shipalt installs Boat (RIB) Davits replacing Land Craft Personnel (LCPL) Davits on the LHA/LHD Class Ships.

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy									Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0981 / Items less than \$5 Million					Modification Number / Title: 4 / LT308 - LHD/LHA Davits				
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: Boat (RIB) Davits				Modification Type: TBD					Related RDT&E PEs:				
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: LT308 - LHD/LHA Davits													
B Kits													
Recurring													
1.1.1) Boat (RIB) Davits - NonOrganic	9 / 7.725	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	9 / 7.725	
Subtotal: Recurring	- / 7.725	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 7.725	
Subtotal: LT308 - LHD/LHA Davits	9 / 7.725	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	9 / 7.725	
Subtotal: Procurement, All Modification Items	- / 7.725	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 7.725	
Installation													
Modification Item 1 of 1: LT308 - LHD/LHA Davits	- / 11.647	- / 2.665	- / 6.359	- / 0.529	- / 0.000	- / 0.529	- / 3.378	- / 0.000	- / 0.000	- / 0.005	- / 0.000	- / 24.583	
Subtotal: Installation	- / 11.647	- / 2.665	- / 6.359	- / 0.529	- / -	- / 0.529	- / 3.378	- / -	- / -	- / 0.005	- / 0.000	- / 24.583	
Total													
Total Cost (Procurement + Support + Installation)	19.372	2.665	6.359	0.529	0.000	0.529	3.378	0.000	0.000	0.005	0.000	32.308	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0981 / Items less than \$5 Million										Modification Number / Title: 4 / LT308 - LHD/LHA Davits											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: LT308 - LHD/LHA Davits																															
Manufacturer Information																															
Manufacturer Name: Not Specified.															Manufacturer Location: Not Specified..																
Administrative Leadtime <i>(in Months)</i> : 0															Production Leadtime <i>(in Months)</i> : 0																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates																															
Delivery Dates																															
Installation Information																															
Method of Implementation: ALT:: Installation Name: Boat (RIB) Davits																															
Installation Cost		Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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 / 11.647		1 / 2.665		2 / 6.359		0 / 0.529		0 / 0.000		0 / 0.529		1 / 3.378		- / -		- / -		0 / 0.005		0 / 0.000		9 / 24.583							
FY 2017		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		5 / 11.647		1 / 2.665		2 / 6.359		0 / 0.529		0 / 0.000		0 / 0.529		1 / 3.378		- / -		- / -		0 / 0.005		0 / 0.000		9 / 24.583							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	5	-	-	-	1	1	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9
Out	4	-	1	-	-	-	-	1	1	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy						Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0981 / Items less than \$5 Million				Modification Number / Title: 5 / LT309 - Solid-State Lighting (SSL)			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	22.031	1.920	0.678	6.406	0.000	6.406	0.000	0.000	0.000	0.000	0.000	31.035
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	22.031	1.920	0.678	6.406	0.000	6.406	0.000	0.000	0.000	0.000	0.000	31.035
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	22.031	1.920	0.678	6.406	0.000	6.406	0.000	0.000	0.000	0.000	0.000	31.035
(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:

Procure/Install solid state lighting fixtures to replace fluorescent and incandescent lighting fixtures installed on Amphibious Class ships.

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0981 / Items less than \$5 Million						Modification Number / Title: 5 / LT309 - Solid-State Lighting (SSL)			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: Solid State Lighting				Modification Type: TBD				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: LT309 - Solid-State Lighting (SSL)													
B Kits													
Recurring													
1.1.1) Solid State Lighting - NonOrganic	27 / 11.281	2 / 1.068	- / -	8 / 3.208	- / -	8 / 3.208	- / -	- / -	- / -	- / -	- / -	37 / 15.557	
Subtotal: Recurring	- / 11.281	- / 1.068	- / -	- / 3.208	- / -	- / 3.208	- / -	- / -	- / -	- / -	- / 0.000	- / 15.557	
Subtotal: LT309 - Solid-State Lighting (SSL)	27 / 11.281	2 / 1.068	- / -	8 / 3.208	- / -	8 / 3.208	- / -	- / -	- / -	- / -	- / -	37 / 15.557	
Subtotal: Procurement, All Modification Items	- / 11.281	- / 1.068	- / -	- / 3.208	- / -	- / 3.208	- / -	- / -	- / -	- / -	- / 0.000	- / 15.557	
Support (All Modification Items)													
2.1) Engineering Services	- / -	- / 0.750	- / -	- / 0.625	- / -	- / 0.625	- / -	- / -	- / -	- / -	- / -	- / 1.375	
Subtotal: Support	- / 0.000	- / 0.750	- / -	- / 0.625	- / -	- / 0.625	- / -	- / -	- / -	- / -	- / 0.000	- / 1.375	
Installation													
Modification Item 1 of 1: LT309 - Solid-State Lighting (SSL)	- / 10.750	- / 0.102	- / 0.678	- / 2.573	- / 0.000	- / 2.573	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 14.103	
Subtotal: Installation	- / 10.750	- / 0.102	- / 0.678	- / 2.573	- / -	- / 2.573	- / -	- / -	- / -	- / -	- / 0.000	- / 14.103	
Total													
Total Cost (Procurement + Support + Installation)	22.031	1.920	0.678	6.406	0.000	6.406	0.000	0.000	0.000	0.000	0.000	31.035	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0981 / Items less than \$5 Million										Modification Number / Title: 5 / LT309 - Solid-State Lighting (SSL)											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: LT309 - Solid-State Lighting (SSL)																															
Manufacturer Information																															
Manufacturer Name: Energy Focus Inc															Manufacturer Location: Solon, OH																
Administrative Leadtime (in Months): 3															Production Leadtime (in Months): 6																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates		Dec 2016								Dec 2018																					
Delivery Dates		Jun 2017								Jun 2019																					
Installation Information																															
Method of Implementation: ALT:: Installation Name: Solid State Lighting																															
Installation Cost		Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		To Complete		Total								
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)								
Prior Years		27 / 10.750		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		27 / 10.750							
FY 2017		- / -		0 / 0.102		2 / 0.678		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 0.780							
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2019		- / -		- / -		- / -		8 / 2.573		0 / 0.000		8 / 2.573		- / -		- / -		- / -		- / -		0 / 0.000		8 / 2.573							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		27 / 10.750		0 / 0.102		2 / 0.678		8 / 2.573		0 / 0.000		8 / 2.573		- / -		- / -		- / -		- / -		0 / 0.000		37 / 14.103							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	27	-	-	-	-	2	-	-	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37
Out	27	-	-	-	-	-	2	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy						Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0981 / Items less than \$5 Million				Modification Number / Title: 6 / LT314 - Carrier Oil Water Separator			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	7.972	1.600	5.000	5.000	0.000	5.000	3.400	1.600	5.000	3.400	0.000	32.972
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	7.972	1.600	5.000	5.000	0.000	5.000	3.400	1.600	5.000	3.400	0.000	32.972
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	7.972	1.600	5.000	5.000	0.000	5.000	3.400	1.600	5.000	3.400	0.000	32.972
(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:

A new Oil Water Separator (OWS) system will be installed on the CVN 68 Class to meet the new environmental discharge law of 15 parts per million (ppm) worldwide. System will include OWS, Oil content monitor and bilge and stripping system. The current OWSs installed on CVN 68 Class experience a high degree of costly maintenance and reliability issues and they do not meet the 15 ppm requirement.

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0981 / Items less than \$5 Million					Modification Number / Title: 6 / LT314 - Carrier Oil Water Separator			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: Carrier Oil Water Separator				Modification Type: TBD				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> LT314 - Carrier Oil Water Separator													
B Kits													
Recurring													
1.1.1) Oil Water Separator - NonOrganic ⁽¹⁵⁾	2 / 1.160	2 / 1.200	2 / 1.200	2 / 1.200	- / -	2 / 1.200	- / -	2 / 1.200	2 / 1.200	- / -	- / -	12 / 7.160	
<i>Subtotal: Recurring</i>	- / 1.160	- / 1.200	- / 1.200	- / 1.200	- / -	- / 1.200	- / -	- / 1.200	- / 1.200	- / -	- / 0.000	- / 7.160	
<i>Subtotal: LT314 - Carrier Oil Water Separator</i>	2 / 1.160	2 / 1.200	2 / 1.200	2 / 1.200	- / -	2 / 1.200	- / -	2 / 1.200	2 / 1.200	- / -	- / -	12 / 7.160	
<i>Subtotal: Procurement, All Modification Items</i>	- / 1.160	- / 1.200	- / 1.200	- / 1.200	- / -	- / 1.200	- / -	- / 1.200	- / 1.200	- / -	- / 0.000	- / 7.160	
Installation													
<i>Modification Item 1 of 1:</i> LT314 - Carrier Oil Water Separator	- / 6.812	- / 0.400	- / 3.800	- / 3.800	- / 0.000	- / 3.800	- / 3.400	- / 0.400	- / 3.800	- / 3.400	- / 0.000	- / 25.812	
<i>Subtotal: Installation</i>	- / 6.812	- / 0.400	- / 3.800	- / 3.800	- / -	- / 3.800	- / 3.400	- / 0.400	- / 3.800	- / 3.400	- / 0.000	- / 25.812	
Total													
Total Cost (Procurement + Support + Installation)	7.972	1.600	5.000	5.000	0.000	5.000	3.400	1.600	5.000	3.400	0.000	32.972	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0981 / Items less than \$5 Million										Modification Number / Title: 6 / LT314 - Carrier Oil Water Separator												
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																	
Modification Item 1 of 1: LT314 - Carrier Oil Water Separator																																
Manufacturer Information																																
Manufacturer Name: TBD															Manufacturer Location: TBD																	
Administrative Leadtime <i>(in Months)</i> : 2															Production Leadtime <i>(in Months)</i> : 12																	
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023						
Contract Dates		Nov 2016				Nov 2017				Nov 2018								Nov 2020														
Delivery Dates		Nov 2017				Nov 2018				Nov 2019								Nov 2021														
Installation Information																																
Method of Implementation: AIT:: Installation Name: Oil Water Separator																																
Installation Cost		Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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		2 / 6.812	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 6.812									
FY 2017		- / -	0 / 0.400		2 / 3.400		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		2 / 3.800									
FY 2018		- / -	- / -		0 / 0.400		2 / 3.300		0 / 0.000		2 / 3.300		- / -		- / -		- / -		- / -		0 / 0.000		2 / 3.700									
FY 2019		- / -	- / -		- / -		0 / 0.500		0 / 0.000		0 / 0.500		2 / 3.400		- / -		- / -		- / -		0 / 0.000		2 / 3.900									
FY 2020		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -									
FY 2021		- / -	- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.400		2 / 3.400		- / -		0 / 0.000		2 / 3.800									
FY 2022		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.400		2 / 3.400		0 / 0.000		2 / 3.800									
FY 2023		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -									
To Complete		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -									
Total		2 / 6.812	0 / 0.400		2 / 3.800		2 / 3.800		0 / 0.000		2 / 3.800		2 / 3.400		0 / 0.400		2 / 3.800		2 / 3.400		0 / 0.000		12 / 25.812									
Installation Schedule																																
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot	
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
In	2	-	-	-	-	-	-	2	-	-	-	-	-	2	-	-	-	2	-	-	-	-	-	2	-	-	-	-	2	-	-	12
Out	-	2	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2	-	2	-	-	-	-	-	2	-	-	-	-	2	12
Footnotes: ⁽¹⁵⁾ Procurements/installs planned to level load the AIT based on latest Carrier Availability schedule. Installation funds are also required in the year prior to install for DSA (hull planning yard ship checks, installation drawing development), Advanced Planning, and Integrated Logistics Support (ILS). Changes from PB18: FDNF Carrier (CVN76) OWS planned for FY20 installation (FY19 procurement) was deferred to FY23 installation (FY22 procurement) after return to CONUS. FDNF avails are 4 months in duration. OWS installation requires longer duration availability (PIA/DPIA) in order to complete the installation in one availability period (installation cannot be done incrementally). Decision was made based on lessons learned during the initial installation of OWS during FY16 availability on CVN71.																																

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0981 / Items less than \$5 Million	Modification Number / Title: 7 / LT316 - Patrol Coastal ECDIS

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	10.188	0.395	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	10.583
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	10.188	0.395	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	10.583
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	10.188	0.395	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	10.583
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Dollars)</i>	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Funding provided for Electronic Chart Display Information System-Navy (ECDIS-N) for the Patrol Coastal Ships. This modification installs hardware and software for an approved ECDIS-N for digital nautical charts aboard the PC-1 Class ships per CNO direction to transition from paper to electronic charts by the end of FY16.

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LI 0981 - Items less than \$5 Million
Navy

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Exhibit P-3a, Individual Modification: PB 2019 Navy												Date: February 2018																			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0981 / Items less than \$5 Million										Modification Number / Title: 7 / LT316 - Patrol Coastal ECDIS											
ID Code (A=Service Ready, B=Not Service Ready) :														MDAP/MAIS Code:																	
Modification Item 1 of 1: LT316 - Patrol Coastal ECDIS																															
Manufacturer Information																															
Manufacturer Name: NORTHROP GRUMMAN SYSTEEMS CORP. ⁽¹⁷⁾														Manufacturer Location: CHARLOTTESVILLE, VA																	
Administrative Leadtime <i>(in Months)</i> : 3														Production Leadtime <i>(in Months)</i> : 6																	
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates																															
Delivery Dates																															
Installation Information																															
Method of Implementation: AIT:: Installation Name: ECDIS-N																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		12 / 5.477		1 / 0.395		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		13 / 5.872					
FY 2017		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
Total		12 / 5.477		1 / 0.395		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		13 / 5.872					
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	12	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13
Out	10	2	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13
Footnotes: ⁽¹⁶⁾ The Navigator of the Navy directed all ships to be paperless by the end of FY16. To comply, PCs must receive the navigation and ECDIS-N installations. ⁽¹⁷⁾ Installing 8 units in FY16 to meet the Navigator of the Navy requirement by end of FY16 per COMPACFLT/COMUSFLTFORCOM INSTRUCTION 3530.1A.																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0981 / Items less than \$5 Million					Modification Number / Title: 8 / LT316 - Patrol Coastal Navigation Upgrade		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	12.140	0.640	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	12.780
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	12.140	0.640	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	12.780
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	12.140	0.640	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	12.780
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Funding provided for Navigation Upgrades for the Patrol Coastal Ships. The navigation sensor suite modernization provides essential technology improvements using the mobility mission support equipment, satellite-based position keeping, electronic heading, and automatic helm control.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy									Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0981 / Items less than \$5 Million					Modification Number / Title: 8 / LT316 - Patrol Coastal Navigation Upgrade				
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: PC Navigation Upgrade				Modification Type: TBD				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> LT316 - Patrol Coastal Navigation Upgrade													
B Kits													
Recurring													
1.1.1) Navigation Upgrade - NonOrganic ⁽¹⁸⁾	13 / 4.327	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	13 / 4.327	
<i>Subtotal: Recurring</i>	- / 4.327	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 4.327	
<i>Subtotal: LT316 - Patrol Coastal Navigation Upgrade</i>	13 / 4.327	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	13 / 4.327	
<i>Subtotal: Procurement, All Modification Items</i>	- / 4.327	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 4.327	
Installation													
<i>Modification Item 1 of 1:</i> LT316 - Patrol Coastal Navigation Upgrade	- / 7.813	- / 0.640	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 8.453	
<i>Subtotal: Installation</i>	- / 7.813	- / 0.640	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 8.453	
Total													
Total Cost (Procurement + Support + Installation)	12.140	0.640	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	12.780	

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0981 / Items less than \$5 Million	Modification Number / Title: 8 / LT316 - Patrol Coastal Navigation Upgrade

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

Modification Item 1 of 1: LT316 - Patrol Coastal Navigation Upgrade

Manufacturer Information

Manufacturer Name: TBD				Manufacturer Location: TBD			
Administrative Leadtime (in Months): 3				Production Leadtime (in Months): 15			
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Contract Dates							
Delivery Dates							

Installation Information

Method of Implementation: ALT:: Installation Name: Navigation Upgrade

Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	12 / 7.813	1 / 0.640	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	13 / 8.453
FY 2017	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	12 / 7.813	1 / 0.640	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	13 / 8.453

Installation Schedule

	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	12	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13
Out	10	2	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13

Footnotes:

⁽¹⁸⁾ The Navigator of the Navy directed all ships to be paperless by the end of FY16. To comply, PCs must receive the navigation and ECDIS-N installations.

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0981 / Items less than \$5 Million	Modification Number / Title: 9 / LT316 - Patrol Coastal FLIR

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	4.100	2.528	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.680	8.308
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	4.100	2.528	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.680	8.308
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	4.100	2.528	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.680	8.308
(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:

Funding provided for the Forward Looking Infrared (FLIR) mod on Patrol Coastal Ship. FLIR Mod replaces an obsolete system and installs an Electro-Optic system that provides situational awareness with visual imagery along with detailed ship system and target information.

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0981 / Items less than \$5 Million						Modification Number / Title: 9 / LT316 - Patrol Coastal FLIR			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: PC FLIR				Modification Type: TBD				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: LT316 - Patrol Coastal FLIR													
B Kits													
Recurring													
1.1.1) FLIR - NonOrganic ⁽¹⁹⁾	9 / 3.549	3 / 1.059	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 1.050	15 / 5.658	
Subtotal: Recurring	- / 3.549	- / 1.059	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.050	- / 5.658	
Subtotal: LT316 - Patrol Coastal FLIR	9 / 3.549	3 / 1.059	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 1.050	15 / 5.658	
Subtotal: Procurement, All Modification Items	- / 3.549	- / 1.059	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 1.050	- / 5.658	
Installation													
Modification Item 1 of 1: LT316 - Patrol Coastal FLIR	- / 0.551	- / 1.469	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.630	- / 2.650	
Subtotal: Installation	- / 0.551	- / 1.469	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.630	- / 2.650	
Total													
Total Cost (Procurement + Support + Installation)	4.100	2.528	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.680	8.308	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0981 / Items less than \$5 Million										Modification Number / Title: 9 / LT316 - Patrol Coastal FLIR											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: LT316 - Patrol Coastal FLIR																															
Manufacturer Information																															
Manufacturer Name: FLIR Systems															Manufacturer Location: Portland, Oregon																
Administrative Leadtime <i>(in Months)</i> : 3															Production Leadtime <i>(in Months)</i> : 3																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates		Jan 2017																													
Delivery Dates		Apr 2017																													
Installation Information																															
Method of Implementation: AIT:: Installation Name: FLIR																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		4 / 0.551		5 / 0.955		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		9 / 1.506							
FY 2017		- / -		3 / 0.514		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		3 / 0.514							
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		3 / 0.630		3 / 0.630							
Total		4 / 0.551		8 / 1.469		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		3 / 0.630		15 / 2.650							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	5	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	15
Out	4	5	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	15
Footnotes: ⁽¹⁹⁾ FLIR installs take 2 weeks to complete. FY17 scheduled installations will be completed consecutively by alteration installation teams (AIT).																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0981 / Items less than \$5 Million					Modification Number / Title: 10 / LT318 - Carriers Passive Countermeasures System (PCMS)		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	52.226	10.100	19.225	19.450	0.000	19.450	3.400	0.000	0.000	0.000	0.000	104.401
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	52.226	10.100	19.225	19.450	0.000	19.450	3.400	0.000	0.000	0.000	0.000	104.401
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	52.226	10.100	19.225	19.450	0.000	19.450	3.400	0.000	0.000	0.000	0.000	104.401
<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: Classified effort. PCMS funding is solely for installation. Procurement of material is done separately via a different sponsor and program office. Material is provided as GFE at the start of the availability.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0981 / Items less than \$5 Million						Modification Number / Title: 10 / LT318 - Carriers Passive Countermeasures System (PCMS)			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: Carrier PCMS				Modification Type: TBD				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: LT318 - Carriers Passive Countermeasures System (PCMS)</i>													
<i>B Kits</i>													
<i>Recurring</i>													
1.1.1) PCMS - Organic	- / 52.226	- / 10.100	- / 19.225	- / 19.450	- / -	- / 19.450	- / 3.400	- / -	- / -	- / -	- / -	- / 104.401	
<i>Subtotal: Recurring</i>	- / 52.226	- / 10.100	- / 19.225	- / 19.450	- / -	- / 19.450	- / 3.400	- / -	- / -	- / -	- / 0.000	- / 104.401	
<i>Subtotal: LT318 - Carriers Passive Countermeasures System (PCMS)</i>	- / 52.226	- / 10.100	- / 19.225	- / 19.450	- / -	- / 19.450	- / 3.400	- / -	- / -	- / -	- / -	- / 104.401	
<i>Subtotal: Procurement, All Modification Items</i>	- / 52.226	- / 10.100	- / 19.225	- / 19.450	- / -	- / 19.450	- / 3.400	- / -	- / -	- / -	- / 0.000	- / 104.401	
Installation													
<i>Subtotal: Installation</i>	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	
Total													
Total Cost (Procurement + Support + Installation)	52.226	10.100	19.225	19.450	0.000	19.450	3.400	0.000	0.000	0.000	0.000	104.401	

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Exhibit P-3a, Individual Modification: PB 2019 Navy				Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9		P-1 Line Item Number / Title: 0981 / Items less than \$5 Million			Modification Number / Title: 10 / LT318 - Carriers Passive Countermeasures System (PCMS)		
ID Code (A=Service Ready, B=Not Service Ready) :				MDAP/MAIS Code:			
Modification Item 1 of 1: LT318 - Carriers Passive Countermeasures System (PCMS)							
Manufacturer Information							
Manufacturer Name: New MFG - Name				Manufacturer Location: New MFG - Loc			
Administrative Leadtime (in Months): 0				Production Leadtime (in Months): 0			
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Contract Dates							
Delivery Dates							

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Exhibit P-3a, Individual Modification: PB 2019 Navy						Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0981 / Items less than \$5 Million				Modification Number / Title: 11 / LT322 - LSD Boat Davit			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	7.413	6.916	9.376	9.933	0.000	9.933	7.220	5.748	2.947	0.000	0.000	49.553
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	7.413	6.916	9.376	9.933	0.000	9.933	7.220	5.748	2.947	0.000	0.000	49.553
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	7.413	6.916	9.376	9.933	0.000	9.933	7.220	5.748	2.947	0.000	0.000	49.553
(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:

[FMP Ship Units - LSD Davit] This SHIPALT replaces the Welin Lambie LUM 12A or Lakeshore Gravity Boat Davit currently installed on LSD 41/49 Class ships, with a new Slewing Arm Davit (SLAD) from Oldenburg Group Inc. The existing systems will be removed and the OGI SLAD will be installed in the same general location of the current systems. The new system is a SLAD design with single point pick up of the boats versus the two point pick up used by the existing systems.

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Exhibit P-3a, Individual Modification: PB 2019 Navy									Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0981 / Items less than \$5 Million					Modification Number / Title: 11 / LT322 - LSD Boat Davit				
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> LT322 - LSD Boat Davit													
B Kits													
Recurring													
1.1.1) FMP Ship Units - LSD Davit - NonOrganic ⁽²⁰⁾	3 / 3.441	3 / 3.493	2 / 2.381	1 / 1.125	- / -	1 / 1.125	1 / 1.213	- / -	- / -	- / -	- / -	10 / 11.653	
1.1.2) End Item Spares - Organic - Organic	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 2.471	- / -	- / -	- / -	2 / 2.471	
<i>Subtotal: Recurring</i>	- / 3.441	- / 3.493	- / 2.381	- / 1.125	- / -	- / 1.125	- / 1.213	- / 2.471	- / -	- / -	- / 0.000	- / 14.124	
<i>Subtotal: LT322 - LSD Boat Davit</i>	3 / 3.441	3 / 3.493	2 / 2.381	1 / 1.125	- / -	1 / 1.125	1 / 1.213	2 / 2.471	- / -	- / -	- / -	12 / 14.124	
<i>Subtotal: Procurement, All Modification Items</i>	- / 3.441	- / 3.493	- / 2.381	- / 1.125	- / -	- / 1.125	- / 1.213	- / 2.471	- / -	- / -	- / 0.000	- / 14.124	
Support (All Modification Items)													
2.1) Engineering/Contract/Testing (Nonrecurring)	- / 1.038	- / 0.696	- / -	- / 0.027	- / -	- / 0.027	- / 0.088	- / -	- / -	- / -	- / -	- / 1.849	
<i>Subtotal: Support</i>	- / 1.038	- / 0.696	- / -	- / 0.027	- / -	- / 0.027	- / 0.088	- / -	- / -	- / -	- / 0.000	- / 1.849	
Installation													
<i>Modification Item 1 of 1:</i> LT322 - LSD Boat Davit	- / 2.934	- / 2.727	- / 6.995	- / 8.781	- / 0.000	- / 8.781	- / 5.919	- / 3.277	- / 2.947	- / 0.000	- / 0.000	- / 33.580	
<i>Subtotal: Installation</i>	- / 2.934	- / 2.727	- / 6.995	- / 8.781	- / -	- / 8.781	- / 5.919	- / 3.277	- / 2.947	- / -	- / 0.000	- / 33.580	
Total													
Total Cost (Procurement + Support + Installation)	7.413	6.916	9.376	9.933	0.000	9.933	7.220	5.748	2.947	0.000	0.000	49.553	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0981 / Items less than \$5 Million										Modification Number / Title: 11 / LT322 - LSD Boat Davit											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: LT322 - LSD Boat Davit																															
Manufacturer Information																															
Manufacturer Name: Oldenburg Group Inc															Manufacturer Location: Iron River, MI																
Administrative Leadtime (in Months): 3															Production Leadtime (in Months): 20																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates		Apr 2017				Feb 2018				Aug 2019				Jan 2020																	
Delivery Dates		Dec 2018				Oct 2019				Apr 2021				Sep 2021																	
Installation Information																															
Method of Implementation: Industrial/AIT:: Installation Name: FMP Ship Units - LSD Davit																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		To Complete		Total							
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)							
Prior Years		0 / 2.934		1 / 2.153		2 / 5.142		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		3 / 10.229							
FY 2017		- / -		0 / 0.574		0 / 1.274		3 / 7.699		0 / 0.000		3 / 7.699		- / -		- / -		- / -		- / -		0 / 0.000		3 / 9.547							
FY 2018		- / -		- / -		0 / 0.579		0 / 0.783		0 / 0.000		0 / 0.783		2 / 5.110		- / -		- / -		- / -		0 / 0.000		2 / 6.472							
FY 2019		- / -		- / -		- / -		0 / 0.299		0 / 0.000		0 / 0.299		0 / 0.486		1 / 2.738		- / -		- / -		0 / 0.000		1 / 3.523							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.323		0 / 0.539		1 / 2.947		- / -		0 / 0.000		1 / 3.809							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		0 / 2.934		1 / 2.727		2 / 6.995		3 / 8.781		0 / 0.000		3 / 8.781		2 / 5.919		1 / 3.277		1 / 2.947		- / -		0 / 0.000		10 / 33.580							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	1	-	1	1	-	-	1	1	1	1	-	1	-	-	-	1	-	1	-	-	-	-	-	-	-	-	10
Out	-	-	-	-	-	-	1	-	-	2	-	1	-	-	1	-	2	-	1	-	-	-	1	-	-	-	-	-	-	1	10
Method of Implementation (Organic): End Item Spares - Organic																															
																				Installation Quantity: 2											
Footnotes:																															
(20) Two years prior to install, DSA is required to fund new Milestones for Fixed Price Shipyard Install Contracts and to support Ship Check, Installation Drawing/Work Specification development required for the Request For Proposal (RFP). Installation costs vary depending on current port rates.																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy						Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0981 / Items less than \$5 Million				Modification Number / Title: 12 / LT321 ESB SOF Backfit			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	19.547	2.712	15.404	5.570	0.000	5.570	0.000	0.000	0.000	0.000	0.000	43.233
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	19.547	2.712	15.404	5.570	0.000	5.570	0.000	0.000	0.000	0.000	0.000	43.233
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	19.547	2.712	15.404	5.570	0.000	5.570	0.000	0.000	0.000	0.000	0.000	43.233
(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 provided for ESB 3 and 4 Special Operation Forces (SOF) components. Efforts include ship changes necessary to add radio infrastructure and increase bandwidth capacity, make ESB compatible with night vision devices, and to add additional aircraft operating spots. Other efforts include ship changes and services for additional Twenty-foot Equivalent Unit (TEU) capacity, increased medical services (shock/triage/forward resuscitative surgery system), and increased capacity for storage/fueling capability of MOGAS.

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0981 / Items less than \$5 Million						Modification Number / Title: 12 / LT321 ESB SOF Backfit			
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: LT321 ESB SOF Backfit													
B Kits													
Recurring													
1.1.1) LT321 ESB SOF . - NonOrganic ⁽²¹⁾	1 / 12.347	1 / 2.712	1 / 11.642	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 26.701	
Subtotal: Recurring	- / 12.347	- / 2.712	- / 11.642	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 26.701	
Subtotal: LT321 ESB SOF Backfit	1 / 12.347	1 / 2.712	1 / 11.642	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	3 / 26.701	
Subtotal: Procurement, All Modification Items	- / 12.347	- / 2.712	- / 11.642	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 26.701	
Installation													
Modification Item 1 of 1: LT321 ESB SOF Backfit	- / 7.200	- / 0.000	- / 3.762	- / 5.570	- / 0.000	- / 5.570	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 16.532	
Subtotal: Installation	- / 7.200	- / -	- / 3.762	- / 5.570	- / -	- / 5.570	- / -	- / -	- / -	- / -	- / 0.000	- / 16.532	
Total													
Total Cost (Procurement + Support + Installation)	19.547	2.712	15.404	5.570	0.000	5.570	0.000	0.000	0.000	0.000	0.000	43.233	

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Exhibit P-3a, Individual Modification: PB 2019 Navy											Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9											P-1 Line Item Number / Title: 0981 / Items less than \$5 Million											Modification Number / Title: 12 / LT321 ESB SOF Backfit										
ID Code (A=Service Ready, B=Not Service Ready) :																MDAP/MAIS Code:																
Modification Item 1 of 1: LT321 ESB SOF Backfit																																
Manufacturer Information																																
Manufacturer Name: Various														Manufacturer Location: TBD																		
Administrative Leadtime <i>(in Months)</i> : 0														Production Leadtime <i>(in Months)</i> : 0																		
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023						
Contract Dates																																
Delivery Dates																																
Installation Information																																
Method of Implementation: [none specified]:: Installation Name: LT321 ESB SOF .																																
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		To Complete		Total								
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)								
Prior Years		1 / 7.200		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		1 / 7.200								
FY 2017		- / -		- / -		1 / 3.762		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		1 / 3.762								
FY 2018		- / -		- / -		- / -		1 / 5.570		0 / 0.000		1 / 5.570		- / -		- / -		- / -		- / -		0 / 0.000		1 / 5.570								
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
Total		1 / 7.200		- / -		1 / 3.762		1 / 5.570		0 / 0.000		1 / 5.570		- / -		- / -		- / -		- / -		- / -		0 / 0.000		3 / 16.532						
Installation Schedule																																
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot	
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
In	1	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	
Out	-	1	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	
Footnotes: ⁽²¹⁾ LT321- FY17 funding was for the procurement of Long Lead Material for the ESB 4 SOF components. The funding increase is to procure the remaining ESB 4 SOF components followed by subsequent installation efforts beginning in FY18 and ending in FY19.																																

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0981 / Items less than \$5 Million					Modification Number / Title: 13 / LT327 - Modular Refrigeration System.		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	3.400	2.567	0.000	0.000	0.000	2.600	4.500	4.500	4.500	11.400	33.467
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	3.400	2.567	0.000	0.000	0.000	2.600	4.500	4.500	4.500	11.400	33.467
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	3.400	2.567	0.000	0.000	0.000	2.600	4.500	4.500	4.500	11.400	33.467
<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: [Modular Reefer System] Modular Refrigeration System (MRS) replaces the existing legacy ship's stores refrigeration system (SSRS) onboard CVN68 class carriers. The legacy system is energy inefficient, space inefficient, and maintenance intensive, requiring highly skilled personnel to operate and maintain acceptable box temperatures. Most hardware associated with the legacy systems is specialized mil-spec and is either becoming unsupportable due to obsolescence, or is grossly expensive to maintain. Each Modular Refrigeration System (MRS) is comprised of a Modular Refrigeration Unit (MRU), an operating/ diagnostic control panel, and small chilled water cooled flat-plate condenser. There are 15 MRUs required per hull. Modular Refrigeration Systems (MRS's) are self-contained hatchable modular refrigeration units (MRU) with a dedicated control panel that eliminate 90% of current maintenance requirements and require minimal operator support/training.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0981 / Items less than \$5 Million						Modification Number / Title: 13 / LT327 - Modular Refrigeration System.			
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> LT327 - Modular Refrigeration System.													
B Kits													
Recurring													
1.1.1) Modular Reefer System - NonOrganic ⁽²²⁾	- / -	15 / 3.400	- / -	- / -	- / -	- / -	15 / 2.300	15 / 2.300	15 / 2.300	15 / 2.300	30 / 4.600	105 / 17.200	
<i>Subtotal: Recurring</i>	- / 0.000	- / 3.400	- / -	- / -	- / -	- / -	- / 2.300	- / 2.300	- / 2.300	- / 2.300	- / 4.600	- / 17.200	
<i>Subtotal: LT327 - Modular Refrigeration System.</i>	- / -	15 / 3.400	- / -	- / -	- / -	- / -	15 / 2.300	15 / 2.300	15 / 2.300	15 / 2.300	30 / 4.600	105 / 17.200	
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.000	- / 3.400	- / -	- / -	- / -	- / -	- / 2.300	- / 2.300	- / 2.300	- / 2.300	- / 4.600	- / 17.200	
Installation													
<i>Modification Item 1 of 1:</i> LT327 - Modular Refrigeration System.													
<i>Subtotal: Installation</i>	- / 0.000	- / 0.000	- / 2.567	- / 0.000	- / 0.000	- / 0.000	- / 0.300	- / 2.200	- / 2.200	- / 2.200	- / 6.800	- / 16.267	
Total													
Total Cost (Procurement + Support + Installation)	0.000	3.400	2.567	0.000	0.000	0.000	2.600	4.500	4.500	4.500	11.400	33.467	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0981 / Items less than \$5 Million										Modification Number / Title: 13 / LT327 - Modular Refrigeration System.											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: LT327 - Modular Refrigeration System.																															
Manufacturer Information																															
Manufacturer Name: DRS Marlo Coil															Manufacturer Location: TBDHigh Ridge, MO																
Administrative Leadtime <i>(in Months)</i> : 2															Production Leadtime <i>(in Months)</i> : 10																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates		Dec 2016								Dec 2018				Dec 2019																	
Delivery Dates		Oct 2017								Oct 2019				Oct 2020																	
Installation Information																															
Method of Implementation: AIT:: Installation Name: Modular Reefer System																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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 2017		- / -		- / -		15 / 2.567		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		15 / 2.567					
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.300		15 / 1.900		- / -		- / -		- / -		0 / 0.000		15 / 2.200					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.300		15 / 1.900		- / -		- / -		0 / 0.000		15 / 2.200					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.300		15 / 1.900		0 / 0.000		15 / 2.200		15 / 2.500					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.300		15 / 2.200		15 / 2.500					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		30 / 4.600		30 / 4.600					
Total		- / -		- / -		15 / 2.567		- / -		- / -		- / -		0 / 0.300		15 / 2.200		15 / 2.200		15 / 2.200		15 / 2.200		45 / 6.800		105 / 16.267					
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	15	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	15	-	-	-	15	-	-	45	105
Out	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	-	-	-	-	15	-	-	15	-	-	-	-	60	105
Footnotes: (22) FY17 funding is for the procurement of an entire Shipset of Modular Refrigeration Systems. Installation requirement in FY18 decreased based on revised ISEA installation estimate. Current system performance on CVN68 CL ships has made replacement of the existing legacy system critical. Installation funds are also required in the year prior to install for DSA (hull planning yard ship checks, installation drawing development), Advanced Planning, and Integrated Logistics Support (ILS)																															

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment	P-1 Line Item Number / Title: 0989 / Chemical Warfare Detectors

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	49.592	2.873	3.036	2.966	0.000	2.966	2.996	3.065	3.113	3.183	56.600	127.424
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	49.592	2.873	3.036	2.966	0.000	2.966	2.996	3.065	3.113	3.183	56.600	127.424
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	49.592	2.873	3.036	2.966	0.000	2.966	2.996	3.065	3.113	3.183	56.600	127.424

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

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The FY 2019 funding request was reduced by \$0.048 million to reflect the Department of Navy's effort to support the Office of Management and Budget directed reforms for Efficiency and Effectiveness that include a lean, accountable, more efficient government.

CHEMICAL & BIOLOGICAL DEFENSE PROGRAM (INSTALLATION REQUIREMENTS):

Public Law 103-160, Section 1703 created a Joint Service Chemical and Biological Defense Program (CBDP) to address ever growing threats from the aggressive proliferation of chemical and biological weapons. Joint CBDP funds the development and procurement of Chemical and Biological Defense (CBD) Equipment to enhance the warfighter's ability to survive and complete their mission in a chemical biological contaminated environment. The Navy is responsible for the associated installation/integration and sustainment funds only. The Navy's requirement for Joint Biological Point Detection System (JBPDs), Improved Point Detection System/Lifecycle Replacement (IPDS/LR), Joint Biological Agent Identification and Diagnostic System (JBAIDS), Next Generation Chemical Detection (NGDS) System, and Enhanced Maritime Biological Detection (EMBD) system has been validated by CNO in associated Joint Operational Requirements Documents.

Installation of Equipment

Funding is for installation of equipment including Fleet Modernization Program installations, installation of training equipment and installation of equipment in other shore facilities. Procurement of equipment is funded by the Joint Service CBDP.

Detector installation costs can vary significantly, even within ship class, depending on installation location (East coast, West coast, OCONUS, etc.), if installation accomplished pier side or in a ship yard (i.e. availability type during which installation actually occurs), ship as built and as found conditions, and installation growth work (i.e. unplanned/unexpected work) driven by as found conditions.

[P3A / IPDS/LR]: The IPDS/LR (formerly SEACADS/IPDS) will improve the existing shipboard point detection system for detecting and identifying chemical nerve and blister agent contamination presence. Inventory objective for shipboard installations is 125.

[P3A - 2 / JBAIDS]: The JBAIDS will provide U.S. operating forces with a biological organism identification and diagnostic device that will identify and quantify biological organisms of operational concern and other pathogens of clinical significance for confirmatory and prognostic purposes. Inventory objective for shipboard JBAIDS installations is 23 and Refrigeration installations is 17.

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment		P-1 Line Item Number / Title: 0989 / Chemical Warfare Detectors
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
[P3A - 3 / JBAIDS REFRIGERATION UPGRADE]: The JBAIDS systems will detect and identify biological organisms of operational concern and other pathogens of clinical significance for confirmatory and prognostic purposes. The inventory objective for shipboard installation is 17. [P3A - 4 / JBPDS BLK 1]: The JBPDS Block I will provide the Navy with automated, knowledge-based capability to detect and identify biological warfare agents in less than 20 minutes. The inventory objective for shipboard installations is 76. [P3A - 5 / NGCD]: The Next Generation Chemical Detector (NGCD) is a technology replacement for the IPDS and IPDS-LR systems. The program consists of four variants for multiple applications; the Navy will be installing variant 1 for fixed chemical agent detection capability. The inventory objective for shipboard installations is 185. [P3A - 6 / EMBD]: The Enhanced Maritime Biological Detection (EMBD) is a new acquisition program, which will provide lifecycle replacement kits for existing JBPDS system installations. The EMBD kit is intended to install within the existing JBPDS frame, reducing overall installation complexity and refurbishment unit costs. The inventory objective for shipboard installations is 7. [P3A - 7 / IPDS-LR Heater]: The IPDS-LR Heater Upgrade provides the ability for IPDS-LR to function in various extreme environmental conditions that may cause system degradation and ultimately failure. This is a new, emergent requirement to ensure automated chemical agent detection is operationally available. The equipment development and procurement for this upgrade is funded out of the Joint Service CBDP Budget and is expected to be provided to Navy by early FY 2019. The Navy is required to fund the integration and installation. Inventory objective for shipboard installations is 89.		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy	Date: February 2018

Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment	P-1 Line Item Number / Title: 0989 / Chemical Warfare Detectors

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	1 / CW001 CHEMICAL WARFARE PROGRAM IPDS/LR (TBD)				- / 16.421	- / 2.689	- / 2.546	- / 1.566	- / 0.000	- / 1.566
P-3a	2 / CW001 CHEMICAL WARFARE PROGRAM JBAIDS (TBD)				- / 5.126	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	3 / CW001 CHEMICAL WARFARE PROGRAM JBAIDS REFRIGERATION UPGRADE (TBD)				- / 3.560	- / 0.084	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	4 / CW001 CHEMICAL WARFARE PROGRAM JBPDS BLK 1 (TBD)				- / 24.485	- / 0.100	- / 0.440	- / 0.400	- / 0.000	- / 0.400
P-3a	5 / CW001 CHEMICAL WARFARE PROGRAM NGCD (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	6 / CW001 CHEMICAL WARFARE PROGRAM EMBD (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	7 / CW001 CHEMICAL WARFARE PROGRAM IPDS-LR HEATER UPGRADE (TBD)				- / 0.000	- / 0.000	- / 0.050	- / 1.000	- / 0.000	- / 1.000
P-40	Total Gross/Weapon System Cost				- / 49.592	- / 2.873	- / 3.036	- / 2.966	- / 0.000	- / 2.966

Exhibits Schedule					FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	1 / CW001 CHEMICAL WARFARE PROGRAM IPDS/LR (TBD)				- / 0.805	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 24.027
P-3a	2 / CW001 CHEMICAL WARFARE PROGRAM JBAIDS (TBD)				- / 0.090	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 5.216
P-3a	3 / CW001 CHEMICAL WARFARE PROGRAM JBAIDS REFRIGERATION UPGRADE (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 3.644
P-3a	4 / CW001 CHEMICAL WARFARE PROGRAM JBPDS BLK 1 (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 25.425
P-3a	5 / CW001 CHEMICAL WARFARE PROGRAM NGCD (TBD)				- / 0.000	- / 0.456	- / 2.381	- / 3.183	- / 56.600	- / 62.620
P-3a	6 / CW001 CHEMICAL WARFARE PROGRAM EMBD (TBD)				- / 0.400	- / 2.457	- / 0.380	- / 0.000	- / 0.000	- / 3.237
P-3a	7 / CW001 CHEMICAL WARFARE PROGRAM IPDS-LR HEATER UPGRADE (TBD)				- / 1.701	- / 0.152	- / 0.352	- / 0.000	- / 0.000	- / 3.255
P-40	Total Gross/Weapon System Cost				- / 2.996	- / 3.065	- / 3.113	- / 3.183	- / 56.600	- / 127.424

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

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

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0989 / Chemical Warfare Detectors					Modification Number / Title: 1 / CW001 CHEMICAL WARFARE PROGRAM IPDS/LR		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	16.421	2.689	2.546	1.566	0.000	1.566	0.805	0.000	0.000	0.000	0.000	24.027
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	16.421	2.689	2.546	1.566	0.000	1.566	0.805	0.000	0.000	0.000	0.000	24.027
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	16.421	2.689	2.546	1.566	0.000	1.566	0.805	0.000	0.000	0.000	0.000	24.027
<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: OPNAVINST 3400.10G articulates U.S. Navy Chemical, Biological and Radiological Defense (CBRD) policy and establishes functional responsibilities to ensure the highest level of the Fleet readiness and warfighting sustainability in a CBR environment. CBRD IPDS/LR will improve the existing shipboard point detection system for detecting and identifying chemical nerve and blister agent contamination presence. The equipment procurement is funded out of the Joint Service CBDP Budget. [IPDS/LR] Remarks: A total of one hundred and three (103) completed. Planned installations have increased from 123 at PB18 submission to 125 due to the addition of two (2) planned installations at the Aegis Ashore facilities in Romania and Poland. Recently, it was determined these facilities would be treated as Fleet assets and these two Aegis Ashore sites have automated chemical detection requirements.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0989 / Chemical Warfare Detectors						Modification Number / Title: 1 / CW001 CHEMICAL WARFARE PROGRAM IPDS/LR			
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> CW001 CHEMICAL WARFARE PROGRAM IPDS/LR													
B Kits													
Recurring													
1.1.1) IPDS/LR - NonOrganic ⁽¹⁾	92 / 0.000	12 / 0.000	11 / 0.000	6 / 0.000	- / -	6 / 0.000	4 / 0.000	- / -	- / -	- / -	- / -	125 / 0.000	
<i>Subtotal: Recurring</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	
<i>Subtotal: CW001 CHEMICAL WARFARE PROGRAM IPDS/LR</i>	92 / 0.000	12 / 0.000	11 / 0.000	6 / 0.000	- / -	6 / 0.000	4 / 0.000	- / -	- / -	- / -	- / -	125 / 0.000	
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	
Installation													
<i>Modification Item 1 of 1:</i> CW001 CHEMICAL WARFARE PROGRAM IPDS/LR	- / 16.421	- / 2.689	- / 2.546	- / 1.566	- / 0.000	- / 1.566	- / 0.805	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 24.027	
<i>Subtotal: Installation</i>	- / 16.421	- / 2.689	- / 2.546	- / 1.566	- / -	- / 1.566	- / 0.805	- / -	- / -	- / -	- / 0.000	- / 24.027	
Total													
Total Cost (Procurement + Support + Installation)	16.421	2.689	2.546	1.566	0.000	1.566	0.805	0.000	0.000	0.000	0.000	24.027	

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Exhibit P-3a, Individual Modification: PB 2019 Navy												Date: February 2018																			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0989 / Chemical Warfare Detectors										Modification Number / Title: 1 / CW001 CHEMICAL WARFARE PROGRAM IPDS/LR											
ID Code (A=Service Ready, B=Not Service Ready) :														MDAP/MAIS Code:																	
Modification Item 1 of 1: CW001 CHEMICAL WARFARE PROGRAM IPDS/LR																															
Manufacturer Information																															
Manufacturer Name: TBD														Manufacturer Location: TBD																	
Administrative Leadtime (in Months): 0														Production Leadtime (in Months): 0																	
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates																															
Delivery Dates																															
Installation Information																															
Method of Implementation: AIT:: Installation Name: IPDS/LR																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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		91 / 16.421		1 / 0.000		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		92 / 16.421							
FY 2017		- / -		12 / 2.689		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		12 / 2.689							
FY 2018		- / -		- / -		11 / 2.546		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		11 / 2.546							
FY 2019		- / -		- / -		- / -		6 / 1.566		0 / 0.000		6 / 1.566		- / -		- / -		- / -		- / -		0 / 0.000		6 / 1.566							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		4 / 0.805		- / -		- / -		- / -		0 / 0.000		4 / 0.805							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		91 / 16.421		13 / 2.689		11 / 2.546		6 / 1.566		0 / 0.000		6 / 1.566		4 / 0.805		- / -		- / -		- / -		0 / 0.000		125 / 24.027							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	91	2	7	3	1	2	2	4	3	1	1	2	2	-	1	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	125
Out	91	2	7	2	2	2	2	4	3	1	1	2	2	-	1	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	125
Footnotes: ⁽¹⁾ IPDS-LR plan - The procurement costs are specifically referring to Installation and Design Service Allocation (DSA) costs as there are no equipment procurement costs with any detector system installed. DSA costs are for government engineering oversight/support in preparation for ship installation and ship class planning yards for engineering services which include ship check, development and approval of ship installation drawings (SIDs), Ship Selected Record changes, Bill of Material (BOM), onsite planning yard engineering support during installation to answer liaison action record (LARs), and other engineering																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0989 / Chemical Warfare Detectors	Modification Number / Title: 1 / CW001 CHEMICAL WARFARE PROGRAM IPDS/LR
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
services depending on the planning yard. DSA costs are generally funded up to one year prior to planned installation due to drawing development lead time and installation preparation efforts. These costs are ship specific since drawings are developed for each ship, not class of ship, excluding IPDS-LR for DDG Class ships which are class-wide drawings. - FY17 installations total thirteen (13) ships to include one (1) DDG-51 Class funded by FY16 OPN, three (3) MCM Class ship at \$180.3K each, three (3) LHD-1 Class ship at \$196.7K each, one (1) LPD-17 Class ship at \$158K, two (2) LSD-49 Class ships at \$185K each, one (1) CG-47 Class ships at \$206K, one (1) DDG-51 Class ship at \$190K, and one (1) CVN-68 Class ship at \$182K. Total installation costs for IPDS-LR in FY17 is \$2,237K for twelve (12) ships plus \$452K for DSA costs. - FY18 installations total eleven (11) ships to include three (3) LSD-41 Class ships at \$200.8K each, three (3) CG-47 Class ships at \$202.7K each, four (4) DDG-51 Class ships at \$187.8K each, and one (1) LCS-2 Class ship at \$249.4K. Total installation cost for IPDS-LR in FY18 is \$2,211K for eleven (11) ships plus \$335K for DSA costs. - FY19 installations total six (6) ships to include two (2) LSD-49 Class ships at \$200K each, two (2) CG-47 Class ships at \$194.5K each, one (1) LCS-2 Class ship at \$249K, and one (1) HN-1 Class (Aegis Ashore) at \$203K. Total installation costs for FY19 is \$1,241K plus \$325K for DSA costs. - FY20 installations total four (4) ships to include one (1) LDS-49 Class at \$198K, two (2) CG-47 Class ships at \$203.5K each, and one (1) HN-1 Class (Aegis Ashore) at \$200K. Total installation costs for IPDS-LR in FY20 is \$805K.		

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0989 / Chemical Warfare Detectors						Modification Number / Title: 2 / CW001 CHEMICAL WARFARE PROGRAM JBAIDS		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	5.126	0.000	0.000	0.000	0.000	0.000	0.090	0.000	0.000	0.000	0.000	5.216
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	5.126	0.000	0.000	0.000	0.000	0.000	0.090	0.000	0.000	0.000	0.000	5.216
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	5.126	0.000	0.000	0.000	0.000	0.000	0.090	0.000	0.000	0.000	0.000	5.216
<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: OPNAVINST 3400.10G articulates U.S. Navy Chemical, Biological and Radiological Defense (CBRD) policy and establishes functional responsibilities to ensure the highest level of the Fleet readiness and warfighting sustainability in a CBR environment. JBAIDS systems will identify and quantify biological organisms of operational concern and other pathogens of clinical significance for confirmatory and prognostic purposes. The CENTCOM HR urgent need (dated Aug 2009) modifies the JBAIDS ORD (dated May 2003) with the addition of detection capability for the 2009/A/H1N1 influenza. The equipment procurement is funded out of the Joint Service CDBP Budget P-1 Item Nomenclature: JBAIDS. Beginning in FY13, system will install with refrigeration unit. [JBAIDS] Remarks: A total of twenty two (22) completed of twenty three (23) planned. The LHA-6 installation started third quarter FY17 and completed July 2017 (Q4). The LHA 7 installation will occur during PSA in FY20. LHA 8 has successfully added JBAIDS to the baseline and should have the system installed during construction.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0989 / Chemical Warfare Detectors					Modification Number / Title: 2 / CW001 CHEMICAL WARFARE PROGRAM JBAIDS			
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> CW001 CHEMICAL WARFARE PROGRAM JBAIDS													
B Kits													
Non-Recurring													
1.1.1) JBAIDS - NonOrganic ⁽²⁾	22 / 0.000	- / -	- / -	- / -	- / -	- / -	1 / 0.000	- / -	- / -	- / -	- / -	23 / 0.000	
<i>Subtotal: Non-Recurring</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	
<i>Subtotal: CW001 CHEMICAL WARFARE PROGRAM JBAIDS</i>	22 / 0.000	- / -	- / -	- / -	- / -	- / -	1 / 0.000	- / -	- / -	- / -	- / -	23 / 0.000	
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	
Installation													
<i>Modification Item 1 of 1:</i> CW001 CHEMICAL WARFARE PROGRAM JBAIDS	- / 5.126	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.090	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 5.216	
<i>Subtotal: Installation</i>	- / 5.126	- / -	- / -	- / -	- / -	- / -	- / 0.090	- / -	- / -	- / -	- / 0.000	- / 5.216	
Total													
Total Cost (Procurement + Support + Installation)	5.126	0.000	0.000	0.000	0.000	0.000	0.090	0.000	0.000	0.000	0.000	5.216	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0989 / Chemical Warfare Detectors										Modification Number / Title: 2 / CW001 CHEMICAL WARFARE PROGRAM JBAIDS											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: CW001 CHEMICAL WARFARE PROGRAM JBAIDS																															
Manufacturer Information																															
Manufacturer Name: TBD															Manufacturer Location: TBD																
Administrative Leadtime (in Months): 0															Production Leadtime (in Months): 0																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates																															
Delivery Dates																															
Installation Information																															
Method of Implementation: AIT:: Installation Name: JBAIDS																															
Installation Cost		Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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		22 / 5.126	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		22 / 5.126								
FY 2017		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2018		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2019		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2020		- / -	- / -		- / -		- / -		- / -		- / -		1 / 0.090		- / -		- / -		- / -		0 / 0.000		1 / 0.090								
FY 2021		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2022		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2023		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
To Complete		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
Total		22 / 5.126	- / -		- / -		- / -		- / -		- / -		1 / 0.090		- / -		- / -		- / -		0 / 0.000		23 / 5.216								
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	21	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	23
Out	21	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	23
Footnotes:																															
(2) There are no equipment procurement costs with any detector system installed. The Design Service Allocation (DSA) costs are for government engineering oversight/support in preparation for ship installation and ship class planning yards for engineering services which include ship check, development and approval of ship installation drawings (SIDs), Ship Selected Record changes, Bill of Material (BOM), onsite planning yard engineering support during installation to answer liaison action record (LARs), and other engineering services depending on the planning yard. DSA costs are generally funded up to one year prior																															

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LI 0989 - Chemical Warfare Detectors
Navy

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Exhibit P-3a, Individual Modification: PB 2019 Navy						Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0989 / Chemical Warfare Detectors				Modification Number / Title: 3 / CW001 CHEMICAL WARFARE PROGRAM JBAIDS REFRIGERATION UPGRADE			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	3.560	0.084	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.644
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	3.560	0.084	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.644
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	3.560	0.084	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.644
(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:

OPNAVINST 3400.10G articulates U.S. Navy Chemical, Biological and Radiological Defense (CBRD) policy and establishes functional responsibilities to ensure the highest level of Fleet readiness and warfighting sustainability in a CBR environment. JBAIDS systems will detect and identify biological organisms of operational concern and other pathogens of clinical significance for confirmatory and prognostic purposes. The CENTCOM HR urgent need (dated Aug 2009) modifies the JBAIDS ORD (dated May 2003) with the addition of detection capability for the 2009/A/H1N1 influenza. This requires the installation of added support equipment, hard-wired freezers. The equipment procurement is funded out of the Joint Service CBDP Budget P-1 Item Nomenclature: JBAIDS.

[JBAIDS REFRIGERATION UPGRADE] Remarks: A total of seventeen (17) completed of seventeen (17) planned, completing all JBAIDS refrigeration upgrades.

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0989 / Chemical Warfare Detectors						Modification Number / Title: 3 / CW001 CHEMICAL WARFARE PROGRAM JBAIDS REFRIGERATION UPGRADE			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: [No Model Specified]				Modification Type: TBD				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> CW001 CHEMICAL WARFARE PROGRAM JBAIDS REFRIGERATION UPGRADE													
B Kits													
Recurring													
1.1.1) JBAIDS REFRIGERATION UPGRADE - NonOrganic ⁽³⁾	17 / 1.780	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	17 / 1.780	
<i>Subtotal: Recurring</i>	- / 1.780	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 1.780	
<i>Subtotal: CW001 CHEMICAL WARFARE PROGRAM JBAIDS REFRIGERATION UPGRADE</i>	17 / 1.780	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	17 / 1.780	
<i>Subtotal: Procurement, All Modification Items</i>	- / 1.780	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 1.780	
Installation													
<i>Modification Item 1 of 1:</i> CW001 CHEMICAL WARFARE PROGRAM JBAIDS REFRIGERATION UPGRADE	- / 1.780	- / 0.084	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 1.864	
<i>Subtotal: Installation</i>	- / 1.780	- / 0.084	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 1.864	
Total													
Total Cost (Procurement + Support + Installation)	3.560	0.084	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.644	

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0989 / Chemical Warfare Detectors	Modification Number / Title: 3 / CW001 CHEMICAL WARFARE PROGRAM JBAIDS REFRIGERATION UPGRADE

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

Modification Item 1 of 1: CW001 CHEMICAL WARFARE PROGRAM JBAIDS REFRIGERATION UPGRADE

Manufacturer Information

Manufacturer Name: TBD Manufacturer Location: TBD

Administrative Leadtime (in Months): 0 Production Leadtime (in Months): 0

Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Contract Dates							
Delivery Dates							

Installation Information

Method of Implementation: AIT:: Installation Name: JBAIDS REFRIGERATION UPGRADE

Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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	16 / 1.780	1 / 0.084	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	17 / 1.864
FY 2017	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	16 / 1.780	1 / 0.084	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	17 / 1.864

Installation Schedule

	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	16	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17
Out	16	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17

Footnotes:
⁽³⁾ JBAIDS Hardware Upgrade plan - There are no equipment procurement costs with any detector system installed. The Design Service Allocation (DSA) costs are for government engineering oversight/support in preparation for ship installation and ship class planning yards for engineering services which include ship check, development and approval of ship installation drawings (SIDs), Ship Selected Record changes,

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0989 / Chemical Warfare Detectors	Modification Number / Title: 3 / CW001 CHEMICAL WARFARE PROGRAM JBAIDS REFRIGERATION UPGRADE
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
Bill of Material (BOM), onsite planning yard engineering support during installation to answer liaison action record (LARs), and other engineering services depending on the planning yard. DSA costs are generally funded up to one year prior to planned installation due to drawing development lead time and installation preparation efforts. These costs are ship specific since drawings are developed for each ship, not class of ship, excluding IPDS-LR for DDG Class ships which are class-wide drawings. - FY17 installation includes one (1) CVN-68 Class ship at \$84K (FY16 funded).		

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0989 / Chemical Warfare Detectors						Modification Number / Title: 4 / CW001 CHEMICAL WARFARE PROGRAM JBPDS BLK 1		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	24.485	0.100	0.440	0.400	0.000	0.400	0.000	0.000	0.000	0.000	0.000	25.425
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	24.485	0.100	0.440	0.400	0.000	0.400	0.000	0.000	0.000	0.000	0.000	25.425
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	24.485	0.100	0.440	0.400	0.000	0.400	0.000	0.000	0.000	0.000	0.000	25.425
<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: OPNAVINST 3400.10F articulates U.S. Navy CBRD policy and establishes functional responsibilities to ensure the highest level of Fleet Readiness and warfighting sustainability in a CBR environment. JBPDS BLK I provides for improved biological agent detection and reporting. The JBPDS ORD (J2-B001-Revision 1, dated 7 January, 2002) validates the modification. The equipment procurement is funded out of the Joint CDBP Budget P-1 Item Nomenclature: (JP0100) JBPDS [JBPDS BLK 1] Remarks: A total of 74 completed. Planned quantities increased from 74 to 76 since PB18. Prior submissions had the LCS 2 and LCS 4 listed as EMBD installs starting in FY19, but the Joint developed EMBD program has slipped to FY21 for fielding. To lower Warfighter risk in the interim, LCS-2 & 4 was added back to planned JBPDS installations. Both hulls had JBPDS partially installed by the ship builder during construction, but the system is inoperable. The LCS 2 & 4 JBPDS require removal and relocation to function properly. Systems are planned for removal and relocation in FY18 and FY19 to make functional and complete all planned installations.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0989 / Chemical Warfare Detectors						Modification Number / Title: 4 / CW001 CHEMICAL WARFARE PROGRAM JBPDS BLK 1			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: [No Model Specified]				Modification Type: TBD				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> CW001 CHEMICAL WARFARE PROGRAM JBPDS BLK 1													
B Kits													
Non-Recurring													
1.1.1) JBPDS BLK 1 - NonOrganic ⁽⁴⁾	74 / 0.000	- / -	1 / 0.000	1 / 0.000	- / -	1 / 0.000	- / -	- / -	- / -	- / -	- / -	76 / 0.000	
<i>Subtotal: Non-Recurring</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	
<i>Subtotal: CW001 CHEMICAL WARFARE PROGRAM JBPDS BLK 1</i>	74 / 0.000	- / -	1 / 0.000	1 / 0.000	- / -	1 / 0.000	- / -	- / -	- / -	- / -	- / -	76 / 0.000	
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	
Installation													
<i>Modification Item 1 of 1:</i> CW001 CHEMICAL WARFARE PROGRAM JBPDS BLK 1	- / 24.485	- / 0.100	- / 0.440	- / 0.400	- / 0.000	- / 0.400	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 25.425	
<i>Subtotal: Installation</i>	- / 24.485	- / 0.100	- / 0.440	- / 0.400	- / -	- / 0.400	- / -	- / -	- / -	- / -	- / 0.000	- / 25.425	
Total													
Total Cost (Procurement + Support + Installation)	24.485	0.100	0.440	0.400	0.000	0.400	0.000	0.000	0.000	0.000	0.000	25.425	

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0989 / Chemical Warfare Detectors	Modification Number / Title: 4 / CW001 CHEMICAL WARFARE PROGRAM JBPDS BLK 1

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

Modification Item 1 of 1: CW001 CHEMICAL WARFARE PROGRAM JBPDS BLK 1

Installation Information

Method of Implementation: AIT:: Installation Name: JBPDS BLK 1

Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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	74 / 24.485	0 / 0.100	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	74 / 24.585
FY 2017	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	1 / 0.440	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	1 / 0.440
FY 2019	- / -	- / -	- / -	1 / 0.400	0 / 0.000	1 / 0.400	- / -	- / -	- / -	- / -	0 / 0.000	1 / 0.400
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	74 / 24.485	0 / 0.100	1 / 0.440	1 / 0.400	0 / 0.000	1 / 0.400	- / -	- / -	- / -	- / -	0 / 0.000	76 / 25.425

Installation Schedule

	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	74	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	76
Out	74	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	76

Footnotes:

(4) The procurement costs are specifically referring to Installation and Design Service Allocation (DSA) costs as there are no equipment procurement costs with any detector system installed. DSA costs are for government engineering oversight/support in preparation for ship installation and ship class planning yards for engineering services which include ship check, development and approval of ship installation drawings (SIDs), Ship Selected Record changes, Bill of Material (BOM), onsite planning yard engineering support during installation to answer liaison action record (LARs), and other engineering services depending on the planning yard. DSA costs are generally funded up to one year prior to planned installation due to drawing development lead time and installation preparation efforts. These costs are ship specific since drawings are developed for each ship, not class of ship. The LCS 4 and LCS 2 installs are expected to be more expensive than other JBPDS installs because both have partially installed systems that will need to be ripped out and relocated. - FY17 DSA costs are \$100K. - FY18 installations include one (1) LCS-2 Class ship at \$400K plus \$40K for DSA costs. - FY19 installations include one (1) LCS-2 Class ship at \$400K.

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0989 / Chemical Warfare Detectors						Modification Number / Title: 5 / CW001 CHEMICAL WARFARE PROGRAM NGCD		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.456	2.381	3.183	56.600	62.620
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.456	2.381	3.183	56.600	62.620
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.456	2.381	3.183	56.600	62.620
<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: OPNAVINST 3400.10F articulates U.S. Navy Chemical, Biological and Radiological Defense (CBRD) policy and establishes functional responsibilities to ensure the highest level of the Fleet readiness and warfighting sustainability in a CBR environment. The Next Generation Chemical Detector (NGCD) provides shipboard point detection system for detecting and identifying nerve and blister agent contamination presence. The equipment procurement is funded out of the Joint Service Chemical Biological Defense Program Budget. [NGCD] Remarks: The Next Generation Chemical Detector (NGCD) is a technology replacement for the IPDS and IPDS-LR systems. The program consists of four variants for multiple applications; the Navy will be installing variant 1 for fixed chemical agent detection capability. The inventory objective for shipboard installations is 185. Previously, installations were expected to start in FY21 with advance planning activities (DSA) to start in FY20, but recent Joint program delays now expect NDGD fielding to Navy to commence FY21, necessitating Navy change planned installations to start FY22.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy									Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0989 / Chemical Warfare Detectors					Modification Number / Title: 5 / CW001 CHEMICAL WARFARE PROGRAM NGCD				
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> CW001 CHEMICAL WARFARE PROGRAM NGCD													
B Kits													
Recurring													
1.1.1) NGCD - NonOrganic ⁽⁵⁾	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	8 / 0.000	12 / 0.000	163 / 0.000	183 / 0.000	
<i>Subtotal: Recurring</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	
<i>Subtotal: CW001 CHEMICAL WARFARE PROGRAM NGCD</i>	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	8 / 0.000	12 / 0.000	163 / 0.000	183 / 0.000	
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	
Installation													
<i>Modification Item 1 of 1:</i> CW001 CHEMICAL WARFARE PROGRAM NGCD	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.456	- / 2.381	- / 3.183	- / 56.600	- / 62.620	
<i>Subtotal: Installation</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.456	- / 2.381	- / 3.183	- / 56.600	- / 62.620	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.456	2.381	3.183	56.600	62.620	

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0989 / Chemical Warfare Detectors	Modification Number / Title: 5 / CW001 CHEMICAL WARFARE PROGRAM NGCD

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

Modification Item 1 of 1: CW001 CHEMICAL WARFARE PROGRAM NGCD

Manufacturer Information

Manufacturer Name: TBD				Manufacturer Location: TBD			
Administrative Leadtime (in Months): 0				Production Leadtime (in Months): 0			
Dates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Contract Dates							
Delivery Dates							

Installation Information

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

Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.456	8 / 2.381	- / -	0 / 0.000	8 / 2.837
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	12 / 3.183	0 / 0.000	12 / 3.183
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	163 / 56.600	163 / 56.600
Total	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.456	8 / 2.381	12 / 3.183	163 / 56.600	183 / 62.620

Installation Schedule

	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	3	3	3	3	163	183	
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	3	3	3	3	163	183	

Footnotes:

⁽⁵⁾ There are no equipment procurement costs with any detector system installed. The Design Service Allocation (DSA) costs are for government engineering oversight/support in preparation for ship installation and ship class planning yards for engineering services which include ship check, development and approval of ship installation drawings (SIDs), Ship Selected Record changes, Bill of Material (BOM), onsite

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0989 / Chemical Warfare Detectors	Modification Number / Title: 5 / CW001 CHEMICAL WARFARE PROGRAM NGCD
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
planning yard engineering support during installation to answer liaison action record (LARs), and other engineering services depending on the planning yard. DSA costs are generally funded up to one year prior to planned installation due to drawing development lead time and installation preparation efforts. These costs are ship specific since drawings are developed for each ship, not class of ship.		

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0989 / Chemical Warfare Detectors						Modification Number / Title: 6 / CW001 CHEMICAL WARFARE PROGRAM EMBD		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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	0.400	2.457	0.380	0.000	0.000	3.237
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	0.400	2.457	0.380	0.000	0.000	3.237
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	0.400	2.457	0.380	0.000	0.000	3.237
<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: OPNAVINST 3400.10F articulates U.S. Navy Chemical, Biological and Radiological Defense (CBRD) policy and establishes functional responsibilities to ensure the highest level of the Fleet readiness and warfighting sustainability in a CBR environment. The Enhanced Maritime Biological Detection (EMBD) system is intended as a lifecycle replacement for the JBPDS system, and will include improved detection and identification capabilities. The equipment procurement is funded out of the Joint Service Chemical Biological Defense Program Budget. [EMBD] Remarks: EMBD is a new acquisition program, which will provide lifecycle replacement kits for existing JBPDS system installations. The EMBD kit is intended to install within the existing JBPDS frame, reducing overall installation complexity and refurbishment unit costs. Refurbishment of ships already equipped with the JBPDS system will be funded by the Joint Service Chemical Biological Program. However, there are seven (7) ships, previously nine (9), that were planned to receive JBPDS, but will not prior to EMBD entering the fleet. Therefore these seven (7) ships will receive "full" EMBD kits, consisting of both the EMBD refurbishment kit and the overall EMBD/JBPDS shell. LCS-2 and LCS-4 were previously included in the EMBD count, but delays in EMBD development by the Joint program neccesitate removal and installation of JBPDS on these hulls to mitigate Warfighter risk. Installation of these full EMBD systems was projected to begin in FY19, however the schedule has slipped to an FY21 fielding. DSA costs will start to be incurred in FY20 for installation planning and drawing development.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy									Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0989 / Chemical Warfare Detectors					Modification Number / Title: 6 / CW001 CHEMICAL WARFARE PROGRAM EMBD				
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> CW001 CHEMICAL WARFARE PROGRAM EMBD													
B Kits													
Recurring													
1.1.1) EMBD - NonOrganic ⁽⁶⁾	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 0.000	1 / 0.000	- / -	- / -	7 / 0.000	
<i>Subtotal: Recurring</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	
<i>Subtotal: CW001 CHEMICAL WARFARE PROGRAM EMBD</i>	- / -	- / -	- / -	- / -	- / -	- / -	- / -	6 / 0.000	1 / 0.000	- / -	- / -	7 / 0.000	
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	
Installation													
<i>Modification Item 1 of 1:</i> CW001 CHEMICAL WARFARE PROGRAM EMBD	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.400	- / 2.457	- / 0.380	- / 0.000	- / 0.000	- / 3.237	
<i>Subtotal: Installation</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / 0.400	- / 2.457	- / 0.380	- / -	- / 0.000	- / 3.237	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	0.000	0.000	0.000	0.000	0.400	2.457	0.380	0.000	0.000	3.237	

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Exhibit P-3a, Individual Modification: PB 2019 Navy											Date: February 2018																				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0989 / Chemical Warfare Detectors										Modification Number / Title: 6 / CW001 CHEMICAL WARFARE PROGRAM EMBD											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: CW001 CHEMICAL WARFARE PROGRAM EMBD																															
Manufacturer Information																															
Manufacturer Name: TBD															Manufacturer Location: TBD																
Administrative Leadtime <i>(in Months)</i> : 0															Production Leadtime <i>(in Months)</i> : 0																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates																															
Delivery Dates																															
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: EMBD																															
Installation Cost		Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		To Complete		Total								
		<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>		<i>Qty (Each) / Total Cost (\$ M)</i>								
Prior Years		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2017		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2018		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2019		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2020		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
FY 2021		- / -	- / -		- / -		- / -		- / -		- / -		0 / 0.400		3 / 2.457		3 / 0.000		- / -		0 / 0.000		6 / 2.857								
FY 2022		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		1 / 0.380		- / -		0 / 0.000		1 / 0.380								
FY 2023		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
To Complete		- / -	- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -								
Total		- / -	- / -		- / -		- / -		- / -		- / -		0 / 0.400		3 / 2.457		4 / 0.380		- / -		0 / 0.000		7 / 3.237								
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	2	1	-	1	-	-	-	-	-	7
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	2	1	-	1	-	-	-	-	-	7
Footnotes: ⁽⁶⁾ There are no equipment procurement costs with any detector system installed. The Design Service Allocation (DSA) costs are for government engineering oversight/support in preparation for ship installation and ship class planning yards for engineering services which include ship check, development and approval of Ship Installation Drawings (SIDs), Ship Selected Record changes, Bill of Material (BOM), onsite																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0989 / Chemical Warfare Detectors	Modification Number / Title: 6 / CW001 CHEMICAL WARFARE PROGRAM EMBD
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
planning yard engineering support during installation to answer liaison action record (LARs), and other engineering services depending on the planning yard. DSA costs are generally funded up to one year prior to planned installation due to drawing development lead time and installation preparation efforts. These costs are ship specific since drawings are developed for each ship, not class of ship.		

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Exhibit P-3a, Individual Modification: PB 2019 Navy						Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0989 / Chemical Warfare Detectors				Modification Number / Title: 7 / CW001 CHEMICAL WARFARE PROGRAM IPDS-LR HEATER UPGRADE			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	0.000	0.000	0.050	1.000	0.000	1.000	1.701	0.152	0.352	0.000	0.000	3.255
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	0.000	0.000	0.050	1.000	0.000	1.000	1.701	0.152	0.352	0.000	0.000	3.255
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	0.000	0.000	0.050	1.000	0.000	1.000	1.701	0.152	0.352	0.000	0.000	3.255
(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:

OPNAVINST 3400.10G articulates U.S. Navy CBRD policy and establishes functional responsibilities to ensure the highest level of the Fleet readiness and warfighting sustainability in a CBR environment. CBRD Improved Point Detection System Heater Upgrade (IPDS-LR HU) provides the ability for IPDS-LR to function in various extreme environmental conditions that may cause system degradation and ultimately failure. This is a new, emergent requirement to ensure automated chemical agent detection is operationally available. The equipment development and procurement for this upgrade is funded out of the Joint Service CBDP Budget and is expected to be provided to Navy by early FY19. Navy must fund integration and installation. DSA costs are expected to start in FY18 with installations to start in FY19.

[IPDS-LR Heater] Remarks: Approximately 115 upgrades are needed of the 125 IPDS-LR installs. Ten (10) ships in FY 2019 and FY 2020 should get this upgrade with the planned IPDS-LR install. Current funding allows for an estimated 89 heater upgrades. The other ships will receive this capability when NGCD replaces IPDS-LR. Once heater upgrade is fully developed by the Joint Service CBDP, further refinement of integration and installation costs can be accomplished. Heater upgrade is currently in prototyping and testing stage.

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Exhibit P-3a, Individual Modification: PB 2019 Navy									Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0989 / Chemical Warfare Detectors					Modification Number / Title: 7 / CW001 CHEMICAL WARFARE PROGRAM IPDS-LR HEATER UPGRADE				
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: [No Model Specified]				Modification Type: TBD				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: CW001 CHEMICAL WARFARE PROGRAM IPDS-LR HEATER UPGRADE													
B Kits													
Recurring													
1.1.1) IPDS-LR Heater - NonOrganic ⁽⁷⁾	- / -	- / -	- / -	20 / 0.000	- / -	20 / 0.000	53 / 0.000	5 / 0.000	11 / 0.000	- / -	- / -	89 / 0.000	
<i>Subtotal: Recurring</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	
<i>Subtotal: CW001 CHEMICAL WARFARE PROGRAM IPDS-LR HEATER UPGRADE</i>	- / -	- / -	- / -	20 / 0.000	- / -	20 / 0.000	53 / 0.000	5 / 0.000	11 / 0.000	- / -	- / -	89 / 0.000	
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	
Installation													
Modification Item 1 of 1: CW001 CHEMICAL WARFARE PROGRAM IPDS-LR HEATER UPGRADE	- / 0.000	- / 0.000	- / 0.050	- / 1.000	- / 0.000	- / 1.000	- / 1.701	- / 0.152	- / 0.352	- / 0.000	- / 0.000	- / 3.255	
<i>Subtotal: Installation</i>	- / 0.000	- / -	- / 0.050	- / 1.000	- / -	- / 1.000	- / 1.701	- / 0.152	- / 0.352	- / -	- / 0.000	- / 3.255	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	0.050	1.000	0.000	1.000	1.701	0.152	0.352	0.000	0.000	3.255	

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9	P-1 Line Item Number / Title: 0989 / Chemical Warfare Detectors	Modification Number / Title: 7 / CW001 CHEMICAL WARFARE PROGRAM IPDS-LR HEATER UPGRADE

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

Modification Item 1 of 1: CW001 CHEMICAL WARFARE PROGRAM IPDS-LR HEATER UPGRADE

Installation Information

Method of Implementation: [none specified]:: Installation Name: IPDS-LR Heater

Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	0 / 0.050	20 / 1.000	0 / 0.000	20 / 1.000	- / -	- / -	- / -	- / -	0 / 0.000	20 / 1.050
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	40 / 1.701	13 / 0.000	- / -	- / -	0 / 0.000	53 / 1.701
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	5 / 0.152	- / -	- / -	0 / 0.000	5 / 0.152
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	11 / 0.352	- / -	0 / 0.000	11 / 0.352
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	0 / 0.050	20 / 1.000	0 / 0.000	20 / 1.000	40 / 1.701	18 / 0.152	11 / 0.352	- / -	0 / 0.000	89 / 3.255

Installation Schedule

	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	5	13	10	10	10	10	7	6	3	2	2	3	3	3	-	-	-	-	-	89
Out	-	-	-	-	-	-	-	-	-	-	2	5	12	11	10	10	10	7	6	3	2	2	3	3	3	-	-	-	-	-	89

Footnotes:

⁽⁷⁾ IPDS-LR Heater Upgrade plan - The procurement costs are specifically referring to Installation and Design Service Allocation (DSA) costs as there are no equipment procurement costs with any detector system installed. DSA costs are for government engineering oversight/support in preparation for ship installation and ship class planning yards for engineering services which include ship check, development and approval of ship installation drawings (SIDs), Ship Selected Record changes, Bill of Material (BOM), onsite planning yard engineering support during installation to answer liaison action record (LARs), and other engineering services depending on the planning yard. DSA costs are generally funded up to one year prior to planned installation due to drawing development lead time and installation preparation efforts. These costs are ship specific since drawings are developed for each ship, not class of ship. - FY18 DSA costs are \$50K. - FY19 installations include twenty (20) DDG-51 Class ships at \$30K each plus \$400K for DSA costs.

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment							P-1 Line Item Number / Title: 0990 / Submarine Life Support 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	86.297	4.543	10.364	11.968	0.000	11.968	11.787	6.916	2.110	2.147	21.800	157.932
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	86.297	4.543	10.364	11.968	0.000	11.968	11.787	6.916	2.110	2.147	21.800	157.932
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	86.297	4.543	10.364	11.968	0.000	11.968	11.787	6.916	2.110	2.147	21.800	157.932
<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: Submarine Life Support System procures Low Pressure Electrolyzer (LPE) oxygen generators to fulfill the Program of Record requirement to replace the legacy obsolete high pressure Electrolytic Oxygen Generator (EOG) on SSBNs. The LPE is critical to the OHIO Class to achieve service life extension to 42 years. Procurements are tied to specific submarine availabilities since a major ship alteration is required for installation. [P40A / SUBMARINE LIFE SUPPORT SYSTEM]: 5D830 - PRODUCTION ENGINEERING The review and approval of any production contract technical documentation, or the separate development of this documentation to include, technical manuals, Preventive Maintenance Schedule, Level III production drawings, Provisioning Technical Documentation, Program Support Data and Allowance Parts Lists; Engineering & support for final design reviews. This work can be accomplished by NSWC PHILA as the in-service engineering agent, other Naval activities or contractors as appropriate. [P3A - 2 / LOW PRESSURE ELECTROLYZER]: 5D010 - THE LOW PRESSURE ELECTROLYZER (LPE) The LPE will replace the EOG currently being used on SSBN/SSGN Class submarines. The LPE produces oxygen at low pressure, eliminating the need for high pressure oxygen storage. There will be two LPEs on each SSBN/SSGN Class submarine. EOG's must be replaced by LPE's on OHIO SSBNs to ensure they can sustain current operational availability requirements through their 42 yr service life. Oxygen Generators are necessary to maintain submarine stealth while on mission. Therefore, procurements are driven by the OHIO Class maintenance period schedule. The replacement of the EOG with the LPE must be done during a major maintenance availability due to the time to complete the installation. As OHIO Class submarine approach the end of service life there are fewer major maintenance periods remaining, increasing the number of concurrent procurements required. Current install schedule supports achieving OHIO Class service life extension to 42 years. Differences in unit costs above inflation are due to the number of units being procured each fiscal year. Unit costs are impacted by quantities of scale.												

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy								Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 9: Other Shipboard Equipment						P-1 Line Item Number / Title: 0990 / Submarine Life Support 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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 LIFE SUPPORT SYSTEM				- / 6.644	- / 0.329	- / 0.329	- / 0.329	- / -	- / 0.329
P-3a	2 / 5D010 LOW PRESSURE ELECTROLYZER (TBD)				- / 79.653	- / 4.214	- / 10.035	- / 11.639	- / 0.000	- / 11.639
P-40	Total Gross/Weapon System Cost				- / 86.297	- / 4.543	- / 10.364	- / 11.968	- / 0.000	- / 11.968
Exhibits Schedule					FY 2020	FY 2021	FY 2022	FY 2023	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 LIFE SUPPORT SYSTEM				- / -	- / -	- / -	- / -	- / -	- / -
P-3a	2 / 5D010 LOW PRESSURE ELECTROLYZER (TBD)				- / 11.458	- / 6.587	- / 1.781	- / 1.818	- / 21.700	- / 148.885
P-40	Total Gross/Weapon System Cost				- / 11.787	- / 6.916	- / 2.110	- / 2.147	- / 21.800	- / 157.932
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown. Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										
Justification: The FY 2019 funding request was reduced by \$0.015 million to reflect the Department of Navy's effort to support the Office of Management and Budget directed reforms for Efficiency and Effectiveness that include a lean, accountable, more efficient government. FY19 Budget request procures 4 LPE units and installs 3 procurements from prior years.										

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy															Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9								P-1 Line Item Number / Title: 0990 / Submarine Life Support System							Aggregated Items Title: SUBMARINE LIFE SUPPORT SYSTEM				

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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) 5D830 PRODUCTION ENGINEERING ⁽¹⁾																				
1.1) PRODUCTION ENGINEERING	A		-	-	6.644	-	-	0.329	-	-	0.329	-	-	0.329	-	-	-	-	-	0.329
Subtotal: 1) 5D830 PRODUCTION ENGINEERING			-	-	6.644	-	-	0.329	-	-	0.329	-	-	0.329	-	-	-	-	-	0.329
Total			-	-	6.644	-	-	0.329	-	-	0.329	-	-	0.329	-	-	-	-	-	0.329

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

Footnotes:

⁽¹⁾ Funding changed to reflect level of effort needed for new contract awarded and anticipating upcoming work.

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Exhibit P-3a, Individual Modification: PB 2019 Navy						Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9				P-1 Line Item Number / Title: 0990 / Submarine Life Support System				Modification Number / Title: 2 / 5D010 LOW PRESSURE ELECTROLYZER			

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

Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	79.653	4.214	10.035	11.639	0.000	11.639	11.458	6.587	1.781	1.818	21.700	148.885
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	79.653	4.214	10.035	11.639	0.000	11.639	11.458	6.587	1.781	1.818	21.700	148.885
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	79.653	4.214	10.035	11.639	0.000	11.639	11.458	6.587	1.781	1.818	21.700	148.885
(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:

[LOW PRESSURE ELECTROLYZER] The LPE will replace the EOG currently being used on SSBN/SSGN Class submarines. The LPE produces oxygen at low pressure, eliminating the need for high pressure oxygen storage. There will be two LPEs on each SSBN/SSGN Class submarine. EOG's must be replaced by LPE's on OHIO SSBNs to ensure they can sustain current operational availability requirements through their 42 yr service life. Oxygen Generators are necessary to maintain submarine stealth while on mission. Therefore, procurements are driven by the OHIO Class maintenance period schedule. The replacement of the EOG with the LPE must be done during a major maintenance availability due to the time to complete the installation. As OHIO Class submarine approach the end of service life there are fewer major maintenance periods remaining, increasing the number of concurrent procurements required. Current install schedule supports achieving OHIO Class service life extension to 42 years. Differences in unit costs above inflation are due to the number of units being procured each fiscal year. Unit costs are impacted by quantities of scale.

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9					P-1 Line Item Number / Title: 0990 / Submarine Life Support System					Modification Number / Title: 2 / 5D010 LOW PRESSURE ELECTROLYZER			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: Low Pressure Electrolyzer				Modification Type: TBD				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> 5D010 LOW PRESSURE ELECTROLYZER													
B Kits													
Recurring													
1.1.1) LOW PRESSURE ELECTROLYZER - NonOrganic ⁽²⁾	25 / 77.153	1 / 4.214	4 / 9.535	4 / 10.089	- / -	4 / 10.089	4 / 9.458	2 / 4.587	- / -	- / -	4 / 18.700	44 / 133.736	
<i>Subtotal: Recurring</i>	- / 77.153	- / 4.214	- / 9.535	- / 10.089	- / -	- / 10.089	- / 9.458	- / 4.587	- / -	- / -	- / 18.700	- / 133.736	
<i>Subtotal: 5D010 LOW PRESSURE ELECTROLYZER</i>	25 / 77.153	1 / 4.214	4 / 9.535	4 / 10.089	- / -	4 / 10.089	4 / 9.458	2 / 4.587	- / -	- / -	4 / 18.700	44 / 133.736	
<i>Subtotal: Procurement, All Modification Items</i>	- / 77.153	- / 4.214	- / 9.535	- / 10.089	- / -	- / 10.089	- / 9.458	- / 4.587	- / -	- / -	- / 18.700	- / 133.736	
Installation													
<i>Modification Item 1 of 1:</i> 5D010 LOW PRESSURE ELECTROLYZER	- / 2.500	- / 0.000	- / 0.500	- / 1.550	- / 0.000	- / 1.550	- / 2.000	- / 2.000	- / 1.781	- / 1.818	- / 3.000	- / 15.149	
<i>Subtotal: Installation</i>	- / 2.500	- / -	- / 0.500	- / 1.550	- / -	- / 1.550	- / 2.000	- / 2.000	- / 1.781	- / 1.818	- / 3.000	- / 15.149	
Total													
Total Cost (Procurement + Support + Installation)	79.653	4.214	10.035	11.639	0.000	11.639	11.458	6.587	1.781	1.818	21.700	148.885	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 9										P-1 Line Item Number / Title: 0990 / Submarine Life Support System										Modification Number / Title: 2 / 5D010 LOW PRESSURE ELECTROLYZER											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: 5D010 LOW PRESSURE ELECTROLYZER																															
Manufacturer Information																															
Manufacturer Name: HAMILTON SUNDSTRAND															Manufacturer Location: CT																
Administrative Leadtime <i>(in Months)</i> : 3															Production Leadtime <i>(in Months)</i> : 15																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates		Nov 2016				Nov 2017				Nov 2018				Nov 2019				Nov 2020													
Delivery Dates		Mar 2019				May 2019				Feb 2020				Feb 2021				Feb 2022													
Installation Information																															
Method of Implementation: Method:: Installation Name: Installation Group Name																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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		22 / 2.500		- / -		1 / 0.500		2 / 1.034		0 / 0.000		2 / 1.034		- / -		- / -		- / -		- / -		0 / 0.000		25 / 4.034							
FY 2017		- / -		- / -		- / -		1 / 0.516		0 / 0.000		1 / 0.516		- / -		- / -		- / -		- / -		0 / 0.000		1 / 0.516							
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		4 / 2.000		- / -		- / -		- / -		0 / 0.000		4 / 2.000							
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		4 / 2.000		- / -		- / -		0 / 0.000		4 / 2.000							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		4 / 1.781		- / -		0 / 0.000		4 / 1.781							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		2 / 1.818		0 / 0.000		2 / 1.818							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		4 / 3.000		4 / 3.000							
Total		22 / 2.500		- / -		1 / 0.500		3 / 1.550		0 / 0.000		3 / 1.550		4 / 2.000		4 / 2.000		4 / 1.781		2 / 1.818		4 / 3.000		44 / 15.149							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	22	-	-	-	-	-	-	-	1	1	2	-	-	2	2	-	-	4	-	-	-	4	-	-	-	2	-	-	-	4	44
Out	22	-	-	-	-	-	-	-	1	1	2	-	-	2	2	-	-	4	-	-	-	4	-	-	-	2	-	-	-	4	44
Footnotes:																															
⁽²⁾ Due to FY15 contract solicitation receiving no interested bidders, FY15 funding was obligated in FY16 when a LPE procurement contract was awarded. The FY15 First Article Unit (FAU) contract was awarded 13 JUL 16 with delivery scheduled for 2018. FY16 and FY17 installation funding was moved to procurement to allow for purchase of units needed to complete program. Only 1 LPE will be delivered in FY18 for installation due to FAU testing requirements for new contract qualification. Upon completion of qualification testing, unit will be refurbished and installed on a submarine.																															

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy	Date: February 2018

Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 10: Reactor Plant Equipment	P-1 Line Item Number / Title: 1010 / Reactor Power Units

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1,449.897	0.000	0.000	346.325	0.000	346.325	0.000	0.000	0.000	0.000	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,449.897	0.000	0.000	346.325	0.000	346.325	0.000	0.000	0.000	0.000	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1,449.897	0.000	0.000	346.325	0.000	346.325	0.000	0.000	0.000	0.000	Continuing	Continuing
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The details of this program are classified CONFIDENTIAL and are submitted to Congress annually in the classified budget justification books.

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 10: Reactor Plant Equipment	P-1 Line Item Number / Title: 1010 / Reactor Power Units

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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	Reactor Power Units				- / 1,449.897	- / -	- / -	- / 346.325	- / -	- / 346.325
P-40	Total Gross/Weapon System Cost				- / 1,449.897	- / 0.000	- / 0.000	- / 346.325	- / 0.000	- / 346.325

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

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

Justification:

The details of this program are classified CONFIDENTIAL and are submitted to Congress annually in the classified budget justification books.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 10							P-1 Line Item Number / Title: 1010 / Reactor Power Units							Aggregated Items Title: Reactor Power Units						
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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) Reactor Power Units																				
1) Reactor Power Units	A		-	-	1,449.897	-	-	-	-	-	-	-	-	346.325	-	-	-	-	-	346.325
Subtotal: 1) Reactor Power Units			-	-	1,449.897	-	-	-	-	-	-	-	-	346.325	-	-	-	-	-	346.325
Total			-	-	1,449.897	-	-	-	-	-	-	-	-	346.325	-	-	-	-	-	346.325

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

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy	Date: February 2018

Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 10: Reactor Plant Equipment	P-1 Line Item Number / Title: 1020 / Reactor Components

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	1,634.808	342.158	534.468	497.063	0.000	497.063	471.421	415.608	460.508	398.801	Continuing	Continuing
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	1,634.808	342.158	534.468	497.063	0.000	497.063	471.421	415.608	460.508	398.801	Continuing	Continuing
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	1,634.808	342.158	534.468	497.063	0.000	497.063	471.421	415.608	460.508	398.801	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 details of this program are classified CONFIDENTIAL and are submitted to Congress annually in the classified budget justification books.

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy								Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 10: Reactor Plant Equipment						P-1 Line Item Number / Title: 1020 / Reactor Components				
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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	Reactor Components				- / 1,634.808	- / 342.158	- / 534.468	- / 497.063	- / -	- / 497.063
P-40	Total Gross/Weapon System Cost				- / 1,634.808	- / 342.158	- / 534.468	- / 497.063	- / 0.000	- / 497.063
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										

Justification:
 The FY 2019 funding request was reduced by \$0.007 million to reflect the Department of Navy's effort to support the Office of Management and Budget directed reforms for Efficiency and Effectiveness that include a lean, accountable, more efficient government.

The details of this program are classified CONFIDENTIAL and are submitted to Congress annually in the classified budget justification books. Beginning in FY 18 and later, items previously requested under OPN LI 1480 (Nuclear Alterations) are now requested under this line item.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 10							P-1 Line Item Number / Title: 1020 / Reactor Components							Aggregated Items Title: Reactor Components						
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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) Reactor Components																				
1.1) Reactor Components	A		-	-	1,634.808	-	-	342.158	-	-	534.468	-	-	497.063	-	-	-	-	-	497.063
Subtotal: 1) Reactor Components			-	-	1,634.808	-	-	342.158	-	-	534.468	-	-	497.063	-	-	-	-	-	497.063
Total			-	-	1,634.808	-	-	342.158	-	-	534.468	-	-	497.063	-	-	-	-	-	497.063

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

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 11: Ocean Engineering							P-1 Line Item Number / Title: 1130 / Diving and Salvage Equipment					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: 0204561N, 0204454N, 0204423N, 0603713N				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	46.817	8.176	10.619	10.706	0.000	10.706	11.940	10.814	10.881	11.078	-	121.031
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	46.817	8.176	10.619	10.706	0.000	10.706	11.940	10.814	10.881	11.078	-	121.031
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	46.817	8.176	10.619	10.706	0.000	10.706	11.940	10.814	10.881	11.078	-	121.031
<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 2019 funding request was reduced by \$.062 million to reflect the Department of Navy's effort to support the Office of Management and Budget directed reforms for Efficiency and Effectiveness that include a lean, accountable, more efficient government. DIVING AND SALVAGE EQUIPMENT: The equipment procured from this Diving and Salvage OPN line item provides critical diving and salvage equipment that enables planned/emergent waterborne submarine/ship repairs, salvage operations (search & recovery) to water depths up to 20,000 feet of seawater and Undersea Clandestine Insertion of Special Operations Forces (UCI-SOF) (service common equipment) to keep our Navy fleet operational and enable national priority missions. Program objectives are to: (1) provide increased safety for diver decompression and better recompression chamber patient monitoring capability, (2) increase underwater ship maintenance capabilities, (3) improve quick response capability, and (4) standardize the configuration of diving systems in the Fleet. Program Growth: FY-19 CONTAINS NO PROGRAM GROWTH. FY-18 saw some growth in diving equipment investment as we move to close an equipment gap that hinders the Fleet's ability to rapidly deploy diving forces. Acquisition of additional compact diving life support systems, including surface supplied augmented SCUBA, and composite flasks for breathing gas storage make diving forces more nimble, operating from a smaller footprint and transporting lighter equipment kits. The acquisition of new SCUBA regulators closes a gap created when older regulators were taken out of service due to revised testing protocols that demonstrated a regulator freeze-up risk in cold water. Additionally we are acquiring an additional SMART Tow system, which permits an unmanned towed vessel to be monitored remotely for flooding, fire and accelerations that might cause damage. As demonstrated on USS FITZGERALD, this system significantly reduces the risk of towing or heavy-lifting an un-manned vessel. FY-18 program funding was also increased to acquire UCI-SOF service common equipment (SCUBA and diver visualization equipment). Return on Investment: The demand for divers' services for salvage, ship husbandry underwater construction, EOD and special warfare is rapidly increasing. Salvage and national operations where this critical and rapidly deployable equipment has been utilized includes the USS FITZGERALD (DDG62) and USS JOHN S. MCCAIN collisions, USS GUARDIAN salvage from the Tubbataha Reef, Fukushima nuclear power plant casualty, Ehime Maru deep water salvage operation, El Faro search/voyage data recorder recovery, Deep Water Horizon oil spill operations, Hurricanes Katrina/Sandy recovery efforts, countless military and civilian waterborne aircraft recoveries and nearly every military diving operation conducted to name but a few. In FY-19 we will acquire essential modernization equipment for the Navy's Ocean Simulation Facility, a one-of-a-kind, forty year old hyperbaric system that supports equipment and human performance testing in simulated ocean depths to 2,240 feet. Additionally, we will acquire SCUBA and surface supplied diving life support equipment for Navy divers who execute special warfare, salvage and underwater ship repair operations every day around the world. FY-19 acquisitions will also close the gap in our salvage equipment inventory requirement for deep ocean recovery systems (sonar, lift lines, tensiometers, and heave-compensated lift system), and ship salvage systems (portable salvage cranes,												

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 11: Ocean Engineering		P-1 Line Item Number / Title: 1130 / Diving and Salvage Equipment
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0204561N, 0204454N, 0204423N, 0603713N
Line Item MDAP/MAIS Code: N/A		
jetting pumps, battle damage repair material, underwater power tools and cutting systems, upgraded winches, ship towing monitoring equipment, and upgrades to hydraulic power units for deck systems). Lastly, we will acquire specialized equipment to allow divers to make underwater repairs to ships and submarines around the world (cofferdams, propeller repair kits, submarine and surface ship support kits), thereby eliminating the need for emergent dry-docking, saving millions of dollars in ship maintenance funds and returning ships to service faster than if dry-docking was required. In FY-16 alone, major underwater repair operations avoided 63 dry-dockings, thereby returning over 700 ship operational days to the Fleet Commanders." [P40A / DIVING (N97)]: The DIVING EQUIPMENT to be procured in the amount of \$3.444M includes modernization of the Navy Experimental Diving Unit's Ocean Simulation Facility, purification units for diver's breathing air, surface supplied diving helmets, surface supplied diving life support consoles and associated air storage flasks, SCUBA equipment, dive computers (wrist mounted for calculating decompression requirements), and pressure chambers (for depth gauge calibration). More detailed descriptions are provided below: [P40A / HY176 - HP AIR COMPRESSORS]: This item replaces high pressure air compressors in existing divers' life support systems which have reached the end of their service life. Required I/O is 300. [P40A / HY177 - AIR PURIFICATION UNITS]: The Portable Air Purification Unit is used when charging diver's life support system breathing air flasks. The Portable Air Monitor Unit can monitor the diver's breathing air in accordance with the requirements of the U.S. Navy Dive Manual and can be inserted inline of the DLSS to monitor the purity of the diver's breathing air in accordance with the requirements of the U.S. Navy Dive Manual. Required I/O is 50 units. [P40A / HY179 - NAVY EXPERIMENTAL DIVING UNIT]: NEDU's mission is to support the Fleet diver through test and evaluation of diving equipment and procedures as well as hyperbaric systems for NAVSEA, Navy, and DoD activities. Funding is to procure equipment for test, facilities atmospheric control, life support, and physiological systems. These systems not only ensure the safety and lives of NEDU sailors performing experimental dives, but ultimately support the combat readiness and mission success of the Fleet sailors who use the equipment tested at NEDU. Funding is included to support the periodic upgrade of Ocean Simulation Facility (OSF) components. The OSF is the world's largest man-rated hyperbaric chamber affording space for 12 divers in 5 hyperbaric dry chambers, man-rated for dives to 2,250 feet of sea water (1000 psi) with a 50' x 15', 55,000-gallon wet-pot capacity, temperatures from 28 to 104 degrees Fahrenheit, an associated 1.3 million-cubic foot (37 km3) bottle field and uses a fully computerized data instrumentation and collection system. Unit prices vary depending on the specific equipment mix planned for upgrade in any single year. [P40A / HY193 - SURFACE SUPPLIED DIVING HELMET]: Kirby Morgan KM-37 NS Underwater Breathing Apparatus. This is a diving helmet with a fiberglass shell and second stage regulator that works in conjunction with a surface supply control console assembly (CCA) and an umbilical. Required I/O is 250. [P40A / HY194 - CONTAMINATED WATER DIVING EQUIPMENT]: Surface supplied diving equipment (helmets, drysuits, umbilicals, surface exhaust consoles, etc.) specifically designed for protecting the diver during in water contaminated water diving operations. Diving equipment is composed of helmets, specialized drysuits, surface return umbilicals, and surface exhaust consoles. Required I/O is 2. [P40A / HY199 - NAVY DIVE COMPUTER]: The Navy Dive Computer is a diver worn decompression computer which provides primarily Self Contained Underwater Breathing Apparatus (SCUBA) divers with real time calculation of decompression limits/obligations. I/O is 1400. [P40A / HY210 - COMPACT DIVER LIFE SUPPORT SYSTEM AIR SUPPLY]: This is a portable Air Supply that has designated primary and secondary air cylinders with a simple, unregulated control panel. The air supply will provide 3000-5000 psi diver-breathing air to diving life support systems including but not limited to the SNDL, TRCS, FADS III, and LWDS. This is for use in surface supplied diving and hyperbaric treatment operations. Required Inventory Objective I/O is 50. [P40A / HY212 - PORTABLE DIVE SYSTEM CONTROL CONSOLE ASSEMBLY (CCA)]: This is a surface supplied diving system control console assembly that will regulate and supply diving breathing gas from the surface to 3 divers. The system is not anticipated to have a volume tank as it will operate on separate high pressure breathing gas sources only. Required Inventory Objective I/O is 100. [P40A / HY213 - HP COMPOSITE FLASK REPLACEMENT]: The flasks used in the CAOS, ASRA, OSRA, HOSRA, CASRA, and COSRA all require replacement after 15 years. NAVSEA 00C has will provide the cylinders to fleet diving commands. Required Inventory Objective I/O is 2500.		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 11: Ocean Engineering		P-1 Line Item Number / Title: 1130 / Diving and Salvage Equipment
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0204561N, 0204454N, 0204423N, 0603713N
Line Item MDAP/MAIS Code: N/A		
[P40A / HY224 - SCUBA REGULATORS]: This is 1st and 2nd stage Self Contained Underwater Breathing Apparatus (SCUBA) regulator fitted with an additional octopus 2nd stage and a console with both a cylinder pressure gauge and diver's depth gauge included. I/O is 5,000. [P40A / HY225 - PRESSURE TEST CHAMBERS]: The pressure test chambers (PTC) have been developed to replace legacy PTC's that have reached the end of their service life. The PTC is a small pressurized chamber and gas supply that allows for comparative calibration of diver depth gauges down to 300 FSW. I/O is 60. [P40A / HY226 - FLEX CHAMBER]: The flexible recompression chamber system is composed of a double-lock flexible chamber, control console, gas supply and interconnecting hoses. The flex chamber is designed as an extreme lightweight system used to treat diver's injuries, including Arterial Gas Embolism and Decompression Sickness. I/O is 36. [P40A / HY233 - SURFACE SUPPLY AUGMENTED SCUBA SYSTEM]: The Surface Supply Augmented SCUBA System consists of the Interspiro DIVIATOR Dive Panel (DP) Surface Supply System and the Interspiro DIVIATOR Self Contained Underwater Breathing Apparatus (SCUBA) System. This is a lightweight, highly portable system which makes is ideal for rapid deployment to remote locations. The apparatus combines the capability of surface supplied diving with the portability of SCUBA. Required Inventory Objective I/O is 50. [P40A / HY234 - DIVER AUGMENTED VISUAL DISPLAY (DAVD)]: The Diver Augmented Visual Display (DAVD) is a system that incorporates 3D sonar mapping, high speed - high frequency helmet mounted sonar, diver tracking, and a head's up display into an existing USN underwater breathing apparatus (UBA). The system allows a diver in low/no visibility waters to locate targets of interest, transit to the location and see their work environment in real-time. In addition, the system allows a top-side diving supervisor to monitor the divers work progress. Each system includes equipment for one diver. Required Inventory Objective I/O is 173 [P40A / NSW SERVICE-COMMON EQUIPMENT (N95)]: The NSW SERVICE COMMON EQUIPMENT to be procured in the amount of \$1.704M includes SCUBA and hand-held sonar and diver visualization systems. More detailed descriptions are provided below: [P40A / HY235 - NSW SERVICE COMMON SCUBA/SONAR KIT]: This kit includes standard SCUBA gear for one diver including: regulator, buoyancy compensator, mask, fins, gloves, boots, suits. In addition, it also includes handheld SONAR systems, lights and other diver visualization gear. I/O is 200 [P40A / HY236 - NSW SERVICE COMMON STANDARD DOUBLE LOCK RECOMPRESSION CHAMBER]: The NSW Service Common Standard Navy Double Lock Recompression Chamber System (SNDLRCS) is a conventional chamber designed and built using standard commercial specifications and standards. The SNDLRCS provides for surface decompression, training, and for the full range of recompression treatment for two patients and two attendants. These chambers are containerized to allow for transport and installation at a destination for long term operations. The SNDLRCS will replace aging legacy recompression chambers that are difficult to maintain and will be retired due to fatigue and material flaws. Required I/O is 4 [P40A / SALVAGE (N97)]: The SALVAGE EQUIPMENT to be procured in the amount of \$5.587M includes high strength synthetic lines for lifting/mooring/towing etc., towing equipment including tow monitoring systems and tow line tension monitoring equipment, portable salvage cranes, salvage winch upgrades, underwater cutting equipment, underwater power tools, jetting pumps, patching kits, compressors, sonar systems, a deep water recovery system and salvage support systems. Also included are underwater ship husbandry equipment (propeller repair kit, a cofferdam kit, surface ship support systems) to permit divers to make underwater repairs to ships and submarines afloat. More detailed descriptions are provided below: [P40A / HY016 - DECK SYSTEMS]: The deck systems are composed of multiple portable hydraulic systems and components that are designed to handle synthetic line or wire rope to aid in moving or positioning of barges, ships, or other floating elements on the water or items resting on the ocean floor. Deck Systems consist of portable hydraulic driven capstans, portable hydraulic driven winches with horizontal capstans, hydraulic power units, control systems, hydraulic hoses and all ancillary equipment. Required I/O is 34. [P40A / HY050 - SYNTHETIC LINES]: This line is used for lifting, mooring, towing, rigging, and in conjunction with the remotely operated vehicles at the salvage site. Required I/O is 123.		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 11: Ocean Engineering		P-1 Line Item Number / Title: 1130 / Diving and Salvage Equipment
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0204561N, 0204454N, 0204423N, 0603713N
Line Item MDAP/MAIS Code: N/A		
[P40A / HY062 - ROV SONAR SYSTEMS]: These sonars are used on the SWISS, DEEP DRONE, ORION, HYDROS, and CURV-21 remotely operated vehicles to locate items lost on the sea floor, aircraft debris fields, sunken hull sections, and submerged obstacles. Total I/O is 8 (6 operational plus 2 spares). [P40A / HY116 - PORTABLE SUBMERSIBLE PUMPS]: The submersible salvage pump system is designed move large volumes of fluid at a high discharge pressure resulting is a high lift capacity. The submersible pumps vary in discharge size of 2" to over 24" to meet designated response requirements. Systems are modular packaged for rapid deployment and transportation. Pump assemblies are designed to be used through limited access openings or to be positioned in confined spaces. Submersible salvage pump systems consist of submersible hydraulic pumps (2" to 24"), hydraulic power units, hydraulic hoses, and all ancillary equipment. Required I/O is 94. [P40A / HY131 - ROV HANDLING SYSTEM]: These systems are used to launch and recover remotely operated vehicles and to tend the deployed cable, compensate for ship motion, monitor cable tension, and store cable. Required I/O is 10 (5 operational and 5 spares). [P40A / HY140 ROV CONTROL PACKAGE]: The ROV Control Package is used to control the various functions of the SWISS, DEEP DRONE, ORION, and CURV-21 ROVs. Required I/O is 6 (3 operational plus 3 spares). [P40A / HY145 - COFFERDAM SYSTEM]: This system will contain a variety of cofferdams necessary to accomplish underwater repair tasks to hull plating, shafts, stern tubes and sea chests on several ship classes. The cofferdams are engineered structural habitats which provide a safe underwater dry environment for divers to work and require very little maintenance. Required I/O is 50. [P40A / HY146 - PROPELLER REPAIR KIT]: These kits will contain the tools necessary to repair minor propeller damage underwater. By accomplishing these repairs in-place, propeller removal and replacement can be avoided thereby saving maintenance funds and returning ships to service faster. Required I/O is 20. [P40A / HY147 - ROV TELEMETRY SYSTEM]: The ROV Telemetry System is the communication link between the surface controller and the vehicle. Required I/O is 6 (3 operational plus 3 spares). [P40A / HY153 - TENSIMETERS]: Tensiometers are used to measure the tension exerted on a beach gear ground leg or heavy lift system. One system consists of two load sensing units with associated rigging and read-out meters. Required I/O is 66. [P40A / HY156 - SALVAGE VANS]: Salvage Vans are modified ISO 8ft x 8ft x 20ft shipping containers that are equipped with industrial shop equipment, hand tools, powered hand tools, lifting and hoisting devices, and other misc required material to fulfill the various missions of salvage and recovery. Each van is outfitted with humidity control devices for prolonging equipment life during storage. Required I/O is 10. [P40A / HY166 - ROV TOOL PACKAGE]: This tool package is utilized by remotely operated vehicles to accomplish work on objects on the sea floor and in the water column. I/O is 8. [P40A / HY169 - UWSH POWER TOOLS]: These tools will replace the hydraulic tool previously issued to Fleet divers with improved technology. This technology improvement will provide tools which are more environmentally compatible, offer greater power, lighter weight and reduced maintenance. I/O is 20. [P40A / HY184 - SALVAGE SUPPORT SYSTEMS]: Salvage support systems are used to support Fleet Salvage Operations and include complex systems and equipment required for Command & Control, communications, supply, repair, rigging, and personnel support. Each system includes the storage and shipping containers necessary to forward deploy the systems and equipment to a salvage site. Humidity control devices are used for prolonging equipment life during storage. Required I/O is 10. [P40A / HY186 - SMART TOW SYSTEMS]: These systems consists of load cells, accelerometers, fire and flooding alarms, telemetry links and ancillary equipment to provide ship handlers with information critical to safe conduct of open ocean tows. I/O is 6.		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 11: Ocean Engineering		P-1 Line Item Number / Title: 1130 / Diving and Salvage Equipment
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0204561N, 0204454N, 0204423N, 0603713N
Line Item MDAP/MAIS Code: N/A		
[P40A / HY190 - VIDEO/CAMERA EQUIPMENT]: Underwater video/camera equipment used by divers to perform detailed inspections and provide objective quality evidence (OQE) of ship hulls and appendages condition before, during and after repair. Equipment is used extensively throughout the Fleet. This equipment will replace aging systems currently in use throughout the Fleet. I/O is 30. [P40A / HY195 - UNDERWATER RIGGING SUPPORT SYSTEM]: General and special purpose rigging and rigging support equipment designed for use in underwater ship repair applications. These systems support operation across all ship and submarine classes. I/O is 20. [P40A / HY196 - UWSH SUBMARINE SUPPORT SYSTEM]: Special purpose underwater tools and equipment used by divers to perform routine and emergent repairs on all classes of submarines. I/O is 24. [P40A / HY197 - UWSH PIERSIDE SUPPORT VANS]: Portable milvans and shippable containers outfitted with general and special purpose tools to support various underwater ship husbandry operations. I/O is 12. [P40A / HY198 - UWSH SURFACE SHIP SUPPORT SYSTEMS]: Special purpose underwater tools and equipment used by divers to perform routine and emergent repairs to all Classes of surface ships. I/O is 32. [P40A / HY201 - JETTING PUMPS]: System is designed to provide a high velocity water stream to move mud, sand, or silt. The system consists of a medium pressure, high flow rate pump that supplies water to specially designed diver operated jetting nozzles via high pressure hoses. The system is used mainly for jetting, but also can be used for firefighting and limited dewatering. Unit Issue increase in FY18 due to Tier IV engines reengineered to meet EPA standards. I/O is 22. [P40A / HY203 - HYDRAULIC U/W TOOL KIT]: Tool kit consists of various hydraulic actuated tools operated by a diver to perform various tasks underwater. The kit also contains hydraulic hoses, various fittings, and accessories. Required Inventory Objective I/O is 25. [P40A / HY205 - LIGHTING KIT SYSTEM]: System consists of extendable masts, 500-watt halogen floodlights, drop lights, extension cords, spare bulbs, and other miscellaneous items to support general lighting for salvage and oil pollution operations. The Lighting Kit System can use any 100-volt, single phase power source found at the salvage or pollution site. Required Inventory Objective I/O is 25. [P40A / HY206 - KERRIE CABLE UNDERWATER CUTTING SYSTEM]: Underwater cutting systems are used by salvage response personnel to cut through metal and other material either underwater or in air using an exothermic material. The underwater cutting systems include the exothermic material including Brocco Rod or Kerri Cable, pressurize oxygen gas hoses and regulators, cutting support fixtures, and all ancillary equipment. Required I/O is 36. [P40A / HY216 - SALVAGE/BDR MATERIAL KIT]: This system is for emergency response to ship casualties and provides the necessary material to construct custom patches and cofferdams. The kit also includes tools to install the custom built items in place over the damaged hull sections. I/O is 6. [P40A / HY217 - SALVAGE LIFT BAGS (22K lbs)]: This system provides a buoyant force using compressed air to lift or support items in the water column. These Lift Bags are sized to provide a force of approximately 22,000 lbs. The I/O is 22. [P40A / HY218 - SALVAGE LIFT BAGS (35 TONS)]: This system provides a buoyant force using compressed air to lift or support items in the water column. These Lift Bags are sized to provide a force of approximately 35 tons. The I/O is 16. [P40A / HY219 - PORTABLE SALVAGE CRANE]: A portable crane system for use on a vessel of opportunity to provide a lifting force during salvage operations. I/O is 8. [P40A / HY221 - ADVANCED POWER GENERATOR]: This system generates electrical power using solar and wind energy and stores it in super efficient Lithium Ion Batteries. The system is capable of supplying electrical power to operate a Command Van, Salvage Shop Van and a Salvage BDR Rigging Van for up to 5 days with no traditional petroleum fueled electrical power generator support. I/O is 8.		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 11: Ocean Engineering		P-1 Line Item Number / Title: 1130 / Diving and Salvage Equipment
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0204561N, 0204454N, 0204423N, 0603713N
Line Item MDAP/MAIS Code: N/A		
[P40A / HY223 - 3D SONAR]: This system generates a 3D Image of the area or object being surveyed and is viewable in real time. The record of data is viewable off line for mission planning, allows for the measurement of distances and dimensions, and can be used during mission execution for operational control and situational awareness in zero visibility situations. I/O is 2. [P40A / HY227 - COMPLEX AND/OR LARGE UWSH REPAIR COFFERDAM SUPPORT SYSTEMS]: Special purpose underwater tools, equipment, cofferdams and habitat with a higher complexity and or size used by divers to perform routine and emergent repairs on all classes of surface ship and submarines. I/O is 15. [P40A / HY228 - CLYDE WINCH UPGRADE MODIFICATIONS]: Portable Clyde deck winch consists of a dual drum assembly and a horizontal capstan mounted on the side of the deck winch. The deck winch is hydraulically driven by a self contained diesel engine and each drum/ capstan can pull up to 8 tons. The drive mechanism and braking system is upgraded to a hydraulic control and operation. Required I/O is 25. [P40A / HY229 - AC SOLAR CELL DEPLOYMENT KIT]: This system provides all the necessary equipment to power the energy efficient Salvage Command Center with solar energy. Contained within the systems are the solar panels, mounting brackets/frames/hardware, safety rails, installation tools, and all handling equipment. Required I/O is 8. [P40A / HY230 - NEXGEN HYDRAULIC POWER UNIT, MOD 6B]: This Hydraulic Power Unit is designed to provide the hydraulic fluids to operate US Navy Salvage equipment including the Beach Gear system. The hydraulic power unit is silenced for significant personnel safety and meets the latest environmental standards for clean air. Required I/O is 60. [P40A / HY231 - REMOTE SITE LOGISTIC SUPPORT HANDLING SYSTEM]: This system allows for offloading and loading of containerized Salvage equipment at remote locations that do not have logistic handling equipment. System is capable of offloading/loading US Cargo aircraft and surface transportation trucks in remote locations without the aid of forklift. Systems also contains the ability for local movement of equipment over unimproved surfaces. Required I/O is 8. [P40A / HY232 - DECK SYSTEMS HYDRAULIC POWER UNIT UPGRADE]: Deck Systems Hydraulic Power Unit Upgrade: The Hydraulic Power Units the provide hydraulic fluid to operate the Portable Capstan are at the end of their service life and are no longer supported by the manufacturer. New HPU is more reliable, simpler to maintain, and is sound silenced for enhanced personnel safety. Required I/O is 22. [P40A / HY237 - COMMAND CONFERENCE CENTER]: Provides a large expandable office area that is attached to the Salvage Command Van or can operate independently. Space will be environmentally controlled, able to be quickly unpacked with hard sides, and when repacked the shipping foot print will be a 20 ft connex box. Required I/O is 2 [P40A / HY238 - SALVAGE EQUIPMENT TRANSPORT AND LANDING CRAFT]: A cargo vessel designed to operate with a two person crew, cargo capacity of at least 5000 lbs, articulating crane to pick up and load cargo from the pier, A-frame to load or unload cargo, bow ramp to drive on or off, and is capable of road transportation or airlift. Cruise speed is 25 knots at full load, a pusher bow attachment, and a tow bar. Required I/O is 6 [P40A / HY239 - 600 CFM SALVAGE AIR COMPRESSOR]: 600 CFM Salvage Air Compressors are utilized to provide large quantities of compressed air for restoration of lost buoyancy in very large spaces shipboard (i.e. Engine Room, Aux Machinery Room #1, etc.) Required I/O is 8. [P40A / HY240 - SALVAGE PATCHING AND RIGGING VAN]: This system is for emergency response to ship casualties and provides the necessary material to construct custom patches and cofferdams. The kit also includes tools to install the custom built items in place over the damaged hull sections. Required I/O is 6. [P40A / HY241 - DEEP OCEAN SALVAGE SYSTEM]: Heave compensated lift system with power unit and ancillary equipment for executing deep water recovery operations. Required I/O is 2.		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy							Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 11: Ocean Engineering					P-1 Line Item Number / Title: 1130 / Diving and Salvage Equipment					
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: 0204561N, 0204454N, 0204423N, 0603713N				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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	Diving and Salvage Equipment	P-5a			- / 46.817	- / 8.176	- / 10.619	- / 10.706	- / -	- / 10.706
P-40	Total Gross/Weapon System Cost				- / 46.817	- / 8.176	- / 10.619	- / 10.706	- / 0.000	- / 10.706
*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 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 11								P-1 Line Item Number / Title: 1130 / Diving and Salvage Equipment							Aggregated Items Title: Diving and Salvage Equipment					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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) DIVING (N97)																				
1.1) HY176 - HP AIR COMPRESSORS ^(†)	A		38,333.33	15	0.575	-	-	-	74,000.00	1	0.074	-	-	-	-	-	-	-	-	-
1.2) HY177 - AIR PURIFICATION UNITS ^(†)	A		81,681.82	22	1.797	44,300.00	10	0.443	45,166.67	12	0.542	45,100.00	13	0.586	-	-	-	45,100.00	13	0.586
1.3) HY179 - NAVY EXPERIMENTAL DIVING UNIT ^(†)	A		995,142.86	7	6.966	595,000.00	1	0.595	619,000.00	1	0.619	627,000.00	1	0.627	-	-	-	627,000.00	1	0.627
1.4) HY193 - SURFACE SUPPLIED DIVING HELMET ^{(1)(†)}	A		16,357.14	42	0.687	-	-	-	7,142.86	7	0.050	7,076.00	6	0.042	-	-	-	7,076.00	6	0.042
1.5) HY194 - CONTAMINATED WATER DIVING EQUIPMENT ^(†)	A		339,666.67	3	1.019	198,000.00	1	0.198	-	-	-	-	-	-	-	-	-	-	-	-
1.6) HY199 - NAVY DIVE COMPUTER ^(†)	A		1,650.87	633	1.045	1,557.14	70	0.109	1,586.67	75	0.119	1,590.00	51	0.081	-	-	-	1,590.00	51	0.081
1.7) HY210 - COMPACT DIVER LIFE SUPPORT SYSTEM AIR SUPPLY ^(†)	A		46,120.00	25	1.153	20,333.33	6	0.122	20,750.00	12	0.249	20,720.00	10	0.207	-	-	-	20,720.00	10	0.207
1.8) HY212 - PORTABLE DIVE SYSTEM CONTROL CONSOLE ASSEMBLY (CCA) ^(†)	A		136,111.11	9	1.225	110,555.56	9	0.995	114,428.57	9	1.030	114,280.00	8	0.914	-	-	-	114,280.00	8	0.914
1.9) HY213 - HP COMPOSITE FLASK REPLACEMENT ^(†)	A		4,652.08	480	2.233	4,943.66	71	0.351	5,037.50	80	0.403	5,032.00	80	0.403	-	-	-	5,032.00	80	0.403
1.10) HY224 - SCUBA REGULATORS ^(†)	A		1,022.99	87	0.089	1,050.00	20	0.021	1,056.60	53	0.056	1,060.00	69	0.073	-	-	-	1,060.00	69	0.073
1.11) HY225 - PRESSURE TEST CHAMBERS ^(†)	A		12,228.57	35	0.428	12,500.00	10	0.125	12,700.00	10	0.127	-	-	-	-	-	-	-	-	-
1.13) HY233 - SURFACE SUPPLY AUGMENTED SCUBA SYSTEM ^{(2)(†)}	A		-	-	-	-	-	-	109,000.00	1	0.109	108,860.00	4	0.435	-	-	-	108,860.00	4	0.435
Subtotal: 1) DIVING (N97)			-	-	17.217	-	-	2.959	-	-	3.378	-	-	3.368	-	-	-	-	-	3.368
2) NSW SERVICE-COMMON EQUIPMENT (N95)																				
2.1) HY235 - NSW SERVICE COMMON	A		-	-	-	-	-	-	100,176.47	17	1.703	105,125.00	16	1.682	-	-	-	105,125.00	16	1.682

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 11								P-1 Line Item Number / Title: 1130 / Diving and Salvage Equipment							Aggregated Items Title: Diving and Salvage Equipment					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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)
SCUBA/SONAR KIT (3)(†)																				
Subtotal: 2) NSW SERVICE-COMMON EQUIPMENT (N95)			-	-	0.000	-	-	-	-	-	1.703	-	-	1.682	-	-	-	-	-	1.682
3) SALVAGE (N97)																				
3.1) HY016 - DECK SYSTEMS (4)(†)	A		44,076.92	13	0.573	61,500.00	2	0.123	-	-	-	-	-	-	-	-	-	-	-	-
3.2) HY050 - SYNTHETIC LINES(†)	A		203,500.00	2	0.407	-	-	-	-	-	-	198,000.00	2	0.396	-	-	-	198,000.00	2	0.396
3.3) HY062 - ROV SONAR SYSTEMS(†)	A		186,000.00	1	0.186	1,761K	1	1.761	-	-	-	-	-	-	-	-	-	-	-	-
3.4) HY116 - PORTABLE SUBMERSIBLE PUMPS (5)(†)	A		148,352.94	17	2.522	-	-	-	123,333.33	3	0.370	-	-	-	-	-	-	-	-	-
3.5) HY131 - ROV HANDLING SYSTEM(†)	A		-	-	-	-	-	-	1,084K	1	1.084	-	-	-	-	-	-	-	-	-
3.7) HY145 - COFFERDAM SYSTEM (6)(†)	A		294,222.22	9	2.648	123,666.67	3	0.371	-	-	-	-	-	-	-	-	-	-	-	-
3.8) HY146 - PROPELLER REPAIR KIT (7)(†)	A		315,250.00	4	1.261	269,000.00	1	0.269	249,000.00	2	0.498	228,400.00	1	0.228	-	-	-	228,400.00	1	0.228
3.9) HY147 - ROV TELEMETRY SYSTEM	A		0.00	1	0.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.10) HY153 - TENSIMETERS(†)	A		15,785.71	28	0.442	-	-	-	16,250.00	4	0.065	14,850.00	2	0.030	-	-	-	14,850.00	2	0.030
3.11) HY156 - SALVAGE VANS (8)(†)	A		163,857.14	7	1.147	207,000.00	1	0.207	211,000.00	1	0.211	-	-	-	-	-	-	-	-	-
3.13) HY169 - UWSH POWER TOOLS (9)(†)	A		136,000.00	4	0.544	120,000.00	2	0.240	-	-	-	-	-	-	-	-	-	-	-	-
3.14) HY184 - SALVAGE SUPPORT SYSTEMS (10)(†)	A		332,500.00	8	2.660	-	-	-	224,000.00	1	0.224	215,100.00	1	0.215	-	-	-	215,100.00	1	0.215
3.15) HY186 - SMART TOW SYSTEMS (11)(†)	A		98,000.00	2	0.196	165,000.00	1	0.165	168,000.00	1	0.168	153,900.00	1	0.154	-	-	-	153,900.00	1	0.154
3.16) HY190 - VIDEO/CAMERA EQUIPMENT (12)	A		114,142.86	7	0.799	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.17) HY195 - UNDERWATER	A		241,000.00	9	2.169	201,500.00	2	0.403	-	-	-	186,975.00	1	0.187	-	-	-	186,975.00	1	0.187

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Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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)
RIGGING SUPPORT SYSTEM ^{(13)(t)}																				
3.18) HY196 - UWSH SUBMARINE SUPPORT SYSTEM ^{(14)(t)}	A		562,750.00	12	6.753	543,000.00	1	0.543	502,000.00	1	0.502	-	-	-	-	-	-	-	-	-
3.19) HY197 - UWSH PIERSIDE SUPPORT VANS ⁽¹⁵⁾	A		314,250.00	4	1.257	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.20) HY198 - UWSH SURFACE SHIP SUPPORT SYSTEMS ^{(16)(t)}	A		165,578.95	19	3.146	121,500.00	2	0.243	125,000.00	3	0.375	115,200.00	4	0.461	-	-	-	115,200.00	4	0.461
3.21) HY201 - JETTING PUMPS ^{(17)(t)}	A		195,875.00	8	1.567	214,000.00	3	0.642	240,000.00	2	0.480	219,600.00	2	0.439	-	-	-	219,600.00	2	0.439
3.22) HY203 - HYDRAULIC U/W TOOL KIT ^(t)	A		57,058.82	17	0.970	67,000.00	1	0.067	-	-	-	63,000.00	1	0.063	-	-	-	63,000.00	1	0.063
3.23) HY205 - LIGHTING KIT SYSTEM ^(t)	A		15,200.00	20	0.304	-	-	-	-	-	-	17,100.00	2	0.034	-	-	-	17,100.00	2	0.034
3.24) HY206 - KERRIE CABLE UNDERWATER CUTTING SYSTEM ^(t)	A		-	-	-	-	-	-	18,500.00	6	0.111	16,875.00	7	0.118	-	-	-	16,875.00	7	0.118
3.25) HY216 - SALVAGE/BDR MATERIAL KIT ^{(18)(t)}	A		49,000.00	1	0.049	51,000.00	3	0.153	60,000.00	2	0.120	-	-	-	-	-	-	-	-	-
3.27) HY218 - SALVAGE LIFT BAGS (35 TONS) ^{(19)(t)}	A		-	-	-	15,000.00	2	0.030	-	-	-	-	-	-	-	-	-	-	-	-
3.28) HY219 - PORTABLE SALVAGE CRANE ^(t)	A		-	-	-	-	-	-	216,000.00	1	0.216	197,100.00	1	0.197	-	-	-	197,100.00	1	0.197
3.30) HY223 - 3D SONAR ^(t)	A		-	-	-	-	-	-	-	-	-	583,200.00	1	0.583	-	-	-	583,200.00	1	0.583
3.31) HY227 - COMPLEX AND/OR LARGE UWSH REPAIR COFFERDAM SUPPORT SYSTEMS ^(t)	A		-	-	-	-	-	-	780,000.00	1	0.780	713,700.00	1	0.714	-	-	-	713,700.00	1	0.714

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy															Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 11								P-1 Line Item Number / Title: 1130 / Diving and Salvage Equipment							Aggregated Items Title: Diving and Salvage Equipment				

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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)
3.32) HY228 - CLYDE WINCH UPGRADE MODIFICATIONS ^(†)	A		-	-	-	-	-	-	114,000.00	2	0.228	104,850.00	6	0.629	-	-	-	104,850.00	6	0.629
3.33) HY229 - AC SOLAR CELL DEPLOYMENT KIT ^(†)	A		-	-	-	-	-	-	-	-	-	63,000.00	1	0.063	-	-	-	63,000.00	1	0.063
3.34) HY230 - NEXGEN HYDRAULIC POWER UNIT, MOD 6B ^(†)	A		-	-	-	-	-	-	106,000.00	1	0.106	97,200.00	1	0.097	-	-	-	97,200.00	1	0.097
3.36) HY232 - DECK SYSTEMS HYDRAULIC POWER UNIT UPGRADE ^(†)	A		-	-	-	-	-	-	-	-	-	25,200.00	3	0.076	-	-	-	25,200.00	3	0.076
3.39) HY239 - 600 CFM SALVAGE AIR COMPRESSOR ^(†)	A		-	-	-	-	-	-	-	-	-	81,900.00	1	0.082	-	-	-	81,900.00	1	0.082
3.40) HY240 - SALVAGE PATCHING AND RIGGING VAN ^(†)	A		-	-	-	-	-	-	-	-	-	75,600.00	2	0.151	-	-	-	75,600.00	2	0.151
3.41) HY241 - DEEP OCEAN SALVAGE SYSTEM ^(†)	A		-	-	-	-	-	-	-	-	-	738,900.00	1	0.739	-	-	-	738,900.00	1	0.739
Subtotal: 3) SALVAGE (N97)			-	-	29.600	-	-	5.217	-	-	5.538	-	-	5.656	-	-	-	-	-	5.656
Total			-	-	46.817	-	-	8.176	-	-	10.619	-	-	10.706	-	-	-	-	-	10.706

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) HY193 - SURFACE SUPPLIED DIVING HELMET: Intent on PB17 budget was to include an updated heads-up-display in the diving helmet which would increase unit cost. The R&D project is delayed; therefore, the heads-up-display was dropped from the procurement thereby reducing the unit cost.
- (2) HY233 - SURFACE SUPPLY AUGMENTED SCUBA SYSTEM: Costs are reducing over time due to manufacturing efficiencies. Steady state costs are anticipated to start in FY20. Number of units procured is not likely to affect unit cost due to small numbers procured.
- (3) HY235 - NSW SERVICE COMMON SCUBA/SONAR KIT: Slight modification to sonar system is anticipated in FY20 that is likely to increase cost before manufacturing efficiencies are realized.
- (4) HY016 - DECK CAPSTANS: Unit cost variation is dependent on the specific components required IAW the procurement schedule.
- (5) HY116 - PORTABLE SUBMERSIBLE PUMPS: Unit cost variation is dependent on the specific components required IAW the procurement schedule.
- (6) HY145 - COFFERDAM SYSTEM: Cofferdam and habitat systems vary widely in complexity and size with a unit cost that varies accordingly.
- (7) HY146 - PROPELLER REPAIR KIT: Propellers across various ship classes have a wide variance of component costs therefore, unit cost variation for repair kits is dependent on the specific components required IAW the procurement schedule.
- (8) HY156 - SALVAGE VANS: Unit cost variation is dependent on the specific components required IAW the procurement schedule.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 11	P-1 Line Item Number / Title: 1130 / Diving and Salvage Equipment	Aggregated Items Title: Diving and Salvage Equipment
(9) HY169 - UWSH POWER TOOLS: Hydraulic tools vary in complexity and size which is manifested in an applicable unit cost variance. (10) HY184 - SALVAGE SUPPORT SYSTEMS - Unit cost variation is dependent on the specific components required IAW the procurement schedule. (11) HY186 - SMART TOW SYSTEMS: Current version incorporates almost 7 years of Fleet Feedback on the performance of the SMART Tow system. Significant technical enhancements have been implemented in order to improve reliability and performance of the system in most arduous sea conditions. Fleet requirements to tow larger combatants under no-manning conditions have resulted in a substantially larger system with additional sensors and higher order programming to ensure the tows are completed safely over greater distances. Unit costs reflect current market analysis of the advance technology components employed in the system. (12) HY190 - VIDEO/CAMERA EQUIPMENT: Change in unit cost reflects changes in technology and capabilities of these systems. (13) HY195 - UNDERWATER RIGGING SUPPORT SYSTEM: The complexity of these systems varies depending on the weight and dimensions of the components on which they are used; this is reflected in changes in unit cost. (14) HY196 - UWSH SUBMARINE SUPPORT SYSTEM: These systems support 5 submarine classes with significant differences in complexity, size, configuration and function all of which translates into a unit cost variance. (15) HY197 - UWSH PIERSIDE SUPPORT VANS: Unit cost variation is dependent on the specific components required IAW the procurement schedule. (16) HY198 UWSH SURFACE SHIP SUPPORT SYSTEMS: These systems support all classes of surface ships with significant differences in complexity, size, configuration and function all of which translates into a unit cost variance. (17) HY201 - JETTING PUMPS: Cost increase due to implementation of Emission Standard-Tier 4 diesel engines. (18) HY216 - SALVAGE/BDR MATERIAL KIT: Cost increase due to market, commercial increases by component suppliers and system inventory adjustments due to Fleet input. (19) HY218 - SALVAGE LIFT BAGS (35 TONS): Cost increase due to market, commercial increases by component suppliers.		

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Exhibit P-5a, Procurement History and Planning: PB 2019 Navy									Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 11				P-1 Line Item Number / Title: 1130 / Diving and Salvage Equipment					Aggregated Items: Diving and Salvage Equipment			
Item Number / Title [DODIC]	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1) DIVING (N97)												
1.1) HY176 - HP AIR COMPRESSORS		2018	Unknown / TBD	C / TBD	WASHINGTON, DC	Apr 2018	Apr 2019	1	74,000.00	Y		
1.2) HY177 - AIR PURIFICATION UNITS		2017	GLOBAL PCCI / IRVINE CA	C / CPAF	WASHINGTON, DC	Apr 2017	Apr 2018	10	44,300.00	Y		
1.2) HY177 - AIR PURIFICATION UNITS		2018	Unknown / TBD	C / TBD	WASHINGTON, DC	Apr 2018	Apr 2019	12	45,166.67	Y		
1.2) HY177 - AIR PURIFICATION UNITS		2019	Unknown / TBD	C / TBD	WASHINGTON, DC	Oct 2018	Oct 2019	13	45,100.00	Y		
1.3) HY179 - NAVY EXPERIMENTAL DIVING UNIT		2017	Navy Experimental Diving Unit / Panama City, FL	Various	Panama City, FL	Apr 2017	Apr 2018	1	595,000.00	Y		
1.3) HY179 - NAVY EXPERIMENTAL DIVING UNIT		2018	Navy Experimental Diving Unit / Panama City, FL	C / TBD	Panama City, FL	Apr 2018	Apr 2019	1	619,000.00	Y		
1.3) HY179 - NAVY EXPERIMENTAL DIVING UNIT		2019	TBD / TBD	C / TBD	Panama City, FL	Oct 2018	Oct 2019	1	627,000.00	Y		
1.4) HY193 - SURFACE SUPPLIED DIVING HELMET ⁽¹⁾		2018	Unknown / TBD	C / TBD	WASHINGTON, DC	Apr 2018	Apr 2019	7	7,142.86	Y		
1.4) HY193 - SURFACE SUPPLIED DIVING HELMET ⁽¹⁾		2019	Unknown / TBD	C / TBD	WASHINGTON, DC	Oct 2018	Oct 2019	6	7,076.00	Y		
1.5) HY194 - CONTAMINATED WATER DIVING EQUIPMENT		2017	GLOBAL PCCI / IRVINE CA	C / CPAF	WASHINGTON, DC	Apr 2017	Apr 2018	1	198,000.00	Y		
1.6) HY199 - NAVY DIVE COMPUTER		2017	GLOBAL PCCI / IRVINE CA	C / CPAF	WASHINGTON, DC	Jan 2017	Jan 2018	70	1,557.14	Y		
1.6) HY199 - NAVY DIVE COMPUTER		2018	Unknown / TBD	C / TBD	WASHINGTON, DC	Apr 2018	Apr 2019	75	1,586.67	Y		
1.6) HY199 - NAVY DIVE COMPUTER		2019	Unknown / TBD	C / TBD	WASHINGTON, DC	Oct 2018	Oct 2019	51	1,590.00	Y		
1.7) HY210 - COMPACT DIVER LIFE SUPPORT SYSTEM AIR SUPPLY		2017	GLOBAL PCCI / IRVINE CA	C / CPAF	WASHINGTON, DC	Apr 2017	Apr 2018	6	20,333.33	Y		
1.7) HY210 - COMPACT DIVER LIFE SUPPORT SYSTEM AIR SUPPLY		2018	Unknown / TBD	C / TBD	WASHINGTON, DC	Apr 2018	Apr 2019	12	20,750.00	Y		
1.7) HY210 - COMPACT DIVER LIFE SUPPORT SYSTEM AIR SUPPLY		2019	Unknown / TBD	C / TBD	WASHINGTON, DC	Oct 2018	Oct 2019	10	20,720.00	Y		
1.8) HY212 - PORTABLE DIVE SYSTEM CONTROL CONSOLE ASSEMBLY (CCA)		2017	GLOBAL PCCI / IRVINE CA	C / CPAF	WASHINGTON, DC	Mar 2017	Mar 2018	9	110,555.56	Y		

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Exhibit P-5a, Procurement History and Planning: PB 2019 Navy								Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 11			P-1 Line Item Number / Title: 1130 / Diving and Salvage Equipment					Aggregated Items: Diving and Salvage Equipment				
Item Number / Title [DODIC]	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.8) HY212 - PORTABLE DIVE SYSTEM CONTROL CONSOLE ASSEMBLY (CCA)		2018	Unknown / TBD	C / TBD	WASHINGTON, DC	Apr 2018	Apr 2019	9	114,428.57	Y		
1.8) HY212 - PORTABLE DIVE SYSTEM CONTROL CONSOLE ASSEMBLY (CCA)		2019	Unknown / TBD	C / TBD	WASHINGTON, DC	Oct 2018	Oct 2019	8	114,280.00	Y		
1.9) HY213 - HP COMPOSITE FLASK REPLACEMENT		2017	GLOBAL PCCI / IRVINE CA	C / CPAF	WASHINGTON, DC	Jan 2017	Jan 2018	71	4,943.66	Y		
1.9) HY213 - HP COMPOSITE FLASK REPLACEMENT		2018	Unknown / TBD	C / TBD	WASHINGTON, DC	Apr 2018	Apr 2019	80	5,037.50	Y		
1.9) HY213 - HP COMPOSITE FLASK REPLACEMENT		2019	Unknown / TBD	C / TBD	WASHINGTON, DC	Oct 2018	Oct 2019	80	5,032.00	Y		
1.10) HY224 - SCUBA REGULATORS		2017	GLOBAL PCCI / IRVINE CA	C / CPAF	WASHINGTON, DC	Jan 2017	Jan 2017	20	1,050.00	Y		
1.10) HY224 - SCUBA REGULATORS		2018	Unknown / Unknown	C / TBD	WASHINGTON, DC	Apr 2018	Apr 2019	53	1,056.60	Y		
1.10) HY224 - SCUBA REGULATORS		2019	Unknown / Unknown	C / TBD	WASHINGTON, DC	Oct 2018	Oct 2019	69	1,060.00	Y		
1.11) HY225 - PRESSURE TEST CHAMBERS		2017	GLOBAL PCCI / IRVINE CA	C / CPAF	WASHINGTON, DC	Jan 2017	Jan 2017	10	12,500.00	Y		
1.11) HY225 - PRESSURE TEST CHAMBERS		2018	Unknown / Unknown	C / TBD	WASHINGTON, DC	Apr 2018	Apr 2019	10	12,700.00	Y		
1.13) HY233 - SURFACE SUPPLY AUGMENTED SCUBA SYSTEM ⁽²⁾		2018	TBD / TBD	C / TBD	WASHINGTON, DC	Apr 2018	Apr 2018	1	109,000.00	Y		
1.13) HY233 - SURFACE SUPPLY AUGMENTED SCUBA SYSTEM ⁽²⁾		2019	TBD / TBD	C / TBD	WASHINGTON, DC	Oct 2018	Oct 2019	4	108,860.00	Y		
2) NSW SERVICE-COMMON EQUIPMENT (N95)												
2.1) HY235 - NSW SERVICE COMMON SCUBA/SONAR KIT ⁽³⁾		2018	TBD / TBD	C / TBD	WASHINGTON, DC	Apr 2018	Apr 2018	17	100,176.47	Y		
2.1) HY235 - NSW SERVICE COMMON SCUBA/SONAR KIT ⁽³⁾		2019	TBD / TBD	C / TBD	WASHINGTON, DC	Oct 2018	Oct 2019	16	105,125.00	Y		
3) SALVAGE (N97)												
3.1) HY016 - DECK SYSTEMS ⁽⁴⁾		2017	GLOBAL PCCI / IRVINE CA	C / CPAF	WASHINGTON, DC	Mar 2017	Mar 2018	2	61,500.00	Y		
3.2) HY050 - SYNTHETIC LINES		2019	TBD / UNKNOWN	C / TBD	WASHINGTON, DC	Oct 2018	Oct 2019	2	198,000.00	Y		
3.3) HY062 - ROV SONAR SYSTEMS		2017	PHOENIX INTL / LARGO MD	C / CPAF	WASHINGTON, DC	Nov 2016	Nov 2017	1	1,761K	Y		
3.4) HY116 - PORTABLE SUBMERSIBLE PUMPS ⁽⁵⁾		2018	GLOBAL PCCI / IRVINE CA	C / TBD	WASHINGTON, DC	Apr 2018	Apr 2019	3	123,333.33	Y		

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Exhibit P-5a, Procurement History and Planning: PB 2019 Navy								Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 11			P-1 Line Item Number / Title: 1130 / Diving and Salvage Equipment					Aggregated Items: Diving and Salvage Equipment				
Item Number / Title [DODIC]	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
3.5) HY131 - ROV HANDLING SYSTEM		2018	TBD / TBD	C / TBD	WASHINGTON, DC	Apr 2018	Apr 2019	1	1,084K	Y		
3.7) HY145 - COFFERDAM SYSTEM ⁽⁶⁾		2017	GLOBAL PCCI / IRVINE CA	C / CPAF	WASHINGTON, DC	Jan 2017	Jan 2018	3	123,666.67	Y		
3.8) HY146 - PROPELLER REPAIR KIT ⁽⁷⁾		2017	GLOBAL PCCI / IRVINE CA	C / CPAF	WASHINGTON, DC	Feb 2017	Feb 2018	1	269,000.00	Y		
3.8) HY146 - PROPELLER REPAIR KIT ⁽⁷⁾		2018	TBD / TBD	C / TBD	WASHINGTON, DC	Apr 2018	Apr 2019	2	249,000.00	Y		
3.8) HY146 - PROPELLER REPAIR KIT ⁽⁷⁾		2019	TBD / TBD	C / TBD	WASHINGTON, DC	Oct 2018	Oct 2019	1	228,400.00	Y		
3.10) HY153 - TENSIMETERS		2018	GLOBAL PCCI / IRVINE CA	C / TBD	WASHINGTON, DC	Apr 2018	Apr 2019	4	16,250.00	Y		
3.10) HY153 - TENSIMETERS		2019	GLOBAL PCCI / IRVINE CA	C / TBD	WASHINGTON, DC	Oct 2018	Oct 2019	2	14,850.00	Y		
3.11) HY156 - SALVAGE VANS ⁽⁸⁾		2017	GLOBAL PCCI / IRVINE CA	C / CPAF	WASHINGTON, DC	Mar 2017	Feb 2018	1	207,000.00	Y		
3.11) HY156 - SALVAGE VANS ⁽⁸⁾		2018	Unknown / TBD	C / TBD	WASHINGTON, DC	Apr 2018	Mar 2019	1	211,000.00	Y		
3.13) HY169 - UWSH POWER TOOLS ⁽⁹⁾		2017	GLOBAL PCCI / IRVINE CA	C / CPAF	WASHINGTON, DC	Jan 2017	Jan 2018	2	120,000.00	Y		
3.14) HY184 - SALVAGE SUPPORT SYSTEMS ⁽¹⁰⁾		2018	Unknown / Unknown	C / TBD	WASHINGTON, DC	Apr 2018	Apr 2019	1	224,000.00	Y		
3.14) HY184 - SALVAGE SUPPORT SYSTEMS ⁽¹⁰⁾		2019	Unknown / Unknown	C / TBD	WASHINGTON, DC	Oct 2018	Oct 2019	1	215,100.00	Y		
3.15) HY186 - SMART TOW SYSTEMS ⁽¹¹⁾		2017	GLOBAL PCCI / IRVINE CA	C / CPAF	WASHINGTON, DC	Mar 2017	Mar 2018	1	165,000.00	Y		
3.15) HY186 - SMART TOW SYSTEMS ⁽¹¹⁾		2018	Unknown / TBD	C / TBD	WASHINGTON, DC	Apr 2018	Apr 2019	1	168,000.00	Y		
3.15) HY186 - SMART TOW SYSTEMS ⁽¹¹⁾		2019	Unknown / TBD	C / TBD	WASHINGTON, DC	Oct 2018	Oct 2019	1	153,900.00	Y		
3.17) HY195 - UNDERWATER RIGGING SUPPORT SYSTEM ⁽¹³⁾		2017	GLOBAL PCCI / IRVINE CA	C / CPAF	WASHINGTON, DC	Jan 2017	Jan 2018	2	201,500.00	Y		
3.18) HY196 - UWSH SUBMARINE SUPPORT SYSTEM ⁽¹⁴⁾		2017	GLOBAL PCCI / IRVINE CA	C / CPAF	WASHINGTON, DC	Jan 2017	Jan 2018	1	543,000.00	Y		
3.18) HY196 - UWSH SUBMARINE SUPPORT SYSTEM ⁽¹⁴⁾		2018	Unknown / TBD	C / TBD	WASHINGTON, DC	Apr 2018	Apr 2019	1	502,000.00	Y		
3.20) HY198 - UWSH SURFACE SHIP SUPPORT SYSTEMS ⁽¹⁶⁾		2017	GLOBAL PCCI / IRVINE CA	C / CPAF	WASHINGTON, DC	Jan 2017	Jan 2018	2	121,500.00	Y		

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Exhibit P-5a, Procurement History and Planning: PB 2019 Navy									Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 11			P-1 Line Item Number / Title: 1130 / Diving and Salvage Equipment						Aggregated Items: Diving and Salvage Equipment			
Item Number / Title [DODIC]	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
3.20) HY198 - UWSH SURFACE SHIP SUPPORT SYSTEMS ⁽¹⁶⁾		2018	Unknown / TBD	C / TBD	WASHINGTON, DC	Apr 2018	Apr 2019	3	125,000.00	Y		
3.20) HY198 - UWSH SURFACE SHIP SUPPORT SYSTEMS ⁽¹⁶⁾		2019	Unknown / TBD	C / TBD	WASHINGTON, DC	Oct 2018	Oct 2019	4	115,200.00	Y		
3.21) HY201 - JETTING PUMPS ⁽¹⁷⁾		2017	GLOBAL PCCI / IRVINE CA	C / CPAF	WASHINGTON, DC	Jan 2017	Jul 2018	3	214,000.00	Y		
3.21) HY201 - JETTING PUMPS ⁽¹⁷⁾		2018	Unknown / TBD	C / TBD	WASHINGTON, DC	Apr 2018	Apr 2019	2	240,000.00	Y		
3.21) HY201 - JETTING PUMPS ⁽¹⁷⁾		2019	Unknown / TBD	C / TBD	WASHINGTON, DC	Oct 2018	Oct 2019	2	219,600.00	Y		
3.22) HY203 - HYDRAULIC U/W TOOL KIT		2017	GLOBAL PCCI / IRVINE CA	C / CPAF	WASHINGTON, DC	Mar 2017	Mar 2018	1	67,000.00	Y		
3.22) HY203 - HYDRAULIC U/W TOOL KIT		2019	Unknown / TBD	C / TBD	WASHINGTON, DC	Oct 2018	Oct 2019	1	63,000.00	Y		
3.23) HY205 - LIGHTING KIT SYSTEM		2019	GLOBAL PCCI / IRVINE CA	C / TBD	WASHINGTON, DC	Oct 2018	Oct 2018	2	17,100.00	Y		
3.24) HY206 - KERRIE CABLE UNDERWATER CUTTING SYSTEM		2018	Unknown / Unknown	C / TBD	WASHINGTON, DC	Jun 2018	Jun 2018	6	18,500.00	Y		
3.24) HY206 - KERRIE CABLE UNDERWATER CUTTING SYSTEM		2019	Unknown / Unknown	C / TBD	WASHINGTON, DC	Oct 2018	Oct 2019	7	16,875.00	Y		
3.25) HY216 - SALVAGE/BDR MATERIAL KIT ⁽¹⁸⁾		2017	GLOBAL PCCI / IRVINE CA	C / FPAF	WASHINGTON, DC	Mar 2017	Mar 2018	3	51,000.00	Y		
3.25) HY216 - SALVAGE/BDR MATERIAL KIT ⁽¹⁸⁾		2018	Unknown / Unknown	C / TBD	WASHINGTON, DC	Apr 2018	Apr 2019	2	60,000.00	Y		
3.27) HY218 - SALVAGE LIFT BAGS (35 TONS) ⁽¹⁹⁾		2017	GLOBAL PCCI / IRVINE CA	C / CPAF	WASHINGTON, DC	Mar 2017	Mar 2018	2	15,000.00	Y		
3.28) HY219 - PORTABLE SALVAGE CRANE		2018	TBD / TBD	C / TBD	WASHINGTON, DC	Apr 2018	Apr 2019	1	216,000.00	Y		
3.28) HY219 - PORTABLE SALVAGE CRANE		2019	TBD / TBD	C / TBD	WASHINGTON, DC	Oct 2018	Oct 2019	1	197,100.00	Y		
3.30) HY223 - 3D SONAR		2019	TBD / TBD	C / TBD	WASHINGTON, DC	Oct 2018	Oct 2019	1	583,200.00	Y		
3.31) HY227 - COMPLEX AND/OR LARGE UWSH REPAIR COFFERDAM SUPPORT SYSTEMS		2018	TBD / TBD	C / TBD	WASHINGTON, DC	Apr 2018	Apr 2019	1	780,000.00	Y		

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Exhibit P-5a, Procurement History and Planning: PB 2019 Navy								Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 11			P-1 Line Item Number / Title: 1130 / Diving and Salvage Equipment					Aggregated Items: Diving and Salvage Equipment				
Item Number / Title [DODIC]	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
3.31) HY227 - COMPLEX AND/ OR LARGE UWSH REPAIR COFFERDAM SUPPORT SYSTEMS		2019	TBD / TBD	C / TBD	WASHINGTON, DC	Oct 2018	Oct 2019	1	713,700.00	Y		
3.32) HY228 - CLYDE WINCH UPGRADE MODIFICATIONS		2018	TBD / TBD	C / TBD	WASHINGTON, DC	Apr 2018	Apr 2019	2	114,000.00	Y		
3.32) HY228 - CLYDE WINCH UPGRADE MODIFICATIONS		2019	TBD / TBD	C / TBD	WASHINGTON, DC	Oct 2018	Oct 2019	6	104,850.00	Y		
3.33) HY229 - AC SOLAR CELL DEPLOYMENT KIT		2019	TBD / TBD	TBD	WASHINGTON, DC	Oct 2018	Oct 2019	1	63,000.00	Y		
3.34) HY230 - NEXGEN HYDRAULIC POWER UNIT, MOD 6B		2018	TBD / TBD	C / CPAF	WASHINGTON, DC	Apr 2018	Apr 2019	1	106,000.00	Y		
3.34) HY230 - NEXGEN HYDRAULIC POWER UNIT, MOD 6B		2019	TBD / TBD	C / TBD	WASHINGTON, DC	Oct 2018	Oct 2019	1	97,200.00	Y		
3.36) HY232 - DECK SYSTEMS HYDRAULIC POWER UNIT UPGRADE		2019	TBD / TBD	C / TBD	WASHINGTON, DC	Jun 2019	Jun 2020	3	25,200.00	Y		
3.39) HY239 - 600 CFM SALVAGE AIR COMPRESSOR		2019	TBD / TBD	C / TBD	WASHINGTON, DC	Apr 2019	Apr 2020	1	81,900.00	Y		
3.40) HY240 - SALVAGE PATCHING AND RIGGING VAN		2019	TBD / TBD	C / TBD	WASHINGTON, DC	Apr 2019	Apr 2020	2	75,600.00	Y		
3.41) HY241 - DEEP OCEAN SALVAGE SYSTEM		2019	TBD / TBD	C / TBD	WASHINGTON, DC	Oct 2018	Oct 2019	1	738,900.00	Y		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 12: Small Boats	P-1 Line Item Number / Title: 1210 / Standard Boats

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	536.862	59.033	64.094	49.771	19.060	68.831	45.191	44.062	45.042	45.921	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	536.862	59.033	64.094	49.771	19.060	68.831	45.191	44.062	45.042	45.921	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	536.862	59.033	64.094	49.771	19.060	68.831	45.191	44.062	45.042	45.921	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 2019 funding request was reduced by \$.049 million to reflect the Department of Navy's effort to support the Office of Management and Budget directed reforms for Efficiency and Effectiveness that include a lean, accountable, more efficient government.

Naval Sea Systems Command (NAVSEA) -- Boats are procured to fill allowances established by CNO and NAVSEA and to replace boats now in service which are beyond economical repair at shore activities and aboard ships. Total inventory objectives change based on Fleet requirements.

H0001 BASE OPERATING FORCES

Force Protection Boat (Small) - Light gasoline twin outboard engine powered (up to 150 HP each) aluminum boats from 7 to 8.2 meters (24 to 27 ft) in length used primarily for fleet force protection, maritime interdiction, law enforcement operations, at Naval activities and adjacent ports and waterways duties. Can operate in areas where the environment (sea states/climatology) does not present a significant challenge. Service life is 7 years.

CNIC Force Protection Boat (Small) - Gasoline twin outboard engine aluminum boats approximately 8.5 meters (27 ft) in length with a narrow beam to aid in transport. Used primarily for fleet security, force protection/anti-terrorism, maritime interdiction and law enforcement operations at Naval activities and adjacent ports and waterways. The boats are provided with shouldering capabilities and foundations suitable for weapons. The boats operate primarily at Naval activities in sheltered harbors and waterways. Service life is 7 years.

CNIC Force Protection Boat (Medium) - Gasoline outboard engine powered aluminum boats approximately 10 meters (33 ft) in length used primarily for fleet force protection, maritime interdiction, law enforcement operations at Naval activities and adjacent ports and waterways duties. Needed for operations in areas where the environment (sea states/climatology) is significant enough to necessitate the larger boat and resultant larger engines to meet the performance/operational requirements. Service life is 7 years.

CNIC Force Protection Boat (Large) - Gasoline twin outboard engine powered aluminum boats approximately 11 meters (36 ft.) in length with a wide beam used primarily for fleet force protection, maritime interdiction, law enforcement operations, at Naval activities and adjacent ports and waterways duties. Needed in areas where the environment (sea states/climatology) necessitates a larger boat for dependability. Service life is 7 years.

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 12: Small Boats		P-1 Line Item Number / Title: 1210 / Standard Boats
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		
CNIC Workboat (Medium) - Diesel inboard-engine powered steel boats up to approximately 11 meters (36 ft) in length used primarily for multi-purpose workboat applications at Naval activities and adjacent ports and waterways duties, such as towing and pusher boat capabilities, line handling, harbor cleaning, and security barrier tending. Habitability, maneuverability and bollard pull power are commensurate with operational requirements associated with barrier and moderately sized vessel assist (i.e., barges, boats, etc.). The Workboat (Medium) is capable of performing operations in areas where the operating environment (sea states/climatology) is not significant enough to necessitate the larger boat, but includes the capabilities necessary to meet operational requirements. Service life is 20 years. CNIC Workboat (Large) - Diesel inboard-engine powered steel boats over approximately 11 meters (36 ft) in length used primarily for multi-purpose workboat applications at Naval activities and adjacent ports and waterways. Duties include towing and pusher tugboat capabilities, diver support, ship's husbandry, cargo carrier, personnel ferry, harbor cleaning, firefighting and security barrier tending. Habitability, maneuverability and bollard pull power are commensurate with operational requirements associated with large sized vessel assist (i.e., ships, derricks, etc.). The Workboat (Large) is needed for operations in areas where the operating environment (including sea states/climatology) is significant enough to necessitate the larger boat and include the capabilities necessary to meet operational requirements. Service life is 25 years. CNIC Utility Boat Small - Gasoline outboard engine powered aluminum boats approximately 8 meters (26 feet) in length. Used for a variety of missions including search and rescue, craft maintenance, diver support, and transfer of personnel and light cargo. Service life is 10 years. H0002 AMPHIBIOUS ASSAULT SHIPS 11M (36ft) Rigid Inflatable Boat (RIB) - Carried as a ship's boat or assigned to a shore activity to perform a variety of operations including personnel and light cargo transfer, anchorage administration Anti-Terrorism/Force Protection (AT/FP) operations and swimmer defense, visit/boarding/search and maritime interdiction, Amphibious Assault Vehicle (AAV) safety boat and Advanced Amphibious Assault Vehicle (AAAV) assist boat. Service life is 12 years. H0003 EXPLOSIVE ORDNANCE DISPOSAL FORCES Explosive Ordnance Disposal (EOD) Support Craft (RIB) - Used for area search, MK 5 and MK 16 Underwater Breathing Apparatus (UBA)/Diving Training, Mammal Operations, Ordnance/mine recovery, parachute insertion support and Command and Control. Service life is 10 years. 11M (36ft) EOD RIB - The 11m RIBs are required to support the emergent establishment of an enduring MK 18 unmanned underwater vehicle family of systems capability for near term operational missions in the shallow water and very shallow water environments in the Fifth Fleet area of responsibility. Operational missions include Intelligence Preparation of the Operational Environment/Mine Countermeasure Missions. Service life is 7-10 years. H0004 NAVAL SPECIAL WARFARE NSW Short Range Support Craft - Used in support of combat swimmer-diver training evolutions and the Special Warfare Combatant Craft (SWCC) Basic Crewman Training curriculum. Service life is 10 years. NSW Long Range Support Craft - SEAL combat swimmer/SEAL Delivery Vehicle (SDV)/surface swimmer safety craft for offshore/open ocean training support. Provides transportation to/from training areas, dive supervisor/event officer-in-charge/corpsman safety support platform and injured diver/swimmer egress platform for Naval Special Warfare. Service life is 10 years. NSW RIB (formerly Enhanced Visit Board Search and Seizure) - Provide operational commander a capability to conduct VBSS and Maritime Interception Operations (MIO) from an Afloat Staging Base in conjunction with an overwatch craft and other friendly forces. Service life is 7 years. H0005 RIVERINE ACTIVITIES		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 12: Small Boats		P-1 Line Item Number / Title: 1210 / Standard Boats
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		
Patrol Boat (X) - The craft will support maritime security operation missions and tasks such as Harbor Approach Defense; High Value Unit Transit Escort Operations; Visit, Board, Search, and Seizure (VBSS) Operations and Overwatch; Critical Infrastructure Protection; Amphibious Operations Support; Riverine Operations; Mine Warfare Support; Embarked Forces Support (e.g., SOF, EOD, USCG LEDET); and, Humanitarian Assistance/Disaster Relief (HA/DR) Support. Twin diesel engine powered boat with a nominal length of 40ft used to patrol green water littoral zones such as coastal water approaches, bays, major rivers, ports, and harbors. Service life is 15 to 20 years. Riverine Multi-Mission Craft - Provides the Navy with, but not limited to, High Value Unit Escort, Maritime Infrastructure Protection; Coastal Riverine Security; Visit Board Search and Seizure (VBSS), VBSS Overwatch and/or Mine Warfare Support. Service life is 8 years. MK VI Patrol Boat - Naval Expeditionary Combat Command (NECC) Riverine Forces require a tactically sized, highly reliable, combatant craft capable of operating from land or maritime platforms. The mission of the MK VI is to provide the operational commander a capability to persistently patrol shallow littoral areas beyond sheltered harbors and bays, and into less sheltered open water out to the Departure Sea Area (DSA) for the purpose of force protection of friendly and coalition forces and critical infrastructure. Mission profiles may include: patrol of Maritime Pre-positioning Force (MPF) and Joint Logistics Over the Shore (JLOTS) anchorage and marshaling areas, offshore economic infrastructure Gulf Oil Platforms (GOPLATs), High-Value Asset (HVA) shipping escort, over watch of Maritime Interdiction Operations (MIO) / Vessel Board, Search and Seizure (VBSS) operations, Theater Security Cooperation (TSC), and Security Force Assistance (SFA). Service life is 7-10 years. H0006 SUPPORT FORCES 7M (24ft) Rigid Inflatable Boat (RIB) - Diesel powered, primarily used as ship's lifeboats, search and rescue boats, liberty boats, and for general transportation on auxiliaries, combatants, carriers, amphibious, and shore activities. Also used for Anti-Terrorism/Force Protection (AT/FP) and Maritime Interdiction Operation/Vessel Boarding Search and Seizure (MIO/VBSS) operations. Service life is 12 years. H0007 FLEET LOGISTICS SUPPORT 7M (24ft) Rigid Inflatable Boat (RIB) - Diesel powered, primarily used as ship's lifeboats, search and rescue boats, liberty boats, and for general transportation on auxiliaries, combatants, carriers, amphibious, and shore activities. Also used for Anti-Terrorism/Force Protection (AT/FP) and Maritime Interdiction Operation/Vessel Boarding Search and Seizure (MIO/VBSS) operations. Service life is 12 years. H0008 NAVAL COASTAL WARFARE Patrol Boat (small) - Light gasoline twin outboard engine powered (up to 150 HP each) aluminum boats from 7 to 8.2 meters (24 to 27 ft) in length used primarily for fleet force protection, maritime interdiction, law enforcement operations, at Naval activities and adjacent ports and waterways duties. Can operate in areas where the environment (sea states/climatology) does not present a significant challenge. Service life is 7 years. Patrol Boat (Large) - Twin diesel engine powered aluminum boats over 9 meters (30 ft) in length used primarily for fleet force protection, maritime interdiction, law enforcement operations, at Naval activities and adjacent ports and waterways duties. Needed in areas where the environment (sea states/climatology) necessitates a larger boat for dependability. Too heavy to meet the performance/operational requirements with outboard engines. Service life is 7 years. H0009 WARFARE INTEGRATION Dive Boat Replacement - Operations involving diving or the need to deploy support equipment at or near the water. Examples include dive operations focusing on underwater ships husbandry of Fleet assets, training, underwater survey and RDT&E, as well as, general ports and waterways operations, routine harbor maintenance and cleanup duties, and to assist in patrol, rescue, firefighting and picket operations. Aluminum hull from 50 to 60 ft, walkthrough cabin, seating for coxswain & navigator, bench seating for four passengers, bitts forward & aft, engine guard rail, dive door (stbd.), certified hoisting fittings & hoisting sling. Cabin light, sliding windows, wiper assembly, heater, Very High Frequency (VHF) radio w/hailer, spotlight, electric bilge pump, battery charger, spare parts, aluminum trailer w/pintle hitch. Service life: 15-20 years.		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 12: Small Boats		P-1 Line Item Number / Title: 1210 / Standard Boats
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		
H0010 POLLUTION CONTROL EQUIPMENT		
Oil boom Platform - 30' Boom Platform (BP) Boat used for Oil Spill Response operations, working in conjunction with 25ft UBs and Rapid Response Skimmers (RRS). Typical mission requires UB and BP to sprint to the oil spill location ahead of the RRS. After spill assessment, 24" response boom (aboard BP) is tied off to UB, which is used to payout/deploy boom to surround spill while the RRS recovers the oil. BP crew delivers and unravels the boom during oil skimming operations. Typical mission duration is 3-8 hours. Service life is 10 years.		
Utility Boats - 25' Utility Boats (UB) used for Oil Spill Response operations, working in conjunction with Boom Platforms (BPs) and Rapid Response Skimmers (RRS). Typical mission requires UB and BP to sprint to the oil spill location ahead of the RRS. After spill assessment, 24" response boom (aboard BP) is tied off to UB, which is used to payout/deploy boom to surround spill while the RRS recovers the oil. UB crew tends boom during oil skimming operations, accessing boom over low gunwales or via dive door on UB. Typical mission duration is 3-8 hours. Service life is 10 years.		
Rapid Response Skimmers - Rapid Response Skimmers (RRS) used for Oil Spill Response operations, working in conjunction with Boom Platforms (BPs) and Utility Boats (UBs). Typical mission requires UB and BP to sprint to the oil spill location ahead of the RRS. After spill assessment, 24" response boom (aboard BP) is tied off to UB, which is used to payout/deploy boom to surround spill while the RRS recovers the oil. The RRS "skims" the oil off of the top of the water and holds it in an onboard storage container for proper disposal and processing. Typical mission duration is 3-24 hours. Service life is 10 years.		
H0830 PRODUCTION ENGINEERING		
Production Engineering funds are used for engineering and technical support of boat and combatant craft acquisition and the development of integrated logistics support documentation to include technical data packages, provisioning, technical manuals, preventative maintenance documents and naval training systems plans. Technical support shall include acceptance trials, test and evaluation, inspections of production facilities, methods and quality assurance procedures and processes during and after construction. Additionally, official Navy boat inventory management, pre-delivery and post-delivery inspections and preparing documentation regarding boat and combatant craft procurement contract closeout and may be accomplished.		
Boats will not be safe or suitable to perform Navy boat and combatant craft missions if acquisition engineering technical support and integrated logistics support are not funded and completed. Boats will not be properly accounted for in accordance with OPNAV 4780.6E if boat inventory management is not provided.		
H0CA5 DIVE BOATS		
Operations involving diving or the need to deploy support equipment at or near the water. Examples include dive operations focusing on underwater ships husbandry of Fleet assets, training, underwater survey and RDT&E, as well as, general ports and waterways operations, routine harbor maintenance and cleanup duties, and to assist in patrol, rescue, firefighting and picket operations. Aluminum hull from 50 to 60 ft, walkthrough cabin, seating for coxswain & navigator, bench seating for four passengers, bitts forward & aft, engine guard rail, dive door (stbd), certified hoisting fittings & hoisting sling. Cabin light, sliding windows, wiper assembly, heater, VHF radio w/hailer, spotlight, electric bilge pump, battery charger, spare parts, aluminum trailer w/pintle hitch. Service life: 15-20 years.		
H0CA6 RANGE SUPPORT CRAFT		
Workboat type vessel to serve US Navy Weapons Systems Training and Validation, assisting fleet operations conducting acoustical, thermal and cross-section measurements and testing. Hulls to be steel or aluminum with aluminum superstructure and corrosion resistant systems, components and hardware to operate in industrial conditions with minimal maintenance. Sea kindliness underway and while loitering for extended periods are among the primary operational requirements. A large open workspace on the after deck with a retrieval ramp providing access to the water and appropriate weapons handling machinery. Weapons systems equipment to be handled includes missiles, torpedoes, surface and air launched Remotely Operated Vehicles (ROVs) and targets. Minimal freeboard height aft is necessary for crew safety while accessing and operating the weapons retrieval mechanism without compromising stability. Habitability requirements include berthing, galley, mess, lounge, head(s), generator set(s), HVAC system and defrosters. The boat must be able to accommodate extreme loading conditions (i.e., from a full weapons load topside to light load). The boat must be as stable and as wide as possible to provide the inherent stability characteristics necessary to perform the operations and necessary to provide ergonomics for the crew and passengers. Requirements include communications, navigation and other electronics systems necessary to support the sophisticated training, validation and recording of specialized measurements to support a wide variety of operations. A Commercial Off The Shelf (COTS) boat built to recognize commercial standards can accomplish specific operational requirements for the mission. Service Life is 25 years.		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 12: Small Boats		P-1 Line Item Number / Title: 1210 / Standard Boats
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		
H0CAB FORCE PROTECTION BOAT (SMALL)		
Light gasoline twin outboard engine powered (up to 150 HP each) aluminum boats from 7 to 8.2 meters (24 to 27 ft) in length used primarily for fleet force protection, maritime interdiction, law enforcement operations, at Naval activities and adjacent ports and waterways duties. Can operate in areas where the environment (sea states/climatology) does not present a significant challenge. Service life is 7 years.		
H0G86 OCO SUPPLEMENTAL		
Current existing systems require replacements for boats due to excessive wear and tear. The boats are being maintained; however, they are not designed for the operational tempo (OPTEMPO) and harsh operating conditions in which they will be employed. The Force Protection Coastal (FPC) boats will provide capability called for in Visit, Board, Search and Seizure (VBSS) overwatch Urgent Operational Needs Statement (UONS) that cannot be met with existing boats. The Riverine Patrol boats, 7m EOD RIBS, and Force Protection Large are for boats already in theater.		
Coastal Riverine Force (CRF) Patrol Boat (X) - The craft will support maritime security operation missions and tasks such as Harbor Approach Defense; High Value Unit Transit Escort Operations; Visit, Board, Search, and Seizure (VBSS) Operations and Overwatch; Critical Infrastructure Protection; Amphibious Operations Support; Riverine Operations; Mine Warfare Support; Embarked Forces Support (e.g., SOF, EOD, USCG LEDET); and, Humanitarian Assistance/Disaster Relief (HA/DR) Support. Twin diesel engine powered boat with a nominal length of 40ft used to patrol green water littoral zones such as coastal water approaches, bays, major rivers, ports, and harbors. Service life is 15 to 20 years. This begins the reset of thirty (30) over age and deteriorating patrol boats continuously deployed to CENTCOM in support of OFS-T. The craft are needed to maintain operational capability and readiness to support force protection and ISR missions in CENTCOM for OFS-T.		
Rigid Inflatable Boats (RIB) ISO Global Mine Warfare (MIW) Operations - FY19 OCO funding to support the purchase of (2) 8.5M Rigid Hull Inflatable Boats (RHIBs) to replace the Combat Rubber Rating Crafts (CRRCs) currently being utilized for global Unmanned Underwater Vehicle (UUV) inshore surveys. The larger RHIBs are required due to the CRRCs not being designed for offshore use thus unsafe/unreliable in offshore maritime conditions, and severely limit maneuverability through most sea-states which is unsuitable for the majority of UUV surveys. RHIBs are designed for offshore UUV survey requests. The RHIBs will greatly improve the ability to provide mission critical information aimed at protecting the Navy from underwater threats and support the increased naval demand in offshore operations. The project is in Geographic area for MIW operations in support of a USCENTCOM requirement ("SPARTAN SHIELD"/FTN # 1190C066396		
SSPBV Blocking Vessels		
Blocking Vessels - 250' Off Shore Vessels (OSVs) also referred to as Blocking Vessels (BVs) operating at each Strategic Weapons Facility (Bangor, Washington and Kings Bay, Georgia). The Blocking Vessels are a key security component in the transit of SSBNs to and from the dive point. Service Life is 25 years.		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy								Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 12: Small Boats						P-1 Line Item Number / Title: 1210 / Standard Boats				
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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	Standard Boats	P-5a			- / 536.862	- / 59.033	- / 64.094	- / 49.771	- / 19.060	- / 68.831
P-40	Total Gross/Weapon System Cost				- / 536.862	- / 59.033	- / 64.094	- / 49.771	- / 19.060	- / 68.831
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										
Justification: Funds baseline programs to provide boats established by CNO and NAVSEA. OCO: Coastal Riverine Force (CRF) Patrol Boat (X) - (FY 2019 OCO: \$18.360M) The craft will support maritime security operation missions and tasks such as Harbor Approach Defense; High Value Unit Transit Escort Operations; Visit, Board, Search, and Seizure (VBSS) Operations and Overwatch; Critical Infrastructure Protection; Amphibious Operations Support; Riverine Operations; Mine Warfare Support; Embarked Forces Support (e.g., SOF, EOD, USCG LEDET); and, Humanitarian Assistance/Disaster Relief (HA/DR) Support. Twin diesel engine powered boat with a nominal length of 40ft used to patrol green water littoral zones such as coastal water approaches, bays, major rivers, ports, and harbors. Service life is 15 to 20 years. Six (6) CRF PB units are being requested in FY 2019 OCO for \$18.360M. This begins the reset of thirty (30) over age and deteriorating patrol boats continuously deployed to CENTCOM in support of OFS-T. The craft are needed to maintain operational capability and readiness to support force protection and ISR missions in CENTCOM for OFS-T. Rigid Inflatable Boats (RIB) ISO Global Mine Warfare (MIW) Operations - (\$700K) FY19 OCO funding to support the purchase of (2) 8.5M Rigid Hull Inflatable Boats (RHIBs) to replace the Combat Rubber Rating Crafts (CRRCs) currently being utilized for global Unmanned Underwater Vehicle (UUV) inshore surveys. The larger RHIBs are required due to the CRRCs not being designed for offshore use thus unsafe/unreliable in offshore maritime conditions, and severely limit maneuverability through most sea-states which is unsuitable for the majority of UUV surveys. RHIBs are designed for offshore UUV survey requests. The RHIBs will greatly improve the ability to provide mission critical information aimed at protecting the Navy from underwater threats and support the increased naval demand in offshore operations. The project is in Geographic area for MIW operations in support of a USCENTCOM requirement ("SPARTAN SHIELD"/FTN # 1190C066396										

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 12							P-1 Line Item Number / Title: 1210 / Standard Boats								Aggregated Items Title: Standard Boats					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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) H0001 - Base Operating Forces																				
1.1) Force Protection Small	A		3,387K	3	10.161	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.2) CNIC Force Protection Small	A		382,090.91	11	4.203	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.3) CNIC Force Protection Medium (1)(t)	A		523,205.88	68	35.578	467,000.00	9	4.203	475,625.00	8	3.805	484,000.00	9	4.356	-	-	-	484,000.00	9	4.356
1.4) CNIC Force Protection Large	A		11,379K	3	34.136	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.5) CNIC Workboat Medium(t)	A		1,029K	16	16.462	921,000.00	3	2.763	938,000.00	3	2.814	954,333.33	3	2.863	-	-	-	954,333.33	3	2.863
1.6) CNIC Workboat Large(t)	A		1,529K	3	4.587	1,651K	3	4.953	1,681K	3	5.043	1,707K	3	5.121	-	-	-	1,707K	3	5.121
Subtotal: 1) H0001 - Base Operating Forces			-	-	105.127	-	-	11.919	-	-	11.662	-	-	12.340	-	-	-	-	-	12.340
2) H0002 - Amphibious Assault Ships																				
2.1) 11M (36FT) Rigid Inflatable Boat (RIB)	A		956,277.78	18	17.213	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 2) H0002 - Amphibious Assault Ships			-	-	17.213	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3) H0003 - Explosive Ordnance Forces																				
3.1) EOD Support Craft (RIB) (2)(t)	A		403,647.06	34	13.724	271,000.00	16	4.336	275,666.67	5	1.378	280,800.00	10	2.808	-	-	-	280,800.00	10	2.808
3.2) 11M EOD RIB(t)	A		1,800K	2	3.600	-	-	-	748,166.67	10	7.482	761,666.67	6	4.570	-	-	-	761,666.67	6	4.570
Subtotal: 3) H0003 - Explosive Ordnance Forces			-	-	17.324	-	-	4.336	-	-	8.860	-	-	7.378	-	-	-	-	-	7.378
4) H0004 - Naval Special Warfare																				
4.1) NSW Long Range Support Craft (3)(t)	A		362,833.33	30	10.885	335,000.00	2	0.670	341,000.00	4	1.364	347,166.67	6	2.083	-	-	-	347,166.67	6	2.083
4.2) NSW Short Range Support Craft (4)(t)	A		761,100.00	10	7.611	333,000.00	4	1.332	338,875.00	5	1.694	345,111.11	9	3.106	-	-	-	345,111.11	9	3.106
4.3) NSW RIB(t)	A		994,142.86	7	6.959	1,032K	3	3.096	1,051K	2	2.102	1,070K	2	2.139	-	-	-	1,070K	2	2.139
Subtotal: 4) H0004 - Naval Special Warfare			-	-	25.455	-	-	5.098	-	-	5.160	-	-	7.328	-	-	-	-	-	7.328
5) H0005 - Riverine Activities																				
5.1) Patrol Boat (X) (5)(t)	A		-	-	-	2,745K	10	27.450	2,794K	3	8.382	2,798K	4	11.192	-	-	-	2,798K	4	11.192

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy																Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 12								P-1 Line Item Number / Title: 1210 / Standard Boats								Aggregated Items Title: Standard Boats				
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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)
5.2) Patrol Boat (X) Spares/Design rights	A		-	-	-	-	-	-	-	-	1.100	-	-	-	-	-	-	-	-	-
5.3) Riverine Multi-Mission Craft	A		4,085K	11	44.936	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.4) MK VI Patrol Boat	A		8,217K	3	24.651	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 5) H0005 - Riverine Activities			-	-	69.587	-	-	27.450	-	-	9.482	-	-	11.192	-	-	-	-	-	11.192
6) H0006 - Support Forces																				
6.1) 7M (24FT) Rigid Inflatable Boat (RIB) ^(†)	A		298,804.35	92	27.490	199,000.00	14	2.786	204,000.00	14	2.856	208,000.00	13	2.704	-	-	-	208,000.00	13	2.704
Subtotal: 6) H0006 - Support Forces			-	-	27.490	-	-	2.786	-	-	2.856	-	-	2.704	-	-	-	-	-	2.704
7) H0007 - Fleet Logistics Support																				
7.1) 7M (24FT) Rigid Inflatable Boat (RIB) ^(†)	A		355,866.67	15	5.338	199,000.00	3	0.597	204,000.00	3	0.612	208,000.00	3	0.624	-	-	-	208,000.00	3	0.624
Subtotal: 7) H0007 - Fleet Logistics Support			-	-	5.338	-	-	0.597	-	-	0.612	-	-	0.624	-	-	-	-	-	0.624
8) H0008 - Naval Coastal Warfare																				
8.1) Reserve Patrol Boat Small	A		-	-	0.681	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.2) Reserve Patrol Boat Large	A		1,227K	3	3.680	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 8) H0008 - Naval Coastal Warfare			-	-	4.361	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9) H0009 - Warfare Integration																				
9.1) Dive Boat Replacement ^(†)	A		1,875K	5	9.373	1,962K	2	3.923	1,997K	2	3.994	2,037K	2	4.074	-	-	-	2,037K	2	4.074
Subtotal: 9) H0009 - Warfare Integration			-	-	9.373	-	-	3.923	-	-	3.994	-	-	4.074	-	-	-	-	-	4.074
10) H0010 - Pollution Control Equipment																				
10.1) Oilboom Platform ^(†)	A		184,333.33	3	0.553	190,000.00	2	0.380	193,000.00	3	0.579	197,000.00	4	0.788	-	-	-	197,000.00	4	0.788
10.2) Utility Boats ^(†)	A		131,000.00	10	1.310	134,000.00	4	0.536	140,000.00	6	0.840	143,000.00	5	0.715	-	-	-	143,000.00	5	0.715
10.3) Rapid Response Skimmer ^(†)	A		385,647.06	17	6.556	401,000.00	3	1.203	408,333.33	3	1.225	416,000.00	4	1.664	-	-	-	416,000.00	4	1.664
10.4) OSR OB Engine ^(†)	A		10,000.00	2	0.020	10,000.00	2	0.020	10,000.00	3	0.030	10,333.33	3	0.031	-	-	-	10,333.33	3	0.031
Subtotal: 10) H0010 - Pollution Control Equipment			-	-	8.439	-	-	2.139	-	-	2.674	-	-	3.198	-	-	-	-	-	3.198
11) H0830 - Production Engineering																				
11.1) Production Engineering	A		-	-	8.178	-	-	0.400	-	-	0.402	-	-	0.547	-	-	-	-	-	0.547

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 12									P-1 Line Item Number / Title: 1210 / Standard Boats						Aggregated Items Title: Standard Boats					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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)
11.2) Production Engineering (Naval Coastal Warfare)	A		-	-	0.391	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 11) H0830 - Production Engineering			-	-	8.569	-	-	0.400	-	-	0.402	-	-	0.547	-	-	-	-	-	0.547
12) H0900 - Consulting Services																				
12.1) Consulting Services	A		-	-	6.192	-	-	0.385	-	-	0.392	-	-	0.386	-	-	-	-	-	0.386
12.2) Consulting Services (Naval Coastal Warfare)	A		-	-	0.289	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 12) H0900 - Consulting Services			-	-	6.481	-	-	0.385	-	-	0.392	-	-	0.386	-	-	-	-	-	0.386
13) H0CA5 - Dive Boats																				
13.1) Dive Boats	A		2,259K	3	6.777	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 13) H0CA5 - Dive Boats			-	-	6.777	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14) H0CA6 - Range Supprt Craft																				
14.1) Range Support Craft	A		18,362K	2	36.723	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 14) H0CA6 - Range Supprt Craft			-	-	36.723	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15) H0CAB - Force Protection Boat (Small)																				
15.1) Force Protection Boat (Small)	A		-	-	2.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15.2) Small Escort Vessels (33')	A		-	-	9.979	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 15) H0CAB - Force Protection Boat (Small)			-	-	11.979	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16) H0G86 - OCO																				
16.1) OCO - Patrol Boat (Large) (Reserve)	A		651,000.00	2	1.302	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16.2) OCO - RIBS	A		500,000.00	2	1.000	-	-	-	-	-	-	-	-	0.000	350,000.00	2	0.700	350,000.00	2	0.700
16.3) OCO - 7M EOD RIBs (Reserve)	A		234,000.00	6	1.404	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16.4) OCO - Force Protection - Coastal (Reserve)	A		4,000K	5	20.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16.5) Coastal Riverine Force (CRF) - Patrol Boat (X) ^{(6)(t)}	A		-	-	-	-	-	-	2,794K	6	16.764	-	-	0.000	2,798K	6	16.788	2,798K	6	16.788
16.6) CRF PB(X) Production Support-	A		-	-	-	-	-	-	-	-	1.236	-	-	0.000	-	-	1.572	-	-	1.572

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 12						P-1 Line Item Number / Title: 1210 / Standard Boats						Aggregated Items Title: Standard Boats								
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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)
Logistics-Inventory Mgmt-GFE-Spares ⁽⁷⁾																				
Subtotal: 16) H0G86 - OCO			-	-	23.706	-	-	-	-	-	18.000	-	-	0.000	-	-	19.060	-	-	19.060
17) SSPBV																				
17.1) Blocking Vessels	A		38,230K	4	152.920	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 17) SSPBV			-	-	152.920	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total			-	-	536.862	-	-	59.033	-	-	64.094	-	-	49.771	-	-	19.060	-	-	68.831
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 increase in quantity is to replace the backlog of craft that are beyond economical repair and are past their established service life.																				
⁽²⁾ The increase in quantity is to replace the backlog of craft that are beyond economical repair and are past their established service life.																				
⁽³⁾ Increase reflects service-common Table Of Allowance requirements supporting approved End Strength Growth in order to meet Geographic Combatant Commanders (GCC) demands to support existing counter-terrorist, counter violent extremist organization, and Building Partner Capacity missions and operations. Disaggregated nature of current operations has smaller SEAL elements deployed across the GCCs conducting combat or combat advise operations in austere environments with little-to-no established DoD infrastructure. This materiel supports NSW core mission requirements and is essential to the readiness and battlefield effectiveness of NSW in winning the current fight against ISIS and other extremist elements.																				
⁽⁴⁾ Increase reflects service-common Table Of Allowance requirements supporting approved End Strength Growth in order to meet Geographic Combatant Commanders (GCC) demands to support existing counter-terrorist, counter violent extremist organization, and Building Partner Capacity missions and operations. Disaggregated nature of current operations has smaller SEAL elements deployed across the GCCs conducting combat or combat advise operations in austere environments with little-to-no established DoD infrastructure. This materiel supports NSW core mission requirements and is essential to the readiness and battlefield effectiveness of NSW in winning the current fight against ISIS and other extremist elements.																				
⁽⁵⁾ The increase in quantity is to replace the backlog of craft that are beyond economical repair and are past their established service life.																				
⁽⁶⁾ The OCO boats being procured (Coastal Riverine Force (CRF) - Patrol Boat (X)) is the same boat type as Patrol Boat (X) under H0005, 5.1.																				
⁽⁷⁾ Funding is for Production Engineering (Acquisition/ Integrated Logistics Support (ILS)), Boat Inventory Management (BIM), GFE and spares in support of the PB(X).																				

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Exhibit P-5a, Procurement History and Planning: PB 2019 Navy									Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 12				P-1 Line Item Number / Title: 1210 / Standard Boats					Aggregated Items: Standard Boats			
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) H0001 - Base Operating Forces												
1.3) CNIC Force Protection Medium (1)		2017	Gravois Aluminum Boats / Jeanerette, LA	C / IDIQ	NAVSEA	Mar 2017	Aug 2017	9	467,000.00	N		
1.3) CNIC Force Protection Medium (1)		2018	TBD / TBD	C / IDIQ	NAVSEA	Jun 2018	Jan 2019	8	475,625.00	N		
1.3) CNIC Force Protection Medium (1)		2019	TBD / TBD	C / IDIQ	NAVSEA	Jul 2019	Feb 2020	9	484,000.00	N		
1.5) CNIC Workboat Medium		2017	Modutech / Tacoma, WA	C / IDIQ	NAVSEA	Mar 2017	Apr 2018	3	921,000.00	N		
1.5) CNIC Workboat Medium		2018	TBD / TBD	C / IDIQ	NAVSEA	Jun 2018	Dec 2018	3	938,000.00	N		
1.5) CNIC Workboat Medium		2019	TBD / TBD	C / IDIQ	NAVSEA	Jun 2019	Dec 2019	3	954,333.33	N		
1.6) CNIC Workboat Large		2017	Snow & Company / Seattle, WA	C / IDIQ	NAVSEA	Sep 2017	Oct 2018	3	1,651K	N		
1.6) CNIC Workboat Large		2018	TBD / TBD	C / IDIQ	NAVSEA	Jun 2018	Sep 2019	3	1,681K	N		
1.6) CNIC Workboat Large		2019	TBD / TBD	C / IDIQ	NAVSEA	Jun 2019	Sep 2020	3	1,707K	N		
3) H0003 - Explosive Ordnance Forces												
3.1) EOD Support Craft (RIB) ⁽²⁾		2017	USMI / Gulport, MS	C / IDIQ	NAVSEA	Aug 2017	Aug 2018	16	271,000.00	N		
3.1) EOD Support Craft (RIB) ⁽²⁾		2018	TBD / TBD	C / IDIQ	NAVSEA	Jun 2018	Dec 2018	5	275,666.67	N		
3.1) EOD Support Craft (RIB) ⁽²⁾		2019	TBD / TBD	C / IDIQ	NAVSEA	May 2019	Nov 2019	10	280,800.00	N		
3.2) 11M EOD RIB		2018	TBD / TBD	C / IDIQ	NAVSEA	Jul 2018	Jul 2018	10	748,166.67	N		
3.2) 11M EOD RIB		2019	TBD / TBD	C / IDIQ	NAVSEA	Jun 2019	Dec 2019	6	761,666.67	N		
4) H0004 - Naval Special Warfare												
4.1) NSW Long Range Support Craft ⁽³⁾		2017	Silverships / Theodore, AL	C / IDIQ	NAVSEA	Dec 2016	Aug 2017	2	335,000.00	N		
4.1) NSW Long Range Support Craft ⁽³⁾		2018	TBD / TBD	C / IDIQ	NAVSEA	Jun 2018	Dec 2018	4	341,000.00	N		
4.1) NSW Long Range Support Craft ⁽³⁾		2019	TBD / TBD	C / IDIQ	NAVSEA	Jun 2019	Dec 2019	6	347,166.67	N		
4.2) NSW Short Range Support Craft ⁽⁴⁾		2017	Workskiff / Woolley, WA	C / IDIQ	NAVSEA	Dec 2016	Jul 2017	4	333,000.00	N		
4.2) NSW Short Range Support Craft ⁽⁴⁾		2018	TBD / TBD	C / IDIQ	NAVSEA	Jun 2018	Jan 2019	5	338,875.00	N		
4.2) NSW Short Range Support Craft ⁽⁴⁾		2019	TBD / TBD	C / IDIQ	NAVSEA	Jun 2019	Jan 2020	9	345,111.11	N		
4.3) NSW RIB		2017	USMI / Gulport, MS	C / IDIQ	NAVSEA	Nov 2016	Dec 2017	3	1,032K	N		
4.3) NSW RIB		2018	TBD / TBD	C / IDIQ	NAVSEA	Jun 2018	Dec 2018	2	1,051K	N		

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Exhibit P-5a, Procurement History and Planning: PB 2019 Navy								Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 12			P-1 Line Item Number / Title: 1210 / Standard Boats					Aggregated Items: Standard Boats				
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
4.3) NSW RIB		2019	TBD / TBD	C / IDIQ	NAVSEA	Jun 2019	Dec 2019	2	1,070K	N		
5) H0005 - Riverine Activities												
5.1) Patrol Boat (X) ⁽⁵⁾		2017	Gravois Aluminum Boats / Jeanerette, LA	C / IDIQ	NAVSEA	Sep 2017	Oct 2018	10	2,745K	N		
5.1) Patrol Boat (X) ⁽⁵⁾		2018	TBD / TBD	C / IDIQ	NAVSEA	Jun 2018	May 2019	3	2,794K	N		
5.1) Patrol Boat (X) ⁽⁵⁾		2019	TBD / TBD	C / IDIQ	NAVSEA	Jun 2019	May 2020	4	2,798K	N		
6) H0006 - Support Forces												
6.1) 7M (24FT) Rigid Inflatable Boat (RIB)		2017	Willard Marine / Anaheim, CA	C / FFP	NAVSEA	Feb 2017	Sep 2017	14	199,000.00	N		
6.1) 7M (24FT) Rigid Inflatable Boat (RIB)		2018	Willard Marine / Anaheim, CA	C / FFP	NAVSEA	Oct 2017	May 2018	14	204,000.00	N		
6.1) 7M (24FT) Rigid Inflatable Boat (RIB)		2019	TBD / TBD	C / FFP	NAVSEA	May 2019	Dec 2019	13	208,000.00	N		
7) H0007 - Fleet Logistics Support												
7.1) 7M (24FT) Rigid Inflatable Boat (RIB)		2017	Willard Marine / Anaheim, CA	C / FFP	NAVSEA	Feb 2017	Sep 2017	3	199,000.00	N		
7.1) 7M (24FT) Rigid Inflatable Boat (RIB)		2018	Willard Marine / Anaheim, CA	C / FFP	NAVSEA	Oct 2017	May 2018	3	204,000.00	N		
7.1) 7M (24FT) Rigid Inflatable Boat (RIB)		2019	TBD / TBD	C / FFP	NAVSEA	May 2019	Dec 2019	3	208,000.00	N		
9) H0009 - Warfare Integration												
9.1) Dive Boat Replacement		2017	Marine Group / Chula Vista, CA	C / IDIQ	NAVSEA	Jan 2017	Jan 2018	2	1,962K	N		
9.1) Dive Boat Replacement		2018	TBD / TBD	C / IDIQ	NAVSEA	May 2018	Dec 2018	2	1,997K	N		
9.1) Dive Boat Replacement		2019	TBD / TBD	C / IDIQ	NAVSEA	May 2019	Dec 2019	2	2,037K	N		
10) H0010 - Pollution Control Equipment												
10.1) Oilboom Platform		2017	Metal Craft Marine, Inc. / Cape Vincent NY	C / IDIQ	NAVSEA	Mar 2017	Jan 2018	2	190,000.00	N		
10.1) Oilboom Platform		2018	TBD / TBD	C / IDIQ	NAVSEA	Jun 2018	Dec 2018	3	193,000.00	N		
10.1) Oilboom Platform		2019	TBD / TBD	C / IDIQ	NAVSEA	May 2019	Nov 2019	4	197,000.00	N		
10.2) Utility Boats		2017	Metal Craft Marine, Inc. / Cape Vincent NY	C / IDIQ	NAVSEA	Mar 2017	Feb 2018	4	134,000.00	N		
10.2) Utility Boats		2018	TBD / TBD	C / IDIQ	NAVSEA	Jun 2018	Nov 2018	6	140,000.00	N		
10.2) Utility Boats		2019	TBD / TBD	C / IDIQ	NAVSEA	May 2019	Oct 2019	5	143,000.00	N		
10.3) Rapid Response Skimmer		2017	Kvichak Marine / Seattle, WA	C / IDIQ	NAVSEA	May 2017	Mar 2018	3	401,000.00	N		
10.3) Rapid Response Skimmer		2018	TBD / TBD	C / IDIQ	NAVSEA	May 2018	Nov 2018	3	408,333.33	N		
10.3) Rapid Response Skimmer		2019	TBD / TBD	C / IDIQ	NAVSEA	May 2019	Nov 2019	4	416,000.00	N		

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Exhibit P-5a, Procurement History and Planning: PB 2019 Navy								Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 12			P-1 Line Item Number / Title: 1210 / Standard Boats					Aggregated Items: Standard Boats				
Item Number / Title [DODIC]	OCO	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
10.4) OSR OB Engine		2017	DLA / Philadelphia, PA	MIPR	NAVSEA	Jun 2017	Nov 2017	2	10,000.00	N		
10.4) OSR OB Engine		2018	TBD / TBD	MIPR	NAVSEA	Jun 2018	Nov 2018	3	10,000.00	N		
10.4) OSR OB Engine		2019	TBD / TBD	MIPR	NAVSEA	Jun 2019	Nov 2019	3	10,333.33	N		
16) H0G86 - OCO												
16.5) Coastal Riverine Force (CRF) - Patrol Boat (X) ⁽⁶⁾	✓	2018	TBD / TBD	C / IDIQ	NAVSEA	Jun 2018	May 2019	6	2,794K	N		
16.5) Coastal Riverine Force (CRF) - Patrol Boat (X) ⁽⁶⁾	✓	2019	TBD / TBD	C / IDIQ	NAVSEA	Jun 2019	May 2020	6	2,798K	N		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 14: Production Facilities Equipment							P-1 Line Item Number / Title: 1445 / Operating Forces IPE					
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	571.753	71.921	191.541	225.181	0.000	225.181	214.126	203.452	221.235	238.971	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	571.753	71.921	191.541	225.181	0.000	225.181	214.126	203.452	221.235	238.971	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	571.753	71.921	191.541	225.181	0.000	225.181	214.126	203.452	221.235	238.971	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 2019 funding request was reduced by \$1.452 million to reflect the Department of Navy's effort to support the Office of Management and Budget directed reforms for Efficiency and Effectiveness that include a lean, accountable, more efficient government. The Operating Forces IPE budget provides funding for capitalized personal property procurements for the Naval Shipyards and Fleet I-level maintenance activities. These procurements provide new and efficiency-enabling equipment required to support submarine, CVN, and surface ship maintenance, eliminating reliance on significantly aged and obsolete equipment. Improved maintenance capabilities at the activities supported by the Capital Investment Program and Ship Maintenance Investment Program are integral to the Nuclear Enterprise. Modernizing equipment infrastructure improves maintenance activity productivity and throughput, eliminates workaround and mitigation costs to the Fleet, contributes to decreasing CVN, surface ship, and submarine availability cost and schedule, and improves operational availability. Additional funding is also budgeted to support new mission requirements, including VIRGINIA Class introduction at NNSY, concurrent VIRGINIA Class availabilities at PNSY and PHNSY, and LOS ANGELES Class service life extension refueling overhauls at PNSY, as well as recapitalization of significantly aged Industrial Plant Equipment (IPE), weight handling equipment, and nuclear support equipment infrastructure. This budget also funds procurement and technical refresh upgrades of all Integrated Condition Assessment System (ICAS) hardware and software aboard Surface Fleet hulls and the Navy Maritime Maintenance Enterprise Solution (NMMES). NMMES is a strategic investment that has standardized NAVSEA and Fleet ship maintenance functions ashore, controlling and managing all aspects of ship maintenance at the Naval Shipyards, Regional Maintenance Centers (RMCs), and Ship Repair Facilities. [P40A / KN200: NAVY MARITIME MAINTENANCE ENTERPRISE SOLUTION SUSTAINMENT]: This funding supports the Navy Maritime Maintenance Enterprise Solution (NMMES) Initiative, a strategic investment that has standardized NAVSEA and Fleet ship maintenance functions ashore, controlling and managing all aspects of ship maintenance at the Naval Shipyards, Regional Maintenance Centers (RMCs), and Ship Repair Facilities. NMMES manages finance, supply, personnel, time & attendance, repair work processes & planning, scheduling and execution, shop work flow, configuration management, environmental health & safety, quality assurance, up-line management reporting and other functions. NMMES standardizes and institutionalizes the Navy's ship maintenance business practice processes. These processes are fully embedded in the NMMES IT systems to gain efficiencies in the maintenance process. NMMES systems provide the functionality and processes to continually address the maintenance needs of the Fleet, and have a critical role in the efficient brokering, planning, material ordering, financial performance, and execution of shore maintenance.												

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 14: Production Facilities Equipment		P-1 Line Item Number / Title: 1445 / Operating Forces IPE
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		
This sustainment funding will support procurement of commercial-off-the-shelf (COTS) hardware and software in support of NMMES IT systems, including the Electronic Technical Work Document (ETWD) initiative. [P40A / eTWD NEDC Hardware]: The electronic Technical Work Document (eTWD) system hardware (HW) requirements are for servers required to support and sustain the eTWD environments at Navy Enterprise Data Center (NEDC) Charleston, SC, in support of data center consolidation initiative. [P40A / MSE 1.1 Alt. Production Site]: The Maritime Systems Environment (MSE 1.1) alternate production site will act as the emergency production site if Navy Enterprise Data Center (NEDC) Charleston has catastrophic event. The alternate production site environment will be located at Marine Corps Kansas City Enterprise IT Center (EITC), and will provide minimal impact to ship maintenance business systems if shutdown to NEDC Charleston occurs. Kansas City EITC also serves as the disaster recovery failover site. This will enable the maintenance activities to continue working & utilizing the IT toolset when the primary site is undergoing maintenance or a shutdown is required as there was during hurricane Matthew. This procures the information technology hardware to build the alternate production site for the Naval Shipyards and Regional Maintenance Centers. [P40A / Product Data Management SW]: Product Data Management (PDM) software (SW) is a commercial-off-the-shelf (COTS) software to integrate FORD Class Carrier Program and OHIO Replacement Program (ORP) configuration and technical information during maintenance periods. [P40A / Mobility Solutions]: Provides for the development of applications and software tools to support mobility initiatives at the Naval Shipyards, Regional Maintenance Centers and Ship Repair Facility (SRF) Japan. This capability leverages off the wireless network and electronic Technical Work Document (eTWD) projects and brings needed efficiencies to ship maintenance workers. [P40A / RFIDs]: This project implements Radio Frequency Identification (RFID) capability at the Naval Shipyards, Regional Maintenance Centers, and Ship Repair Facility (SRF) Japan for both waterfront and back-shop application. RFID will provide real-time tracking of parts and materials, creating a more efficient and productive workflow. [P40A / LIMS]: The Laboratory Information System (LIMS) project will purchase the testing, inspection, and environmental, health, and safety commercial software that will be configured to support the maintenance quality assurance program. [P40A / Enterprise Data Analytics]: This procures an Enterprise Data Analytics commercial software engine that will more efficiently support fleet maintenance operations by incorporating modern analytics capabilities to perform condition based maintenance (CBM), utilize more efficient decision making, and provide increased visibility into maintenance and modernization cost and schedule drivers. [P40A / KN300: SHIPYARD CAPITAL INVESTMENT PROGRAM (CIP)]: This line item provides funding for the Shipyard Capital Investment Program in support of the consolidated Naval Shipyard and Intermediate Maintenance Facilities (IMF) at the four mission funded Naval Shipyards. Funds will be used for the procurement and execution of Class 3 & 4 plant and personal property projects to maintain, modernize and improve the infrastructure and industrial base at the mission funded Naval Shipyard/IMF activities. Funding will allow for the acquisition of equipment and OP,N related Automated Data Processing (ADP) Hardware/Software necessary to perform the mission of repairing, conversion, and modernization of fleet ships and submarines in the most economical, efficient, environmentally sound and safe manner possible. NOTE that the budget year equipment requirements provided in this exhibit are based on current Shipyard priorities to best improve submarine and aircraft carrier availability execution within currently projected budget. Projected costs are best government estimates based on market research and are subject to change. Changes to program funding, realized costs, and/or realization of emergent Shipyard equipment requirements after budget submittal could impact the requirements identified in this exhibit. [P40A / SHIPYARD CAPITAL INVESTMENT PROGRAM (CIP)]: Average age of existing naval shipyard capital equipment infrastructure is 22 years, over twice the average age of comparable private industry equipment. Continued reliance on this significantly aged equipment infrastructure increases submarine and CVN availability costs and places schedules at risk. This results in passing workaround costs to the Fleet and ultimately impacting Operational Availability (Ao) when equipment downtime impacts critical path maintenance requirements.		

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Improved maintenance capabilities at the Naval Shipyards are integral to the Nuclear Enterprise. Procurement of new and efficiency-enabling equipment to repair CVNs and submarines contributes to decreasing availability costs and schedules, ultimately returning mission days to the Fleet and moving the needle on Shipyard throughput.		
FY19 funding level is required for capital equipment needed at the Naval Shipyards to support new mission requirements, including VIRGINIA Class introduction at NNSY, concurrent VIRGINIA Class availabilities at PNSY and PHNSY, and LOS ANGELES Class service life extension refueling overhauls at PNSY, as well as recapitalization of significantly aged Industrial Plant Equipment (IPE), weight handling equipment, and nuclear support equipment infrastructure.		
[P40A / NETWORK STORAGE & BACKUP]: This procurement supports the technical refresh of existing storage servers on the legacy network at NNSY.		
[P40A / CVN 68/78 CAMEL SYSTEM]: Camel system required to berth aircraft carriers at NNSY. Existing system is well beyond expected service life and will not support current tidal and storm surge requirements.		
[P40A / VIRGINIA CLASS PROPULSOR HANDLING SYSTEM]: This system provides stacking stands, platforms, Heavy Lift Transporters (HLTs) and the necessary Lifting and Handling system to remove, stow, and reinstall the VIRGINIA Class Propulsor and shaft assembly during depot availabilities. Without this procurement, PNSY will be unable to support assigned VIRGINIA Class depot maintenance. This is the only approved system design for executing these precise and demanding Propulsor and shaft maintenance actions.		
[P40A / VIRGINIA CLASS BOW DOME RING HANDLING SYSTEM]: This project procures a bow dome handling system for PNSY. The bow handling system is attached to the VIRGINIA Class bow dome and is used to remove, store, and reinstall the dome during depot availabilities IAW current depot maintenance plan. VIRGINIA Class bow domes are made of GRP so the ring must remain installed the entire time the bow dome is removed to ensure it retains the required circularity. Without the bow handling system procurement, PNSY will be unable to perform mandatory, critical path VIRGINIA Class depot maintenance requirements.		
[P40A / VIRGINIA CLASS PROPULSOR ENCLOSURE]: Required to support concurrent VIRGINIA Class dry dock availabilities at PNSY. This project provides a set of three partially enclosed towers and connecting roof that will be used individually or in combination to support Special Hull Treatment (SHT) tile repair, hull inspection, sonar dome repair, hull penetration repair, submarine access, equipment mounting and collectively to support VIRGINIA Class propulsor/shaft replacement.		
[P40A / PORTAL CRANE, 60 TON, MODERNIZATION]: Modernization/Service Life Extension project for one PNSY 60 ton portal crane. This service life extension is being performed instead of a \$30M new crane procurement. Existing portal crane is beyond reasonable service life, which decreases reliability, increases cost, and undermines mission execution. Dockside cranes must provide safe, reliable, and efficient weight handling of Fleet system components (e.g. nuclear, weapons, platforms, sensitive material and high cost parts). Replacing obsolete parts, such as obsolete electronic drive control components, is becoming cost prohibitive. New diesel generators are more efficient and have reduced emissions that meet current EPA requirements. Engine overhauls are more costly than the replacement cost of new more appropriately sized engines. Installation of a drum brake on the 15-ton whip hoist will bring that hoist into compliance with current design requirements.		
[P40A / WINDOWS SERVER TECHNICAL REFRESH]: This project supports the planned tech refresh of end-of-life (EOL) Windows servers on the legacy network (CMDNET) at PSNS & IMF. This will result in the procurement and implementation of a suite of virtual software and hardware infrastructure to conform to the DONCIO directive to virtualize all systems by the end of 2017.		
[P40A / INFORMATION TECHNOLOGY DATA STORAGE REFRESH]: This project replaces Information Technology (IT) storage equipment at PNSY, including all existing production NetApp filers and associated disks and hardware which contain all of the electronic data for shipyard operations. Supports the legacy network (SYLAN), Global Maintenance Application Suite (GMAS), and Secured Network (SECNET).		
[P40A / DIESEL GENERATORS, EMERGENCY]: These generators will provide emergency backup power to the nuclear vessels at PHNS&IMF in the event of an electrical power failure, implementing lessons learned from the Fukushima-Daiichi nuclear power plant disaster. Failure to procure a temporary generator sets will leave the submarines berthed and dry docked at these shipyards vulnerable to potential blackout scenarios and unable to meet all requirements.		

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[P40A / MODERNIZE 60 TON PORTAL CRANES]: Modernization/Service Life Extension project for PSNS&IMF 60 ton portal cranes. These service life extensions are being performed instead of a \$30M new crane procurements. Existing portal cranes are beyond reasonable service life, which decreases reliability, increases cost, and undermines mission execution. Dockside cranes must provide safe, reliable, and efficient weight handling of Fleet system components (e.g. nuclear, weapons, platforms, sensitive material and high cost parts). [P40A / EMERGENCY DIESEL GENERATORS]: These generators will provide emergency backup power to the nuclear vessels at NNSY in the event of an electrical power failure, implementing lessons learned from the Fukushima-Daiichi nuclear power plant disaster. Failure to procure a temporary generator sets will leave the submarines berthed and dry docked at these shipyards vulnerable to potential blackout scenarios and unable to meet all requirements. [P40A / 25 TON PORTAL CRANE - IMF BANGOR]: This project procures a new high hook speed, moderate capacity (25-ton) portal crane for PSNS&IMF, IMF Bangor site delta pier. This procurement directly supports an increase in workload for the IMF that requires additional portal cranes to meet project demands. [P40A / DRY DOCK #1 DEFUELING COMPLEX]: This project funds a defueling complex located at PNSY Dry Dock #1. The project will support Fleet's need for simultaneous Virginia Class Depot level maintenance availabilities and concurrent Los Angeles Class inactivations. The complex footprint consists of portable enclosures and services: Two M140 container service and rail car enclosures, an access control enclosure, Dockside Refueling Enclosure, a series of passageways, ventilation equipment, electrical services, fire alarm, and crane services. [P40A / DRY DOCK #2 MATERIAL HIGHWAY]: This is a design-build project for a VIRGINIA Class material handling system (Material Highway (MH)) consisting of equipment platforms, enclosures with pneumatic hoists and manual davit hoist, bridges, carts, manual pallet trucks, Vertical Reciprocating Conveyors (VRCs), and support towers for Dry Dock 2 (DD2) at Pearl Harbor Naval Shipyard and Intermediate Maintenance Facility (PHNSY). [P40A / VIRGINIA Class Vertical Launch System Platform]: This project provides a safe means to perform VIRGINIA Class Vertical Launch System (VLS) work at NNSY. All VLS related work requires a VLS Platform to be installed. This is particularly true for any waterborne work as the VLS bathtub area cannot be safely staged in the water. A VLS Platform is typically installed as soon as the ship arrives for an availability to support equipment offload and is then reinstalled shortly after Undocking and typically remains installed through the remainder of the availability up until Fast Cruise. Without this investment NNSY will be unable to meet maintenance requirements for future Virginia Class availabilities. [P40A / Hydraulic Component Test System]: This project provides PHNS&IMF a new hydraulic testing system that tests valves, actuators, pressure regulators, accumulators and other miscellaneous hydraulic components. The Entwistle testing system currently used is over 10 years old and past its useful life period. The Hydraulic Power Unit (HPU) and Cooling Tower are corroded and flaking due to being outside on a concrete slab and exposed to Hawaii's environment. Recently, one of the HPU's doors rusted off. Due to the condition of the equipment, it had an average breakdown rate of 4 times per year through 2015. Since then, breakdown rate has increased to 8 times per year. This system is critically needed at PHNSY to reduce operational capacity shortfalls and breakdowns, resulting in overtime to meet schedule without being equip for future needs. [P40A / Dry Dock 1 Reactor Access Enclosure System and Support Structure]: This project will fund a RAE (Reactor Access Enclosure) structure and support system for PNSY DD (Dry Dock) #1. The project will support FLEET's need for simultaneous LOS ANGELES Class inactivations. This capability will allow the shipyard to be able to service multiple reactors in the Dry Docks and meet meet the Fleets Scheduled Requirement of simultaneous inactivations starting in FY22. [P40A / VIRGINIA Class Bow Dome Ring]: This project procures a bow dome handling system for PHNSY and NNSY. The bow handling system is attached to the VIRGINIA Class bow dome and is used to remove, store, and reinstall the dome during depot availabilities IAW current depot maintenance plan. VIRGINIA Class bow domes are made of GRP so the ring must remain installed the entire time the bow dome is removed to ensure it retains the required circularity. The bow dome handling system procurement is crucially needed at NNSY and PHNSY to perform mandatory, critical path VIRGINIA Class depot maintenance requirements. [P40A / 7000 Gallon Waste Water Collection Tanks]: Required by PHNS&IMF to store and dispose of radiological waste liquids collected during depot maintenance evolutions. Existing tanks are beyond operable service life and rehabilitation costs exceed new procurement cost. Procurement will reduce maintenance costs and radiological risk/exposure to personnel.		

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[P40A / Portable Paint Room]: This project procures a new portable, cross draft ventilated 50' x 50' x 22' paint enclosure for PNSY to support painting operations during submarine depot availabilities. The current paint room is part of an old building that's scheduled for demolition. This capability crucially needed at PNSY in order to be able to overhaul submarines.		
[P40A / Relief Valve Test Platform]: A Relief Valve Test Platform (RVTP) is required to support all SSBN/SSGN 726 Class availabilities at IMF, Bangor and PSNS. The RVTP is placed directly on the submarine's turtleback and it provides the enclosures, structure, and platforms necessary to support piping installations, safe radiological work areas, and placement of a large liquid waste (RLW) tank to perform the test while the submarine is waterborne. The proposed work enclosure will provide a working surface to support piping and the RLW tank as well as provide a rigid steel framed weather enclosure for all work areas. This will be replacing the current platform which only supports and encloses the piping portion of the system, and requires use of temporary staging and shrink-wrap to enclose the RLW tank.		
SSBN/SSGN 726 Class Relief valve testing is critical path work. The existing RVTP has been in use for ten years, is at the end of its useful life, and has multiple safety and design deficiencies. Current nuclear standards have placed the shipyard's existing RVTP out of compliance. Required modifications to keep it operational have resulted in an RVTP not optimized for its mission. Therefore this equipment has become a critical path scheduling concern. A new RVTP will comply with nuclear standards, reduce critical path impact, improve operational safety, reduce labor, and optimize test functionality.		
[P40A / VIRGINIA Class Sail Racetrack Platform]: The project procures a VIRGINIA Class Sail "Racetrack" for NNSY. This is a work platform that is installed around the top of the Sail with a crane that allows personnel access to safely work Masts, UMMs, Sail Access Plates, etc. on the upper section of the Sail. This platform is mandatory for NNSY to complete sail restoration and maintenance on Virginia Class submarines.		
[P40A / Pure Water Delivery Trailer]: This is a turnkey project to procure two (2) Pure Water delivery Trailers (PWTs) for Pearl Harbor Naval Shipyard and Intermediate Maintenance Facility (PHNSY). PWTs are 6,000 gallon stainless steel tanks integrated onto double axle semi-trailers with water fill/delivery piping and water delivery pump that meet the stringent cleanliness requirements for nuclear powered ships and submarines. This project will provide replacement PWTs for 29 year old PWT #19 and 21 year old PWT #4.		
PWT #4 and PWT #19 must be replaced due to being more than 10 years past their useful service life, unreliable, costly to maintain, and exhibiting corrosion stress cracking. In 2015, PWT #19 was deemed un-repairable and put out-of-service earlier than expected due to cracks on the vent piping. PWTs are required for PHNSY to maintain its nuclear license and are required for PHNSY to be a full service shipyard for nuclear powered ships and submarines. Failure to execute this project will result in the PHNSY operating increasingly unreliable PWTs and increased probability PW deliveries will be delayed, potentially delaying submarine deployment, maintenance, and testing.		
[P40A / Reactor Access Enclosure Training Base Design]: This project funds the design deliverable for a RAE (Radiological Access Enclosure) Training Base located at PNSY Dry Dock #1. The project will support the Fleet's need for simultaneous submarine inactivations at PNSY. The RAE footprint consists of a structural storage base a passageway, electrical services, communications and fire alarms. Without this capability, the shipyard will only be able to train to service reactors in one dry dock, failing to meet the Fleet schedule and training requirements for simultaneous inactivations starting in 2022.		
[P40A / Modernize 60 Ton Portal Cranes - PSNS&IMF]: Modernization/Service Life Extension project for two PNS&IMF 60 ton portal cranes. These \$3M service life extensions are being performed instead of \$30M (each) new crane procurements. Existing portal cranes are beyond reasonable service life, which decreases reliability, increases cost, and undermines mission execution. Dockside cranes must provide safe, reliable, and efficient weight handling of Fleet system components (e.g. nuclear, weapons, platforms, sensitive material and high cost parts). Replacing obsolete parts, such as obsolete electronic drive control components, is becoming cost prohibitive. New diesel generators are more efficient and have reduced emissions that meet current EPA requirements. Engine overhauls are more costly than the replacement cost of new more appropriately sized engines. Installation of a drum brake on the 15-ton whip hoist will bring that hoist into compliance with current design requirements.		
[P40A / VIRGINIA Class VIRGINIA Payload Tube (VPT) Platform]: This project provides a safe means to perform VIRGINIA Class VPT maintenance at NNSY. All VPT-related work requires a VPT Platform to be installed. This is particularly true for any waterborne work as the VPT bathtub area cannot be safely staged in the water. A VPT Platform is typically installed as soon as the ship arrives for an availability to support equipment offload and is then reinstalled shortly after Undocking and typically remains installed through the remainder of the availability up until Fast Cruise. Without this investment, NNSY will be unable to meet VIRGINIA Class maintenance requirements.		
[P40A / Submarine Maintenance Enclosure]: Required by PHNS&IMF to support concurrent VIRGINIA Class dry dock availabilities. This project provides a set of three partially enclosed towers and connecting roof that will be used individually or in combination to support Special Hull Treatment (SHT) tile repair, hull inspection, sonar dome repair, hull penetration repair, submarine access, equipment mounting and		

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collectively to support VIRGINIA Class propulsor/shaft replacement. If this project is not funded in FY18, PHNS&IMF will face difficulty in meeting VIRGINIA Class overhaul completion dates within projected costs due to inefficient existing practice of using scaffolding, makeshift platforms & herculeite. Simultaneous VIRGINIA Class availabilities are scheduled beginning in FY20. [P40A / Emergency Diesel Generators]: These generators will provide emergency backup power to the nuclear vessels at NNSY, PNSY, and PHNS&IMF in the event of an electrical power failure, implementing lessons learned from the Fukushima-Daiichi nuclear power plant disaster. These generators are crucial when precluding submarines berthed and dry docked at these shipyards to be vulnerable to potential blackout scenarios and unable to meet all requirements. [P40A / Portal Crane]: This project procures a new high hook speed portal crane for PSNS&IMF, Bremerton (Shipyard site). This procurement directly supports an increase in workload for the Shipyard that requires additional portal cranes to meet project demands. This crane is designed to fill a critical capability gap for pier and dry dock support. Continued reliance on existing crane population will continue exposure to increasing costs to customer due to lack of support causing delays to the projects, increasing costs to maintain, support, and operate rental/lease cranes, and increasing costs and lower efficiency using higher capacity portal cranes to lift lighter, repetitive loads. [P40A / VIRGINIA Class Propulsor Handling System]: This system provides stacking stands, platforms, Heavy Lift Transporters (HLTs), and the necessary Lifting and Handling system to remove, stow, and reinstall the VIRGINIA Class Propulsor and shaft assembly during depot availabilities. Without this procurement, PHNS&IMF will be unable to support assigned VIRGINIA Class depot maintenance. This is the only approved system design for executing these precise and demanding Propulsor and shaft maintenance actions. PHNS&IMF cannot support mandatory, critical path VIRGINIA Class depot maintenance requirements without this equipment. [P40A / Modernize 60 Ton Portal Crane - NNSY]: Modernization/Service Life Extension project for NNSY 60 ton portal cranes. Existing portal cranes are beyond reasonable service life, which decreases reliability, increases cost, and undermines mission execution. Dockside cranes must provide safe, reliable, and efficient weight handling of Fleet system components (e.g. nuclear, weapons, platforms, sensitive material and high cost parts). Replacing obsolete parts, such as obsolete electronic drive control components, is becoming cost prohibitive. New diesel generators are more efficient and have reduced emissions that meet current EPA requirements. Engine overhauls are more costly than the replacement cost of new more appropriately sized engines. Installation of a drum brake on the 15-ton whip hoist will bring that hoist into compliance with current design requirements. [P40A / Seawater Acid Flush System]: This project procures a submarine Seawater Acid Flush System used for chemically cleaning copper-nickel alloy seawater cooling systems and components. Without this portable acid flush system, PHNSY will continue to perform mechanical cleanings of fouled seawater cooling systems, continuing to place availability schedules at risk when fouling conditions are found as well as eliminating an unobtrusive, rapid defouling option when emergent seawater system fouling conditions occur, typically in warm water conditions. This acid flush system is the only method available to complete any emergent SW system cleanings on operational submarines. The only other method of system cleaning is during a depot availability, requiring affected components, tubing, and piping to be entirely removed, hydro-blasted, inspected, and reinstalled. [P40A / Submarine Camel System]: This project procures one set of universal submarine camels (2 camels) to berth subs at NNSY piers. The proposed camel measures about 36' along the pier, 18' from pier to submarine hull, and 18' top to bottom. The camel features composite panels, ultra high molecular weight polyethylene (UHMWPE) rubber rub strips, arch fenders, lifting bars, cleats, non-slip surface coating, concrete and steel ballast. Without this camel system, NNSY will be unable to support scheduled VIRGINIA Class maintenance assignments. [P40A / CNC Shaft Lathe]: This project procures two Computer Numerically Controlled (CNC) shaft lathes required by PNSY and PSNSY to support submarine and CVN shaft maintenance. [P40A / Defueling Complex - Design]: This project funds development of the deliverable design package consisting of engineered drawings and all technical criteria for procurement of a Multi-Class Submarine Defueling Complex for PSNS&IMF Dry Dock 2 (DD2). The complex consists of two M-140 Enclosures with cranes, one Radiological Access Enclosure (RAE) with a crane, one RAE Annex, several Support Enclosures also with cranes, a Change Enclosure, radiological ventilation, and process support equipment. Age of existing defueling equipment this procurement will recapitalize is 27 - 45 years. This equipment requires frequent repairs between uses, workarounds during use, and are personnel safety risks. Execution of the new design, when completed, will improve efficiencies during submarine defueling operations, reducing schedule and avoiding workaround, repair, and rework costs.		

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[P40A / Dual Media Discharge Enclosures - NNSY]: Dual Media Discharge (DMD) Enclosures are large structures that enable safe and controlled discharge of radioactive Media for nuclear systems maintenance. This system will be made up of stackable connex boxes. The system will support all submarine classes at NNSY and TRIDENT Refit Facility (TRF) Kings Bay (KB). The existing DMD enclosure at NNSY is 29 years old. The tower assembly used at the NRMD was turned over from Trident Refit Facility Kings Bay in 2007 and is reaching its end of life. Existing equipment has trouble maintaining environmental controls. During rain storms NNSY has experienced leaking inside the enclosure due to rusted and deteriorating external walls and sealing components. This equipment is a critical need of the shipyards and TRF KB in order to collect radioactive media and have the ability to perform assigned maintenance responsibilities. [P40A / Vertical Reciprocating Conveyor]: This project replaces the existing 23 year old four-ton capacity Vertical Reciprocating Conveyor (VRC) installed in Dry Dock 04 at PSNSY. The new VRC will be designed to be submersible and therefore can remain in dock while flooding operations occur, significantly lowering VRC operating costs. The shipyard currently must execute workarounds due to increasing, significant downtime of the existing VRC, increasing costs due to use of a constrained Portal Crane population to move relatively light loads to support dry dock operations and increasing exposure to potentially unsafe work conditions. This is particularly germane given the anticipated increased in workload at this dry dock. [P40A / Dual Media Discharge Complex]: The Dual Media Discharge (DMD) Complex is an integrated assembly of portable enclosures used for higher-risk off-hull effluent collection work on OHIO Class submarines. A new DMD Complex is required to replace the 25-year old DMD Complex at IMF Bangor, which has exceeded its design service life. The new Bangor DMD Complex consists of a Control Point Enclosure (to control access and support remote monitoring of critical work), a Portable Radioactive Waste Collection (PRWC) Tank Enclosure (provides weather protection for the PRWC Tank and discharge hose), and a Modular Tower that houses the Low Pressure Resin Catch (LPRC) Tank and required liquid transfer equipment. The modular tower supports access to the submarine and provides weather protection for the LPRC Tank, discharge hose and associated equipment. The DMD complex is equipped with service air, lights, heating and cooling, fire alarm system, adjustable work platforms to install and monitor equipment, permanent shielding, and stairs to reach the various levels of the complex. NOTE that this project recapitalizes the entire DMD Complex, where NNSY's comparable project only recapitalizes the DMD enclosures (modular towers without the LPRC tank). [P40A / Modify M-140 Enclosures- Design]: This project funds the design deliverable package that will define the modifications necessary to simplify fuel transfer operations in existing PSNS&IMF M-140 defueling enclosures. The modifications will increase hook height 4 feet to eliminate the cumbersome process of connecting and disconnecting fuel handling tool columns. Additional upgrades include: seismic survivability, ventilation, lighting, a new tool column rack (to hold the connected tool columns), a new rigging platform (to reach the tool columns for attachment of rigging gear), new lower work level floor mods, and a stairwell to reach each work level given its new change in height. Refueling of TRIDENT and LOS ANGELES class reactor plants involves using two tool column extensions that couple together to lower fuel out the refueling container into an M-140 shipping container. The tool columns are suspended by a crane inside of the structure. The Shipyard's existing M-140 Enclosures do not have sufficient crane hook height to allow the two tool column extensions to remain connected between uses. With the current shorter design of the M-140 enclosures, for each fuel transfer cycle, the fuel cell must be partially lowered into the M-140 container then have the second tool column extension lifted into place and coupled to the first section to complete the discharge into the M-140 container. This operation adds approximately one to 1-1/2 hours to each fuel cell being transferred. The added time and the added operations increase the radiation exposure of personnel, increase the potential for radiological problems, and increase wear on refueling equipment and possible equipment problems during the fuel transfer cycle. This re-design increases hook height so that the tool column extensions can remain coupled together during fuel transfer operations in the M-140 enclosures. This re-design will also include all seismic requirements. [P40A / NETWORK DATA STORAGE CLUSTER]: This project provides automatically switched redundancy and additional network storage for PNSY's Naval Nuclear Propulsion Program Network (NNPPNet or SECNET) and the Corporate Emergency Control Center (CECC). This added system capability to switch over automatically upon failure of the primary system in Bldg 170/6 will allow the CECC to remain fully functional in an emergency situation and also allow the NNPPNet to continue to operate uninterrupted. The existing Network Storage System devices does not provide redundancy to CECC in the event of the loss of connectivity to Bldg 170/6. The existing assets provide connectivity to critical Information Systems that are accessed by the Nuclear Engineering Department, NRRO office, Business office, Engineering Supply, RADCON, SOMS, Project Teams and Administration. Loss of access to this data due to equipment failure would cause NNPPNet (SECNET) to become unavailable to the work force and impede shipyard productivity.		

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[P40A / Local Traffic Manager]: This project supports a technology refresh of the PNSY's web application environment with the procurement and installation of four (4) Local Traffic Manager (LTM) switches. These Local Traffic Manager (LTM) switches are integral to the Shipyard's web application architecture; they provide the required functionality of load-balancing, Transport Layer Security (TLS) acceleration and offloading, online maintenance without denial of service, and FIPS 140-2 (TLS) and Common Criteria security. FIPS 140-2 is required by Navy policy and DoD Directive 8502.2. The replacement of LTM switches is mandatory for vendor-supported security updates and configurations required by DoD, DoN, and NETWARCOM. End of support for our existing LTM switches will prevent compliance with DoD, DoN, and NWC directives. The inability to meet security requirements will open the shipyard to vulnerabilities. In addition, lack of compliance could jeopardize or cause termination of our network accreditation. The new LTM operating system will support all current IAVA and CTO requirements in support of maintaining Cyber Secure network. [P40A / Horizontal Boring Mill]: This project procures a 5-axis horizontal boring mill that will replace a 24 year old boring mill that is severely worn, has exceeded maximum reasonable service life, only has a 4-axis capacity, and frequently breaks down for repairs. Due to the age, replacement parts have become increasingly more difficult to obtain, which adds to the downtime. Reliability and accuracy is poor and extra care and time are required to even perform simple machining operations. Many shop projects require 5-axis capability and the only 5-axis boring mill at PHNSY&IMF is 12 year old boring mill that is also beyond it's service life and frequently down for repairs. [P40A / CRANE, TRUCK MOUNTED, 300 TON]: This project provides PHNSY a General Purpose Service (GPS) mobile crane with a nominal capacity of 300 tons. The high capacity mobile crane is needed to replace the existing high capacity mobile crane that will be 17 year old in 2018. Expected service life for a mobile crane is 10 years. This high capacity mobile crane is needed to support fleet maintenance submarine and surface ship work at Naval Base Pearl Harbor. The crane is needed to support lifting operations at Submarine Base Pearl Harbor where the shipyard does not have lifting capabilities with a portal crane. The crane will be used to lift submarine sonar domes, submarine propellers, sail platforms, rudder staging and other high capacity or long reach lifts. In a typical year the crane makes over 1200 lifts in support of maintenance work. [P40A / LATHE, TURNING CENTER, 6"]]: This project procures PNSY a Computerized Numerically Controlled (CNC) turning center with milling capabilities for the manufacture of cylindrical shaped submarine components. Current equipment is 20 years old and is well beyond its predicted service life, mechanically worn-out, equipped with unsupportable, obsolete, numerical controls. The original equipment manufacturer is no longer making replacement parts. Rebuild will not alleviate the parts issue and would require an extensive one-of-a-kind CNC control interface and retrofit with little or no gained efficiency. Due to the limited capabilities and deterioration of the current 4" turning center a large majority of the work is partially done on smaller lathes which require multiple setup times due to size constraints. The best solution is to purchase one machine with both turning and milling capability allowing the manufacture of parts requiring both types of machining operations to be done in one set-up. Hours of moving parts and machine set-up will be avoided. This would also free up other assets and machinists in the shop for other productive work. [P40A / Information Technology Storage System]: This project replaces Information Technology (IT) storage equipment of Pearl Harbor Naval Shipyard & Intermediate Maintenance Facility (PHNSY & IMF), including all existing production NetApp filers and associated disks and hardware which contain all of the electronic data for shipyard operations. Supports the legacy network (SYLAN), Global Maintenance Application Suite (GMAS), and Secured Network (SECNET). Storage systems five years or older are less reliable, more prone to failure, and technologically obsolete. Current storage equipment has been in use since 2012 and now experiences failures at least monthly. Design redundancy and maintenance have negated major outages thus far, but the equipment should be replaced before such an outage takes place as it would severely impact every aspect of shipyard business including financial, material ordering, ship overhaul planning, and performance analysis. This equipment is critical for all applications and data used to overhaul submarines and for security access control at PHNSY. This includes all data on virtual servers (Windows and UNIX), Oracle/SQL backend databases for corporate and local applications, file shares, ship drawing and instructions, SharePoint intranet web, and physical security access control IT systems. [P40A / Spherical Grinding Machine]: This project procures a spherical grinding machine capable of grinding valve balls between 1" and 24" diameter to an accuracy of 0.0001" roundness. This machine will be installed at PSNS&IMF, Bangor in Shop 31A's grinding room.		

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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		
Grinding valve balls for SEAWOLF and other class submarines is a new mission in PSNS&IMF. SEAWOLF Class and Trident Class submarines have short availabilities, by resurfacing existing valve balls underway schedules will not be jeopardized by long lead time or back ordered valve balls. [P40A / High Pressure Air Compressor]: This project will purchase a universal High Pressure Air Compressor System to provide high pressure air to submarines under repair PNSY's Point Loma detachment. The high pressure air compressor system (HPAC) shall be designed and engineered to consist of a primary high pressure air compressor (HPAC) connected with a redundant compressor to provide uninterrupted HP air in the event of primary unit failure. The twin HPACs will be interconnected for redundancy, include a heat exchanger/fan for each compressor, and supply 90 SCFM at 5000 psi. The compressors will be configured for unattended automatic operation (with remote sensing) and have self-contained membrane dehydrators. Currently Point Loma does not have enough equipment or facilities to provide HP air to all submarines under repair at the submarine base. When a submarine's onboard HP air system is down for maintenance an alternate air source must be provided to support the ship's reactor and secondary air needs. Currently, in order to fulfill this requirement HPACs are rented for the necessary durations for each availability. Annual rental costs exceed acquisition cost. [P40A / Freeze Seal Compressor Systems]: This project procures four new freeze seal compressor systems for NNSY to provide dry compressed air for vortex freeze seal applications. Vortex freeze seals are used to support repairs to piping, valves and/or piping components in situations where the pipe cannot be isolated by any other means. These freeze seal systems support repairs on nuclear piping that is frequently internally radioactively contaminated. Failure or loss of a freeze seal while in the middle of a repair could have catastrophic consequences. A reliable continuous supply of dry compressed air is critical to maintaining freeze seals. NNSY's existing freeze seal systems are over 25 years old and are well past their useful life. [P40A / Steam Test Stand - Design]: This project funds the design deliverable that will be used to modernize NNSY's existing steam test stand. This new design will will re-organize the shop with a more efficient workflow alignment, replace out-dated equipment and corroded pipes which contaminate test articles and violate Steam Plant Clean requirements. The shops will realize lower operating costs, faster test setups, and shorter test start/complete cycles and compliance. This design will also replace existing boilers with modern, digitally controlled, high-efficiency boilers, replace all steam pipe with chrome-moly steel, install fixed manifolds for the Grade A water trailer, relocate the existing accumulator outside of the work area, install (2) dedicated relief valve test stands powered with properly sized electric steam generators, and install two large valve test stands powered by properly sized gas-fired steam generators. It is expected that the design deliverable will require 12 months to complete after awarded, so the resulting modernization effort executing the completed design deliverable is projected for FY20. NNSY is tasked with testing steam system valves and reliefs from surface ships and subs. The existing boilers and test stands cannot consistently provide dry steam for testing leading to seal damage and rework of valves/reliefs. Until this new modernization design is completed and executed, the shop will not be capable of testing the larger pumps and valves now being inducted and anticipated in the future in the required turn-around time constraints nor avoid reworks due to poor quality steam. [P40A / Plasma Cutting System]: This project provides a new "State-of-the-Art" Commercial-Off-The-Shelf (COTS) Computer Numerical Controlled (CNC) plasma cutting system for the Structural Shop in Building 155 at Pearl Harbor Naval Shipyard & IMF (PHNSY). The new system will have a CNC control system, water or down draft cutting table, plasma and oxy-fuel cutting torches, and be capable of cutting plates up to 10' X 20" X 6" thick. Existing Heath plasma cutting machine is 40 years old, obsolete, and repair parts are no longer available; therefore, this machine will not be repairable once the repair parts available at PHNSY are exhausted. The existing ESAB plasma cutting machine is 13 years old, obsolete, difficult to operate, and repair parts are becoming difficult to obtain. A CNC Plasma cutting machine is the most efficient machine to use for cutting thick metal plates (up to 6 inches thick) into the structural parts needed for the modifications, maintenance, and repairs for ships and submarines; therefore, the Structural Shop needs a reliable CNC plasma cutting machine to be fully functional and efficient. [P40A / Reactor Access Enclosure (RAE) Support Tower]: This Project will procure a "Bridge/Towers" steel structure to be anchored to the floor of NNSY Dry Dock 1 and straddle a LOS ANGELES Class submarine. The structural bridge (connecting the towers over the submarine) places the Reactor Access Enclosure (RAE), RAE Annex Enclosures and support equipment directly above the submarine. The Bridge/Towers structure includes a coaming to fill the space between the hull and the bottom of the RAE; and it provides landing points for service equipment and personnel access to the Ship.		

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By executing this project, a support structure will exist that will allow the RAE to be mounted on board a LOS ANGELES Class Submarine without supporting the weight on the hull. Currently the RAE is physically landed on the hull of the submarine. Extensive hull welding is required to provide the proper structural support for the weight of the RAE on the hull. In addition the installation of the RAE on the hull requires a greater area of the hull to have the special hull treatment (SHT) tiles removed then is necessary just to support the reactor access hull cut. The cost and time for installing and then subsequently removing the RAE from the hull is significant. As well as the replacement cost of the SHT tiles and the work necessary to remove and reinstall the extra area covered by the RAE. [P40A / WINDOWS SERVER VIRTUALIZATION PHASE II]: This PSNS & IMF project procures a suite of virtual infrastructure software and hardware to further capitalize on the use of virtualization to reduce IT costs while improving upon efficiencies. The procurement includes 35 servers and support equipment that will replace 128 existing physical servers. Existing devices were purchased in 2006 & 2008 are well beyond the manufacturers end of life and operation capability and cybersecurity risks. Key components of the project would include implementation of a virtual desktop infrastructure, configuration improvements, operations and monitoring improvements, and site recovery and contingency improvements. [P40A / UNIX SERVERS]: This project replaces NNSY's existing Corporate System (UNIX) Servers with Oracle/Sun Microsystems T-7 series servers, along with the associated support equipment, and 12 HP DL-560 Linux Servers and associated support equipment. The T3, T5140 and T5220 server platforms are part of the Corporate Server Datacenter Standard Architecture (CS/DSA) and have reached End of Life, and reach their End of Service support date in 2017, increasing cybersecurity risk. The servers are required to run all mission critical and essential systems. This new equipment provides a technology refresh of critical shipyard systems. Replacement of this system is crucial to all NNSY overhaul and repair work, as well as work performed at the other Naval Shipyards, as NNSY centrally hosts selected Corporate Systems that are used by all shipyards. The ability to meet Cyber Security regulations and requirements is necessary to maintain accreditation and preclude disconnection. [P40A / Switch and Router System]: This project refreshes existing switches and routers with compliant devices on the Portsmouth Naval Shipyard (PNS) local Secure Network (SECNET) attached to the Naval Nuclear Propulsion Program Network (NNPP Net). The existing network devices have reached the manufacturer's End-of-Life/End-of-Support threshold and are cybersecurity risks. These devices are critical components of the IT infrastructure; loss of these devices due to failure will render SECNET inoperable. This replacement is mandatory to retain vendor support. These assets provide connectivity to critical Information Systems that are accessed by Nuclear Engineering Department, NRRO office, Business office, Engineering Supply, RADCON, SOMS, Project Teams and Administration. Loss of these devices would cause SECNET to become unavailable to the work force and impede the productivity of the mission to the fleet. [P40A / Tool Grinding Machine]: This project procures a Computer Numerically Controlled (CNC) Tool Grinding Machine for PSNS&IMF's Toolmaker shop to produce federal stock system tooling for active nuclear systems, and sharpen drills and cutters. The new machine will be a CNC five-axis tool grinder with a 37 HP or greater direct drive spindle capable of handling work pieces up to 88 pounds, 9.8 inch diameter and 14.5 inches long. CNC tool grinding is an essential capability for Toolmakers to manufacture corporate tooling. The existing CNC Tool Grinding Machine is 14 years old and experiencing increasing maintenance downtimes. The machine has been down for maintenance at least 170 calendar days each year over the past three years and was down from July 2015 to July 2016. The existing machine cannot meet current and future workload, nor can it reduce tooling backlog caused by machine breakdowns. The machine does not have a coolant chiller which causes it to overheat and not function if it is worked for longer than one shift. This project increases Toolmaker capacity, productivity, and throughput required to fully support corporate tooling requirements thereby reducing Fleet wait times on Valve Seat Refurbishment kits. PSNS&IMF is the only supplier of Valves Seats Refurbishment kits for nuclear repair work. Allowing this supply to dry up due to obsolete machinery impacts cost and safety of nuclear work throughout the Navy, including PSNS&IMF Projects in San Diego, Everett, Bangor, Bremerton, Guam, and Yokosuka. Replacing obsolete, inaccurate machinery also impacts PSNS nuclear and PSNS&IMF nonnuclear Projects by making new process improvements more readily achievable. [P40A / SYLAN NETWORK INFRASTRUCTURE UPGRADE]: This project refreshes existing network equipment on the Norfolk Naval Shipyard Local Area Network (SYLAN) with compliant devices. [P40A / NFPC 25/50 TON FURNANCE CONTROL MODERNIZATION]: Modernizes the Navy Foundry and Propeller Center (NFPC) furnace control system. These furnaces are the backbone of NFPC's operation, without which the foundry would not be able to cast propulsor components for the shipbuilder, including COLUMBIA Class.		

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[P40A / NFPC SU-8 REPLACEMENT]: This project will be a complete replacement of NFPC's 1972, 14' diameter, 70,000 lb capacity conventional speed milling machine designated SU-8. [P40A / REACTOR ACCESS ENCLOSURE #4]: This project will procure a RAE to be used in support of defueling/inactivation availabilities of Ohio-Class and Los Angeles-Class submarines at NNSY. [P40A / NFPC LINOCURE MIXER REPLACEMENT]: Replaces the degraded and obsolete linocure mixing system at the Navy Foundry and Propeller Center (NFPC). The current system is over thirty years old, is mechanically worn and has obsolete components. This leads to constant breakdowns and silica sand spills which is a safety hazard [P40A / VERTICAL TURRET CENTER 63"]: Purchase a new Vertical Turning Lathe/Center (VTL/VTC) at NNSY to replace a Giddings and Lewis 48" swing Vertical Turning Center 181-047524 that is out of service, and is incapable of being brought back to working condition through simple maintenance. [P40A / SUB ARC WELDING SYSTEM]: This project provides a new submerged arc cladding system at NNSY that will be used to clad Submarine Propulsion Shafts for nuclear submarines. [P40A / HYDROSTATIC TEST STATION]: Replaces PNSY's 1964, 50" Vessel Testing Station, Utility Pumps, and Control System in B306 with a modern horizontal system. [P40A / VERTICAL TURNING CENTER]: This project replaces a 40+ year PNSY vertical turning center with a new CNC machine, which will eliminate existing tolerance and repeatability issues due to age, and increase in productivity by converting to new CNC Controllers. [P40A / RAE SUPPORT STRUCTURE DD1]: PROCURES A SUPPORT STRUCTURE FOR THE REACTOR ACCESS ENCLOSURE (RAE) IN PSNSY DRY DOCK #1. REDUCES DEFUELING CRITICAL PATH BY NINE WEEKS. [P40A / CASCON COMMUNICATIONS SYSTEM]: PROCURES FIVE CASCON SYSTEMS AT PSNSY BASED ON THE CORPORATE DESIGN. INCREASED OSH REQUIREMENTS, CVN DPIA'S, LOS ANGELES CLASS INACTIVATIONS, AND CGN INACTIVATIONS REQUIRE INCREASING CASCON INVENTORY. [P40A / FORKLIFTS]: PROCURES 14 FORKLIFTS OF VARIOUS CAPACITIES AND CONFIGURATIONS FOR PSNSY'S SHIP REPAIR FACILITY (SRF) YOKOSUKA DETACHMENT. FORKLIFTS ARE CENTRALLY MANAGED MATERIAL HANDLING EQUIPMENT THAT REQUIRE OPN FUNDING. FORKLIFT ASSETS USED BY THE PROJECT TEAMS AT THE DETACHMENT ARE BEYOND USEFUL LIFE AND UNRELIABLE. [P40A / CRANE, MOBILE, 50T]: PROCURES TWO 50-TON MOBILE CRANES AT PNSY TO REPLACE TWO GROVE AT750 50-TON MOBILE CRANES PROCURED IN 1997. 20 YEAR OLD GROVE MOBILE CRANES HAVE EXCESSIVE DOWNTIME DUE TO LONG LEAD TIME FOR REPLACEMENT PARTS. [P40A / VERTICAL TURNING CENTERS]: PROCURES TWO CNC VERTICAL TURNING LATHES FOR PSNSY SHOP 31 HEAVING TOOLING SECTION. REPLACES SEVEN TURNING CENTERS RANGING IN AGE FROM 28 - 63 YEARS OLD. [P40A / CRANE, MOBILE, 55T]: PROCURES TWO 55-TON MOBILE CRANES AT PSNSY TO REPLACE TWO GROVE RT740B 40-TON MOBILE CRANES PROCURED IN 1997. NEW CRANES HAVE PROPER AXEL LOADING AND OUTRIGGER SPACING FOR USE ON THE WATERFRONT. [P40A / CRANE, TRUCK MOUNTED, 100 TON]: REPLACE THE EXISTING OBSOLETE, UNRELIABLE PHNSY HIGH CAPACITY MOBILE CRANE THAT WILL BE 17 YEAR OLD IN 2018. PER NAVFAC P300, ECONOMIC LIFE FOR A MOBILE CRANE IS 10 YEARS. [P40A / WINDOWS SERVER SYSTEM]: EXISTING WINDOWS SERVERS AT PHNSY THE SERVERS HAVE REACHED END OF LIFECYCLE AND WILL NO LONGER BE SUPPORTED BY THE MANUFACTURER. UPON CESSATION OF MANUFACTURER SUPPORT, SECURITY PATCHES AND HARDWARE UPDATES WILL NO LONGER BE AVAILABLE. THE LACK OF SECURITY PATCHES WILL MAKE THIS SYSTEM MORE VULNERABLE TO SECURITY PROBING AND INTRUSIONS.		

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[P40A / TANK CLEANING VACUUM SYSTEM]: TANK CLEANING VACUUM SYSTEM REQUIRED BY PHNSY TO SUPPORT SUBMARINE OPERATIONAL SCHEDULE IN DRYDOCK. [P40A / HIGH PRESSURE AIR COMPRESSOR]: THIS PROCUREMENT AT PHNSY REPLACES TWO REBUILT DRESSER-RANDS, APPROX 25 YEARS OF AGE, IN POOR CONDITION AND BEYOND SERVICE LIFE. THEY ARE UNRELIABLE AND EXPENSIVE TO REPAIR. [P40A / 55K PSI ULTRA HIGH PRESSURE WATERJET]: THIS WATERJET IS REQUIRED BY PHNSY TO REMOVE MOLD-IN-PLACE (MIP) SPECIAL HULL TREATMENT (SHT) TILE COATING. [P40A / SECURED NETWORK INFRASTRUCTURE]: THIS PROJECT REPLACES ALL NON-COMPLIANT SWITCHES ON PEARL HARBOR NAVAL SHIPYARD & IMF'S SECURED NETWORK (PHNS SECNET), PROCURES CISCO IDENTITY SERVICES ENGINE (ISE) APPLIANCES, AND PROFESSIONAL SERVICES TO IMPLEMENT ISE. [P40A / VLS LASER CLADDING SYSTEM]: THIS PROJECT REPLACES THE EXISTING OBSOLETE AND UNRELIABLE LASER CLADDING REPAIR SYSTEM (LCRS) USED TO REPAIR CORROSION IN BAND SEALS OF VERTICAL LAUNCH SYSTEM'S (VLS) MISSILE TUBE. [P40A / BLAST BOOTH FLOOR #2 REPLACEMENT]: The conversion of NNSY blast booth #2 will completely replace the existing floor sweeper-type system. The new system will consist of electric motor driven auger screws returning blast media to a center, cross-screw conveyor with associated steel insert pans. The blast media will be pushed into the existing grain elevator style system and use the existing grit cleaning process. [P40A / RAE SUPPORT STRUCTURES DD5]: This project will procure two sets of "bridge and towers" steel structures to be anchored to the floor of PSNSY Dry Dock 5 and straddle two 688 Class submarines. Each structural bridge (connected to the towers) supports the Reactor Access Enclosure (RAE), RAE Annex Enclosure, and service equipment directly above the submarine. [P40A / 50 TON CRAWLER]: This project procures a new 50 ton crawler at NNSY. The crawler is track-mounted excavator-based material lifting and handling mobile equipment. In lieu of a boom and arm attached bucket, the crawlers are equipped with a custom design boom, jib, pad eyes, and swiveling pull cylinder with hydraulic cylinders arranged for lifting, handling, and pulling versus digging. The equipment boom and jib are supplied with hydraulic lines to service a jib mounted horizontal pull cylinder. Unlike lattice boom cranes, the robust compact crawler can withstand shock loads associated with sudden load release. Capacity will be increased from 40 Tons to 50 Tons. The capacity is limited by tipping and hydraulic capability, not structural strength. These features enable safe, economical, efficient, compact, simplified, low headroom lifting, handling and pulling. [P40A / LOCOMOTIVES]: This project replaces two PNSY 65-ton diesel electric locomotives (USN 6500308 and 6500566) built in 1952 with two new commercially available locomotives of similar size and capacity. The project will support FLEET's 688 inactivation schedule. These locomotives provide defueling support by moving M-140 railcars into and out of the defueling complex as well as providing general rail service for moving large loads on flat cars throughout the shipyard. The locomotives will be 65 years old in 2017, which is 45 years beyond their useful life expectancy. [P40A / WASTEWATER TREATMENT SYSTEM]: This project replaces the existing Pier D 100 gallon per minute (GPM) Oily Wastewater Treatment System (OWTS) plant with a 200 GPM skid-mounted OWTS plant and four 20,000 gallon holding tanks. OWTS plants employ physical separation of oily wastewater followed by precipitation, demulsification, coagulation, flocculation, and settling to remove oil, heavy metals, and other contaminants (i.e., settleable solids) from ships' wastewater (i.e., bilge and ballast water). [P40A / 1,250 TON FORGING PRESS WITH 6,000 LB MANIPULATOR]: This project replaces the existing 1,250 ton forging press and port-a-bar billet handling system at PSNSY for work greater than 3,000 lb. The port-a-bar will be replaced with a 6,000 lb. forge manipulator. A forge manipulator is an essential piece of equipment used to transport the work piece between the furnace and the forging press, a process that is repeated multiple times until the work piece is shaped into the final product. [P40A / HYDROSTATIC TEST TANK]: Procure one quick opening vertical/cylindrical hydrostatic test tank with a 42" inside diameter by 36" internal height with an overall rim height of 60 inches at NNSY. Carbon steel construction tank shall have a rust proof grated platform located inside the tank with a 700 lb. load capacity. Tank shall have a 2,800 psig working pressure and 4,000 psig certification test pressure. Hydraulic powered clam type head, vertical opening cover constructed so cover closes and seals automatically.		

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[P40A / HORIZONTAL TURNING CENTERS]: This project will procure 7 new CNC Horizontal turning centers at NNSY to replace 5 existing centers that are at 20+ years of age. These machines will be used to manufacture packing glands, fitted bolts, pistons, small shafts, couplings, sub-safe hatches, sea-valve and valve stems. The turning centers will have live tooling with a minimum of 12" chuck and minimum 4" through spindle. The existing equipment will be removed and foundation upgraded or erected as needed to support new equipment. [P40A / VERTICAL TURNING CENTER WITH Y AXIS]: Procure a new vertical turning center at PHNSY. Machining capacity of boring, turning, facing, grinding, milling internal keyways and buttress threads, etc. is necessary to support new workload involving VA class shaft couplings, hatch covers and submarine torpedo slide valves. PHNSY currently does not have the reliable machining method or the capability to machine the components. [P40A / TANK CLEANING SYSTEM]: TANK CLEANING SYSTEM REQUIRED BY NNSY TO EXECUTE CVN DRYDOCK AVAILABILITY SCHEDULE. [P40A / Portal Crane Service Life Extension]: Portal crane modernization/Service Life Extensions. Existing portal cranes are beyond reasonable service life, which decreases reliability, increases cost, and undermines mission execution. [P40A / Emergency Diesel Generators - PSNS&IMF]: These generators will provide emergency backup power to the nuclear vessels at PSNS&IMF in the event of an electrical power failure, implementing lessons learned from the Fukushima-Daiichi nuclear power plant disaster. These generators are crucial when precluding submarines berthed and dry docked at these shipyards to be vulnerable to potential blackout scenarios and unable to meet all requirements. [P40A / 175 TON HEAVY LIFT PORTAL CRANE]: This 175 ton heavy lift portal crane is required to execute LOS ANGELES Class refueling evolutions at PNSY. Refueling lifts cannot be executed using existing 60 ton portal crane infrastructure. [P40A / REFUELING STORAGE ENCLOSURE DESIGN]: Design for the PNSY Refueling Storage Enclosure being procured in FY19. This acquisition is required to execute LOS ANGELES Class refueling evolutions at PNSY IAW current schedule. [P40A / REFUELING STORAGE ENCLOSURE]: PNSY Refueling Storage Enclosure that is required to execute LOS ANGELES Class refueling evolutions at PNSY IAW current schedule. [P40A / REFUELING COMPLEX]: Modify PNSY Dry Dock 1 defueling complex to add submarine refueling capabilities. This acquisition is required to execute LOS ANGELES Class refueling evolutions at PNSY IAW current schedule. [P40A / HIGH DENSITY STORAGE SYSTEM]: High Density Storage System required by PNSY to support LOS ANGELES Class service life extension refueling availability schedule. [P40A / KN400: SHIP MAINTENANCE INVESTMENT PROGRAM]: This line item provides funding to support capital investments for the Regional Maintenance Centers (RMCs), including forward deployed RMCs, Trident Refit Facility (TRF) Kings Bay (KB), Naval Submarine Support Facility New London (NSSF NL), and Navy Base Guam. Funds will be used for the procurement and execution of personal property projects (including Industrial Plant Equipment (IPE), IT HW/SW, portal/bridge cranes, MILCON collateral equipment, etc.) of a capital nature (greater then \$250K) to maintain and modernize the ship maintenance industrial base, with a focus on reducing total ownership costs. These personal property projects are required for the RMCs and TRF KB to perform their mission of repairing, conversion, and modernization of fleet ships and submarines. [P40A / KN504: Commander, U.S. Pacific Fleet (PACFLT)]: These funds are used by PACFLT to procure investment items required to maintain and modernize the Fleet's ship maintenance industrial base with a focus on reducing total ownership costs. [P40A / Boring, Drilling and Milling (BDM) Machine]: Boring, Drilling and Milling (BDM) Machine used for boring, drilling and milling work pieces of various materials such as heating exchanger tube sheet, AMMO elevator platform and rader foundation.		

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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		
[P40A / A-47 Gantry Crane]: Replacement of old equipment. Crane support in metal plate yard is required to support the 7th Fleet ship maintenance and repair. [P40A / Planomiller (compact type)]: Replacement of old equipment. This equipment is used for milling and drilling operation for battle ship's repair such as equipment foundations, deck plates, heat exchanger components, turbine casings. [P40A / Hydraulic Press]: Replacement of old equipment. This equipment is used to bend the material or straighten the distorted material [P40A / Abrasive Blast and Recovery System, X-71]: Equipment to be utilized in the blasting of a ship's tank. [P40A / Propeller Shaft Lathe]: Propeller Shaft Lathe replaces obsolete equipment initially installed in the 1940s. [P40A / Waterjet Cutting Machine]: This equipment is used to cut thinner pieces of aluminum automatically using Computer Numerical Control (CNC)instead of by hand. [P40A / Scanning Electron Microscope (SEM)]: SEM will provide upgraded accuracy, precision, reliability and image resolution with updated technologies to improve laboratory services. [P40A / Environmental Welding Chamber]: Environmental Welding Chamber is an environmentally controlled chamber for doing titanium welding. [P40A / Emergency Generator and Fuel Tank for Dry Docks]: Equipment is used to provide emergent electric power to Dry Dock #1, #2, and #3 for continuous operation of auxiliary equipment if primal power supply is down. [P40A / Inductively Coupled Plasma - Atomic Emission Spectrometer]: Replacement of old equipment. The ICP-AES is used to provide upgraded accuracy, precision, and reliability to maintain the laboratory capability in testing detrimental materials for CVN steam plant cleanliness. [P40A / Power Press Brake]: Replacement of old equipment. This equipment is used to bend and form sheet metal, forming predetermined bends supported by Computer Numerical Control (CNC). [P40A / Blast Cleaning and Finishing System]: Replacement of old equipment. This equipment is used to remove paint from items by use of hard media to meet required surface finish standards prior to powder-coating or repainting. [P40A / MHE Forklifts]: Initial procurement of Material Handling Equipment forklifts in support of operations at Ship Repair Facility Japan Regional Maintenance Center, Yokosuka. [P40A / Balancing Machine, Horizontal]: Replacement of old equipment. This equipment is used for a balancing of rotor as a step of motor/generator repair work. [P40A / Self-Propelled Modular Transporter]: New requirement to replace current capabilities supporting shaft work and movement of other large pieces of equipment (i.e., Main Reduction Gears). Will reduce manning requirements and increase safety during large lifting and handling evolutions. [P40A / Demineralizer]: Replacement for existing technologies in shop 07H. Equipment produces pure water for equipment maintenance. [P40A / Rolling Machine, Thread]: Replacement of old equipment. Equipment is used to form a screw thread by rolling. [P40A / Lathe, Engine Profiling]: Replacement of old equipment. This equipment is used to create a symmetrical object about a rotation axis.		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 14: Production Facilities Equipment		P-1 Line Item Number / Title: 1445 / Operating Forces IPE
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 / Boring Machine, Portable]: Replacement of old equipment. Portable equipment used to bore into work pieces. [P40A / Burning Oven, Walk-in]: Replacement of old equipment. This equipment is used to remove residual paint, which is not removed by mechanical means, by use of high temperature prior to powder coating. [P40A / Powder Coating System]: Replacement of old equipment. System is comprised of a spray booth and curing oven to process powder coating projects. [P40A / Shearing Machine]: Replacement of old equipment. The equipment is used for the cutting of shapes out of sheet metal. [P40A / Dust Collector]: Replacement of old equipment. This equipment is used to control the dust levels of environment during blasting and painting of ship's tanks. [P40A / Dehumidifier]: Replacement for existing equipment, which supplies dry air for the paint shop. [P40A / Bending Roll]: Replacement of old equipment. This equipment is used to bend the material, even in a narrow work space. [P40A / Laser and Turret Punch, Combined Machine]: Equipment replaces existing laser cutting machine and turret punch for shop 17. Equipment laser cuts, punches holes, and folds bends in a metal plate by selected die set held in a multi-station turret. [P40A / Optical Emission Mass Spectrometer, C130]: Provides upgraded accuracy, precision and reliability with updated technologies to improve laboratory services. [P40A / Rotary Table, Index]: Replacement of old equipment that acts as a work positioning device used in metalworking. It enables the operator to drill or cut work at exact intervals around a fixed axis. [P40A / Electrical Discharge Machine, CNC]: Manufactures small parts and cuts slots in shaft couplings etc by electrical discharge. [P40A / Universal Testing Machine]: Used to test the tensile stress and compressive strength of materials. [P40A / Vertical Lathe]: Used to rotate a workpiece and perform various operations such as cutting, sanding, knurling, drilling, or deformation, facing, turning. [P40A / Gasket Cutting Table]: Replacement of existing equipment. Equipment allows for the precision cutting of metal shapes. [P40A / Press Brake]: Replacement of existing equipment. Press brake is a machine tool for bending sheet and plate material, most commonly sheet metal. It forms predetermined bends by clamping the workpiece between a matching punch and die. [P40A / Portal Crane]: Replacement of old equipment. Crane support is required to support 7th Fleet ship maintenance and repair. Heavy lift capacity of the portal crane at the dry docks provides capabilities for shaft repair/replacement, rudder/post, propeller, sonar dome, highly political/sensitive lifts involving RAM from USS REAGAN; and setting of dry docks (requires lowering of forklifts, blocks, and mobile cranes into dock); and in extreme cases MRG replacement as accomplished on McCAMPBELL. Two cranes are required at a dock to allow flexibility to (i) keep up with high workloads, (ii) perform heavier lifts (e.g. shaft) which is beyond the capacity of a single crane, and (iii) allow maintenance cycles (50-60 days) on the cranes without impacting ship maintenance. [P40A / KN800: INTEGRATED CONDITION ASSESSMENT SYSTEM (ICAS) NEW INSTALL]: Funding procures all new installations of the Integrated Condition Assessment System (ICAS) hardware and software aboard Surface Fleet hulls. New Installation include: ICAS workstation hardware (including Palm Pilot Portable Data Terminal (PDTs)), latest version of ICAS system software, Configuration Data Set (CDS) (including the implementation of developed enhancements), firewall (if applicable), remote monitoring utility (RMU), ILS and ship's force training. Manage contractor efforts, prepare installation plans, perform ship checks, procure material, oversee shipboard installation and Quality Assurance (QA), develop/implement CDS, install/test all software and CDSs, provide ship's force training.		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 14: Production Facilities Equipment		P-1 Line Item Number / Title: 1445 / Operating Forces IPE
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 / KN900: INTEGRATED CONDITION ASSESSMENT SYSTEM (ICAS) TECH REFRESH]: Funding procures all technical refresh upgrades of the Integrated Condition Assessment System (ICAS) hardware and software aboard Surface Fleet hulls. Upgrades will include: ICAS workstation hardware (including Palm Pilot Portable Data Terminal (PDTs)), latest version of ICAS system software, Configuration Data Set (CDS) groom (including the implementation of developed enhancements), firewall (if applicable), remote monitoring utility (RMU), and ship's force refresher training. Manage contractor efforts, prepare installation plans, perform ship checks, procure material, oversee shipboard installation and Quality Assurance (QA), develop/implement CDS updates, install/test all software and CDSs, provide ship's force training. [P40A / KN505 - Joint Ops Center- PACOM]: This is a Classified Program. Time-Sensitive Targeting (TST) cell requires OPN equipment in the USPACOM J3 Joint Fires Element (JFE) and Joint Operations Center (JOC). OPN funding will allow personnel to coordinate joint fires effects from emerging threats across multiple sources and components. [P40A / KN201: NAVY MARITIME MAINTENANCE ENTERPRISE SOLUTION TECHNICAL REFRESH (NMMES-TR)]: The NMMES-TR plan for acquisition that has been endorsed by the Executive Steering Committee and recently approved at a Gate 2 Review by the R3B is to procure initial COTS licenses in FY18 that could address the functional requirements for work brokering, MRO requirements management and scheduling. These licenses will be used to either prototype a potential solution or procure software licenses to address the critical need to replace the Validation Screening And Brokering (VSB), Regional Maintenance Automated Information System (RMAIS), and Project Sequencing and Scheduling systems (PSS) that are either unsupported or not fulfilling the required functional requirement. [P40A / NAVY MARITIME MAINTENANCE ENTERPRISE SOLUTION TECHNICAL REFRESH]: FY19 NMMES TR funding over FY18 levels includes new investments of the Laboratory Information Management System (LIMS) software to support the maintenance quality assurance program, Enterprise Data Analytics software that will be acquired to more efficiently support fleet maintenance operations, and Commercial Off The Shelf (COTS) software replace those that are obsolete and no longer supported.		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy								Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 14: Production Facilities Equipment						P-1 Line Item Number / Title: 1445 / Operating Forces IPE				
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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	Operating Forces IPE	P-5a, P-21			- / 571.753	- / 71.921	- / 191.541	- / 225.181	- / -	- / 225.181
P-40	Total Gross/Weapon System Cost				- / 571.753	- / 71.921	- / 191.541	- / 225.181	- / 0.000	- / 225.181
*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 Operating Forces IPE Budget for the Shipyard Capital Investment Program and NMMES Sustainment have been restructured to identify and break out individual component costs previously consolidated within Item Numbers in previous budget submits.

The FY 2019 funding request was reduced by \$1.452 million to reflect the Department of Navy's effort to support the Office of Management and Budget directed reforms for Efficiency and Effectiveness that include a lean, accountable, more efficient government.

FY19 KN300 Capital Investment Program funding above FY18 levels is required to address equipment investments needed to support new mission LOS ANGELES Class refueling requirements at PNSY (\$40M heavy lift portal crane, \$13M refueling storage enclosure, and \$9M high density storage system). The additional \$45.7M requested in FY19 (above FY18 controls) is in support of the new mission refueling requirement, reducing the number of deferred shipyard capital equipment modernization plan projects. LOS ANGELES Class refueling is critical to supporting the 355 ship fleet

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy																Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 14						P-1 Line Item Number / Title: 1445 / Operating Forces IPE						Aggregated Items Title: Operating Forces IPE									
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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) KN200: NAVY MARITIME MAINTENANCE ENTERPRISE SOLUTION SUSTAINMENT																					
1.1) NAVY MARITIME MAINTENANCE ENTERPRISE SOLUTION SUSTAINMENT	A		-	-	7.695	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1.2) eTWD NEDC Hardware ^(†)	A		-	-	-	-	-	-	8,000K	1	8.000	-	-	-	-	-	-	-	-	-	
1.3) MSE 1.1 Alt. Production Site ^(†)	A		-	-	-	-	-	-	5,000K	1	5.000	-	-	-	-	-	-	-	-	-	
1.4) Product Data Management SW ^(†)	A		-	-	-	-	-	-	9,000K	1	9.000	-	-	-	-	-	-	-	-	-	
1.5) Mobility Solutions ^(†)	A		-	-	-	-	-	-	1,000K	1	1.000	-	-	-	-	-	-	-	-	-	
1.6) RFIDs ^(†)	A		-	-	-	-	-	-	1,000K	1	1.000	955,000.00	1	0.955	-	-	-	955,000.00	1	0.955	
1.7) LIMS ^(†)	A		-	-	-	-	-	-	-	-	-	900,000.00	1	0.900	-	-	-	900,000.00	1	0.900	
1.8) Enterprise Data Analytics ^(†)	A		-	-	-	-	-	-	-	-	-	1,000K	1	1.000	-	-	-	1,000K	1	1.000	
1.9) COTS Software ^(†)	A		-	-	-	-	-	-	-	-	-	500,000.00	1	0.500	-	-	-	500,000.00	1	0.500	
Subtotal: 1) KN200: NAVY MARITIME MAINTENANCE ENTERPRISE SOLUTION SUSTAINMENT			-	-	7.695	-	-	-	-	-	24.000	-	-	3.355	-	-	-	-	-	3.355	
2) KN300: SHIPYARD CAPITAL INVESTMENT PROGRAM (CIP)																					
2.1) SHIPYARD CAPITAL INVESTMENT PROGRAM (CIP)	A		-	-	477.508	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2.2) NETWORK STORAGE & BACKUP ^(†)	A		3,518K	1	3.518	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2.3) CVN 68/78 CAMEL SYSTEM ^(†)	A		8,050K	1	8.050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2.4) VIRGINIA CLASS PROPULSOR HANDLING SYSTEM ^(†)	A		6,300K	1	6.300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2.5) VIRGINIA CLASS BOW DOME RING HANDLING SYSTEM ^(†)	A		800,000.00	1	0.800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2.6) VIRGINIA CLASS PROPULSOR ENCLOSURE ^(†)	A		8,022K	1	8.022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy																Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 14								P-1 Line Item Number / Title: 1445 / Operating Forces IPE								Aggregated Items Title: Operating Forces IPE					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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)	
2.7) PORTAL CRANE, 60 TON, MODERNIZATION ^(†)	A		2,458K	1	2.458	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2.8) WINDOWS SERVER TECHNICAL REFRESH ^(†)	A		3,400K	1	3.400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2.9) INFORMATION TECHNOLOGY DATA STORAGE REFRESH ^(†)	A		1,540K	1	1.540	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2.10) DIESEL GENERATORS, EMERGENCY ^(†)	A		664,166.67	6	3.985	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2.11) MODERNIZE 60 TON PORTAL CRANES ^(†)	A		-	-	-	2,364K	2	4.728	-	-	-	-	-	-	-	-	-	-	-	-	
2.12) EMERGENCY DIESEL GENERATORS ^(†)	A		-	-	-	785,000.00	2	1.570	-	-	-	-	-	-	-	-	-	-	-	-	
2.13) 25 TON PORTAL CRANE - IMF BANGOR ^(†)	A		-	-	-	13,814K	1	13.814	-	-	-	-	-	-	-	-	-	-	-	-	
2.14) DRY DOCK #1 DEFUELING COMPLEX ^(†)	A		-	-	-	26,500K	1	26.500	-	-	-	-	-	-	-	-	-	-	-	-	
2.15) DRY DOCK #2 MATERIAL HIGHWAY ^(†)	A		-	-	-	10,000K	1	10.000	-	-	-	-	-	-	-	-	-	-	-	-	
2.16) VIRGINIA Class Vertical Launch System Platform ^(†)	A		-	-	-	-	-	-	500,000.00	1	0.500	-	-	-	-	-	-	-	-	-	
2.17) Hydraulic Component Test System ^(†)	A		-	-	-	-	-	-	2,525K	1	2.525	-	-	-	-	-	-	-	-	-	
2.18) Dry Dock 1 Reactor Access Enclosure System and Support Structure ^(†)	A		-	-	-	-	-	-	7,300K	1	7.300	-	-	-	-	-	-	-	-	-	
2.19) VIRGINIA Class Bow Dome Ring ^(†)	A		-	-	-	-	-	-	1,380K	1	1.380	1,380K	1	1.380	-	-	-	1,380K	1	1.380	
2.20) 7000 Gallon Waste Water Collection Tanks ^(†)	A		-	-	-	-	-	-	1,195K	1	1.195	-	-	-	-	-	-	-	-	-	

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Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 14							P-1 Line Item Number / Title: 1445 / Operating Forces IPE								Aggregated Items Title: Operating Forces IPE					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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)
2.21) Portable Paint Room ^(†)	A		-	-	-	-	-	-	-	-	-	650,000.00	1	0.650	-	-	-	650,000.00	1	0.650
2.22) Relief Valve Test Platform ^(†)	A		-	-	-	-	-	-	2,415K	1	2.415	-	-	-	-	-	-	-	-	-
2.23) VIRGINIA Class Sail Racetrack Platform ^(†)	A		-	-	-	-	-	-	478,000.00	1	0.478	-	-	-	-	-	-	-	-	-
2.24) Pure Water Delivery Trailer ^(†)	A		-	-	-	-	-	-	528,500.00	2	1.057	-	-	-	-	-	-	-	-	-
2.25) Reactor Access Enclosure Training Base Design ^(†)	A		-	-	-	-	-	-	-	-	-	390,000.00	1	0.390	-	-	-	390,000.00	1	0.390
2.26) Modernize 60 Ton Portal Cranes - PSNS&IME ^(†)	A		-	-	-	-	-	-	3,025K	2	6.050	-	-	-	-	-	-	-	-	-
2.27) VIRGINIA Class VIRGINIA Payload Tube (VPT) Platform ^(†)	A		-	-	-	-	-	-	1,300K	1	1.300	-	-	-	-	-	-	-	-	-
2.28) Submarine Maintenance Enclosure ^(†)	A		-	-	-	-	-	-	4,500K	1	4.500	-	-	-	-	-	-	-	-	-
2.29) Emergency Diesel Generators ^(†)	A		-	-	-	-	-	-	813,416.67	12	9.761	-	-	-	-	-	-	-	-	-
2.30) Portal Crane ^(†) (†)	A		-	-	-	-	-	-	18,235K	1	18.235	15,924K	1	15.924	-	-	-	15,924K	1	15.924
2.31) VIRGINIA Class Propulsor Handling System ^(†)	A		-	-	-	-	-	-	8,991K	1	8.991	-	-	-	-	-	-	-	-	-
2.32) Modernize 60 Ton Portal Crane - NNSY ^(†)	A		-	-	-	-	-	-	3,000K	1	3.000	-	-	-	-	-	-	-	-	-
2.33) Seawater Acid Flush System ^(†)	A		-	-	-	-	-	-	-	-	-	1,600K	1	1.600	-	-	-	1,600K	1	1.600
2.34) Submarine Camel System ^(†)	A		-	-	-	-	-	-	-	-	-	1,300K	1	1.300	-	-	-	1,300K	1	1.300
2.35) CNC Shaft Lathe ^(†)	A		-	-	-	-	-	-	-	-	-	15,000K	2	30.000	-	-	-	15,000K	2	30.000
2.36) Defueling Complex - Design ^(†)	A		-	-	-	-	-	-	-	-	-	3,500K	1	3.500	-	-	-	3,500K	1	3.500

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 14						P-1 Line Item Number / Title: 1445 / Operating Forces IPE									Aggregated Items Title: Operating Forces IPE					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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)
2.37) Dual Media Discharge Enclosures - NNSY ^(†)	A		-	-	-	-	-	-	920,000.00	2	1.840	-	-	-	-	-	-	-	-	-
2.38) Vertical Reciprocating Conveyor ^(†)	A		-	-	-	-	-	-	-	-	-	3,000K	1	3.000	-	-	-	3,000K	1	3.000
2.39) Dual Media Discharge Complex ^(†)	A		-	-	-	-	-	-	2,875K	1	2.875	-	-	-	-	-	-	-	-	-
2.40) Modify M-140 Enclosures- Design ^(†)	A		-	-	-	-	-	-	-	-	-	300,000.00	1	0.300	-	-	-	300,000.00	1	0.300
2.41) NETWORK DATA STORAGE CLUSTER ^(†)	A		-	-	-	-	-	-	900,000.00	1	0.900	-	-	-	-	-	-	-	-	-
2.42) Local Traffic Manager ^(†)	A		-	-	-	-	-	-	600,000.00	1	0.600	-	-	-	-	-	-	-	-	-
2.43) Horizontal Boring Mill ^(†)	A		-	-	-	-	-	-	3,000K	1	3.000	-	-	-	-	-	-	-	-	-
2.44) CRANE, TRUCK MOUNTED, 300 TON ^(†)	A		-	-	-	-	-	-	3,482K	1	3.482	-	-	-	-	-	-	-	-	-
2.45) LATHE, TURNING CENTER, 6" ^(†)	A		-	-	-	-	-	-	-	-	-	550,000.00	1	0.550	-	-	-	550,000.00	1	0.550
2.46) Information Technology Storage System ^(†)	A		-	-	-	-	-	-	2,236K	1	2.236	-	-	-	-	-	-	-	-	-
2.47) Spherical Grinding Machine ^(†)	A		-	-	-	-	-	-	-	-	-	1,524K	1	1.524	-	-	-	1,524K	1	1.524
2.48) High Pressure Air Compressor ^(†)	A		-	-	-	-	-	-	-	-	-	350,000.00	1	0.350	-	-	-	350,000.00	1	0.350
2.49) Freeze Seal Compressor Systems ^(†)	A		-	-	-	-	-	-	545,000.00	2	1.090	-	-	-	-	-	-	-	-	-
2.50) Steam Test Stand - Design ^(†)	A		-	-	-	-	-	-	-	-	-	2,500K	1	2.500	-	-	-	2,500K	1	2.500
2.51) Plasma Cutting System ^(†)	A		-	-	-	-	-	-	-	-	-	2,150K	1	2.150	-	-	-	2,150K	1	2.150
2.52) Reactor Access Enclosure (RAE) Support Tower ^(†)	A		-	-	-	-	-	-	-	-	-	1,641K	1	1.641	-	-	-	1,641K	1	1.641
2.53) WINDOWS SERVER	A		-	-	-	-	-	-	3,800K	1	3.800	-	-	-	-	-	-	-	-	-

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 14							P-1 Line Item Number / Title: 1445 / Operating Forces IPE								Aggregated Items Title: Operating Forces IPE					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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)
VIRTUALIZATION PHASE II ^(†)																				
2.54) UNIX SERVERS ^(†)	A		-	-	-	-	-	-	2,903K	1	2.903	-	-	-	-	-	-	-	-	-
2.55) Switch and Router System ^(†)	A		-	-	-	-	-	-	-	-	-	1,852K	1	1.852	-	-	-	1,852K	1	1.852
2.56) Tool Grinding Machine ^(†)	A		-	-	-	-	-	-	1,110K	1	1.110	-	-	-	-	-	-	-	-	-
2.57) SYLAN NETWORK INFRASTRUCTURE UPGRADE ^(†)	A		-	-	-	-	-	-	5,200K	1	5.200	-	-	-	-	-	-	-	-	-
2.58) NFPC 25/50 TON FURNANCE CONTROL MODERNIZATION ^(†)	A		-	-	-	-	-	-	550,000.00	1	0.550	-	-	-	-	-	-	-	-	-
2.59) NFPC SU-8 REPLACEMENT ^(†)	A		-	-	-	-	-	-	4,905K	1	4.905	-	-	-	-	-	-	-	-	-
2.60) REACTOR ACCESS ENCLOSURE #4 ^(†)	A		-	-	-	-	-	-	3,675K	1	3.675	-	-	-	-	-	-	-	-	-
2.61) NFPC LINOCURE MIXER REPLACEMENT ^(†)	A		-	-	-	-	-	-	955,000.00	1	0.955	-	-	-	-	-	-	-	-	-
2.62) VERTICAL TURRET CENTER 63 ^m ^(†)	A		-	-	-	-	-	-	1,350K	1	1.350	-	-	-	-	-	-	-	-	-
2.63) SUB ARC WELDING SYSTEM ^(†)	A		-	-	-	-	-	-	720,000.00	1	0.720	-	-	-	-	-	-	-	-	-
2.64) HYDROSTATIC TEST STATION ^(†)	A		-	-	-	-	-	-	-	-	-	2,050K	1	2.050	-	-	-	2,050K	1	2.050
2.65) VERTICAL TURNING CENTER ^(†)	A		-	-	-	-	-	-	-	-	-	1,500K	1	1.500	-	-	-	1,500K	1	1.500
2.66) RAE SUPPORT STRUCTURE DD1 ^(†)	A		-	-	-	-	-	-	3,450K	1	3.450	-	-	-	-	-	-	-	-	-
2.67) CASCON COMMUNICATIONS SYSTEM ^(†)	A		-	-	-	-	-	-	820,000.00	5	4.100	-	-	-	-	-	-	-	-	-
2.68) FORKLIFTS ^(†)	A		-	-	-	-	-	-	62,000.00	14	0.868	-	-	-	-	-	-	-	-	-
2.69) CRANE, MOBILE, 50T ^(†)	A		-	-	-	-	-	-	780,000.00	2	1.560	-	-	-	-	-	-	-	-	-

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 14						P-1 Line Item Number / Title: 1445 / Operating Forces IPE									Aggregated Items Title: Operating Forces IPE					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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)
2.70) VERTICAL TURNING CENTERS ^(†)	A		-	-	-	-	-	-	-	-	-	1,750K	2	3.500	-	-	-	1,750K	2	3.500
2.71) CRANE, MOBILE, 55T ^(†)	A		-	-	-	-	-	-	850,000.00	2	1.700	-	-	-	-	-	-	-	-	-
2.72) CRANE, TRUCK MOUNTED, 100 TON ^(†)	A		-	-	-	-	-	-	1,551K	1	1.551	1,551K	1	1.551	-	-	-	1,551K	1	1.551
2.73) WINDOWS SERVER SYSTEM ^(†)	A		-	-	-	-	-	-	3,878K	1	3.878	-	-	-	-	-	-	-	-	-
2.74) TANK CLEANING VACUUM SYSTEM ^(†)	A		-	-	-	-	-	-	728,000.00	2	1.456	-	-	-	-	-	-	-	-	-
2.75) HIGH PRESSURE AIR COMPRESSOR ^(†)	A		-	-	-	-	-	-	450,000.00	1	0.450	-	-	-	-	-	-	-	-	-
2.76) 55K PSI ULTRA HIGH PRESSURE WATERJET ^(†)	A		-	-	-	-	-	-	400,000.00	1	0.400	-	-	-	-	-	-	-	-	-
2.77) SECURED NETWORK INFRASTRUCTURE ^(†)	A		-	-	-	-	-	-	-	-	-	2,040K	1	2.040	-	-	-	2,040K	1	2.040
2.78) VLS LASER CLADDING SYSTEM ^(†)	A		-	-	-	-	-	-	2,870K	1	2.870	-	-	-	-	-	-	-	-	-
2.79) BLAST BOOTH FLOOR #2 REPLACEMENT ^(†)	A		-	-	-	-	-	-	-	-	-	1,685K	1	1.685	-	-	-	1,685K	1	1.685
2.80) RAE SUPPORT STRUCTURES DD5 ^(†)	A		-	-	-	-	-	-	-	-	-	4,484K	2	8.967	-	-	-	4,484K	2	8.967
2.81) 50 TON CRAWLER ^(†)	A		-	-	-	-	-	-	-	-	-	4,000K	1	4.000	-	-	-	4,000K	1	4.000
2.82) LOCOMOTIVES ^(†)	A		-	-	-	-	-	-	-	-	-	1,500K	2	3.000	-	-	-	1,500K	2	3.000
2.83) WASTEWATER TREATMENT SYSTEM ^(†)	A		-	-	-	-	-	-	-	-	-	5,325K	1	5.325	-	-	-	5,325K	1	5.325
2.84) 1,250 TON FORGING PRESS WITH 6,000 LB MANIPULATOR ^(†)	A		-	-	-	-	-	-	-	-	-	9,500K	1	9.500	-	-	-	9,500K	1	9.500

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 14							P-1 Line Item Number / Title: 1445 / Operating Forces IPE								Aggregated Items Title: Operating Forces IPE					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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)
2.85) HYDROSTATIC TEST TANK ^(†)	A		-	-	-	-	-	-	-	-	-	4,800K	1	4.800	-	-	-	4,800K	1	4.800
2.86) HORIZONTAL TURNING CENTERS ^(†)	A		-	-	-	-	-	-	-	-	-	350,000.00	7	2.450	-	-	-	350,000.00	7	2.450
2.87) VERTICAL TURNING CENTER WITH Y AXIS ^(†)	A		-	-	-	-	-	-	-	-	-	3,306K	1	3.306	-	-	-	3,306K	1	3.306
2.88) TANK CLEANING SYSTEM ^(†)	A		-	-	-	-	-	-	-	-	-	777,142.86	7	5.440	-	-	-	777,142.86	7	5.440
2.89) Portal Crane Service Life Extension ^(†)	A		-	-	-	-	-	-	-	-	-	2,500K	2	5.000	-	-	-	2,500K	2	5.000
2.90) Emergency Diesel Generators - PSNS&IMF ^(†)	A		-	-	-	-	-	-	-	-	-	800,000.00	3	2.400	-	-	-	800,000.00	3	2.400
2.91) 175 TON HEAVY LIFT PORTAL CRANE ^(†)	A		-	-	-	-	-	-	-	-	-	40,000K	1	40.000	-	-	-	40,000K	1	40.000
2.92) REFUELING STORAGE ENCLOSURE DESIGN ^(†)	A		-	-	-	-	-	-	1,300K	1	1.300	-	-	-	-	-	-	-	-	-
2.93) REFUELING STORAGE ENCLOSURE ^(†)	A		-	-	-	-	-	-	-	-	-	13,000K	1	13.000	-	-	-	13,000K	1	13.000
2.94) REFUELING COMPLEX ^(†)	A		-	-	-	-	-	-	18,000K	1	18.000	-	-	-	-	-	-	-	-	-
2.95) HIGH DENSITY STORAGE SYSTEM ^(†)	A		-	-	-	-	-	-	-	-	-	9,000K	1	9.000	-	-	-	9,000K	1	9.000
Subtotal: 2) KN300: SHIPYARD CAPITAL INVESTMENT PROGRAM (CIP)			-	-	515.581	-	-	56.612	-	-	151.461	-	-	197.125	-	-	-	-	-	197.125
3) KN400: SHIP MAINTENANCE INVESTMENT PROGRAM																				
3.1) SHIP MAINTENANCE INVESTMENT PROGRAM	A		-	-	18.122	-	-	6.061	-	-	8.500	-	-	7.181	-	-	-	-	-	7.181
Subtotal: 3) KN400: SHIP MAINTENANCE INVESTMENT PROGRAM			-	-	18.122	-	-	6.061	-	-	8.500	-	-	7.181	-	-	-	-	-	7.181
4) KN504: Commander, U.S. Pacific Fleet (PACFLT)																				

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Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 14									P-1 Line Item Number / Title: 1445 / Operating Forces IPE									Aggregated Items Title: Operating Forces IPE					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total					
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)			
4.1) Boring, Drilling and Milling (BDM) Machine ^(†)	A		656,000.00	1	0.656	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
4.2) A-47 Gantry Crane ^(†)	A		1,681K	1	1.681	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
4.3) Planomiller (compact type) ^(†)	A		750,000.00	1	0.750	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
4.4) Hydraulic Press ^(†)	A		560,000.00	1	0.560	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
4.5) Abrasive Blast and Recovery System, X-71 ^(†)	A		895,000.00	1	0.895	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
4.6) Propeller Shaft Lathe ^(†)	A		-	-	-	6,134K	1	6.134	-	-	-	-	-	-	-	-	-	-	-	-			
4.7) Waterjet Cutting Machine ^(†)	A		761,000.00	1	0.761	-	-	-	460,000.00	1	0.460	-	-	-	-	-	-	-	-	-			
4.8) Scanning Electron Microscope (SEM) ^(†)	A		-	-	-	-	-	-	330,000.00	1	0.330	-	-	-	-	-	-	-	-	-			
4.9) Environmental Welding Chamber ^(†)	A		-	-	-	-	-	-	315,000.00	1	0.315	-	-	-	-	-	-	-	-	-			
4.10) Emergency Generator and Fuel Tank for Dry Docks ^(†)	A		-	-	-	-	-	-	392,500.00	2	0.785	-	-	-	-	-	-	-	-	-			
4.11) Inductively Coupled Plasma - Atomic Emission Spectrometer ^(†)	A		-	-	-	-	-	-	315,000.00	1	0.315	-	-	-	-	-	-	-	-	-			
4.12) Power Press Brake ^(†)	A		-	-	-	-	-	-	425,000.00	2	0.850	-	-	-	-	-	-	-	-	-			
4.13) Blast Cleaning and Finishing System ^(†)	A		-	-	-	-	-	-	700,000.00	1	0.700	-	-	-	-	-	-	-	-	-			
4.15) Balancing Machine, Horizontal ^(†)	A		-	-	-	-	-	-	289,000.00	1	0.289	-	-	-	-	-	-	-	-	-			
4.16) Self-Propelled Modular Transporter ^(†)	A		-	-	-	-	-	-	-	-	-	5,955K	1	5.955	-	-	-	5,955K	1	5.955			
4.17) Demineralizer ^(†)	A		-	-	-	-	-	-	-	-	-	600,000.00	1	0.600	-	-	-	600,000.00	1	0.600			
Subtotal: 4) KN504: Commander, U.S. Pacific Fleet (PACFLT)			-	-	5.303	-	-	6.134	-	-	4.044	-	-	6.555	-	-	-	-	-	6.555			
5) KN800: INTEGRATED CONDITION ASSESSMENT SYSTEM (ICAS) NEW INSTALL																							

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Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 14						P-1 Line Item Number / Title: 1445 / Operating Forces IPE						Aggregated Items Title: Operating Forces IPE								
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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)
5.1) INTEGRATED CONDITION ASSESSMENT SYSTEM (ICAS)	A		-	-	9.675	-	-	0.662	-	-	0.748	-	-	2.185	-	-	-	-	-	2.185
Subtotal: 5) KN800: INTEGRATED CONDITION ASSESSMENT SYSTEM (ICAS) NEW INSTALL			-	-	9.675	-	-	0.662	-	-	0.748	-	-	2.185	-	-	-	-	-	2.185
6) KN900: INTEGRATED CONDITION ASSESSMENT SYSTEM (ICAS) TECH REFRESH																				
6.1) INTEGRATED CONDITION ASSESSMENT SYSTEM (ICAS)	A		-	-	12.777	-	-	1.492	-	-	1.588	-	-	1.580	-	-	-	-	-	1.580
Subtotal: 6) KN900: INTEGRATED CONDITION ASSESSMENT SYSTEM (ICAS) TECH REFRESH			-	-	12.777	-	-	1.492	-	-	1.588	-	-	1.580	-	-	-	-	-	1.580
7) KN505 - Joint Ops Center- PACOM ⁽²⁾																				
7.1) Joint Operations Center	A		-	-	2.600	-	-	0.960	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 7) KN505 - Joint Ops Center- PACOM			-	-	2.600	-	-	0.960	-	-	-	-	-	-	-	-	-	-	-	-
8) KN201: NAVY MARITIME MAINTENANCE ENTERPRISE SOLUTION TECHNICAL REFRESH (NMMES-TR)																				
8.1) NAVY MARITIME MAINTENANCE ENTERPRISE SOLUTION TECHNICAL REFRESH	A		-	-	-	-	-	-	-	-	1.200	-	-	7.200	-	-	-	-	-	7.200
Subtotal: 8) KN201: NAVY MARITIME MAINTENANCE ENTERPRISE SOLUTION TECHNICAL REFRESH (NMMES-TR)			-	-	0.000	-	-	-	-	-	1.200	-	-	7.200	-	-	-	-	-	7.200
Total			-	-	571.753	-	-	71.921	-	-	191.541	-	-	225.181	-	-	-	-	-	225.181

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) Portal crane acquisition budgets are based on the negotiated costs of these 25 ton portal cranes in the IDIQ acquisition contract. The first (FY18) PSNS&IMF Bremerton site crane includes site-specific fitup, CDRL deliverables, acceptance testing, and engineering efforts and associated costs that only apply to the first Bremerton site acquisition and are not repeated for the second (FY19) and later Bremerton site acquisitions.

(2) This is a Classified Program. Time-Sensitive Targeting (TST) cell requires OPN equipment in the USPACOM J3 Joint Fires Element (JFE) and Joint Operations Center (JOC). OPN funding will allow personnel to coordinate joint fires effects from emerging threats across multiple sources and components.

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Exhibit P-5a, Procurement History and Planning: PB 2019 Navy									Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 14			P-1 Line Item Number / Title: 1445 / Operating Forces IPE						Aggregated Items: Operating Forces IPE			
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) KN200: NAVY MARITIME MAINTENANCE ENTERPRISE SOLUTION SUSTAINMENT												
1.2) eTWD NEDC Hardware		2018	TBD / New MFG - Loc	C / TBD	DISA	Feb 2018	Nov 2018	1	8,000K	Y		Nov 2017
1.3) MSE 1.1 Alt. Production Site		2018	TBD / New MFG - Loc	C / TBD	DISA	Nov 2017	May 2018	1	5,000K	Y		Oct 2017
1.4) Product Data Management SW		2018	TBD / New MFG - Loc	C / TBD	DISA	Mar 2018	Jun 2018	1	9,000K	Y		Nov 2017
1.5) Mobility Solutions		2018	TBD / TBD	C / TBD	DISA	Jan 2018	Jan 2018	1	1,000K	Y		
1.6) RFIDs		2018	TBD / New MFG - Loc	C / TBD	DISA	Jan 2018	Jul 2018	1	1,000K	Y		
1.6) RFIDs		2019	TBD / New MFG - Loc	C / TBD	DISA	Jan 2019	Jul 2019	1	955,000.00	Y		
1.7) LIMS		2019	New MFG - Name / New MFG - Loc	TBD	DISA	Oct 2018	Jan 2019	1	900,000.00	Y		Sep 2018
1.8) Enterprise Data Analytics		2019	TBD / TBD	C / FP	DISA	Oct 2018	Jan 2019	1	1,000K	Y		Oct 2018
1.9) COTS Software		2019	TBD / TBD	C / TBD	DISA	Feb 2019	May 2019	1	500,000.00	N	Aug 2018	Dec 2018
2) KN300: SHIPYARD CAPITAL INVESTMENT PROGRAM (CIP)												
2.2) NETWORK STORAGE & BACKUP		2016	TBD / tbd	C / TBD	DISA	Jan 2016	Jan 2017	1	3,518K	Y		
2.3) CVN 68/78 CAMEL SYSTEM		2016	tbd / tbd	C / TBD	DLA	Apr 2016	Apr 2017	1	8,050K	Y		
2.4) VIRGINIA CLASS PROPULSOR HANDLING SYSTEM		2016	TBD / tbd	C / TBD	DLA	Apr 2016	Apr 2017	1	6,300K	Y		
2.5) VIRGINIA CLASS BOW DOME RING HANDLING SYSTEM		2016	TBD / tbd	C / TBD	DLA	Apr 2016	Apr 2017	1	800,000.00	Y		
2.6) VIRGINIA CLASS PROPULSOR ENCLOSURE		2016	TBD / tbd	C / TBD	NAVFAC	Jun 2016	Jun 2017	1	8,022K	Y		Feb 2016
2.7) PORTAL CRANE, 60 TON, MODERNIZATION		2016	ADVANCED CRANE TECHNOLOGIES / Reading, PA	C / IDIQ	NCC / NAVFAC FE	Dec 2015	Dec 2016	1	2,458K	Y		
2.8) WINDOWS SERVER TECHNICAL REFRESH		2016	TBD / tbd	C / TBD	DISA	Jan 2016	Sep 2016	1	3,400K	Y		
2.9) INFORMATION TECHNOLOGY DATA STORAGE REFRESH		2016	TBD / tbd	C / TBD	DISA	Jan 2016	Sep 2016	1	1,540K	Y		
2.10) DIESEL GENERATORS, EMERGENCY		2016	TBD / tbd	C / TBD	DLA	Apr 2016	Apr 2017	6	664,166.67	Y		
2.11) MODERNIZE 60 TON PORTAL CRANES		2017	ADVANCED CRANE TECHNOLOGIES / Reading, PA	C / IDIQ	NCC / NAVFAC FE	Jan 2017	Jan 2018	2	2,364K	Y		Oct 2016
2.12) EMERGENCY DIESEL GENERATORS		2017	TBD / tbd	C / TBD	DLA	Apr 2017	Apr 2018	2	785,000.00	Y		
2.13) 25 TON PORTAL CRANE - IMF BANGOR ^(†)		2017	Konecranes / New Berlin, WI	C / IDIQ	NCC / NAVFAC FE	Dec 2016	Dec 2017	1	13,814K	Y		
2.14) DRY DOCK #1 DEFUELING COMPLEX ^(†)		2017	TBD / TBD	C / TBD	NAVFAC	Apr 2017	Apr 2018	1	26,500K	Y		Dec 2016

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Exhibit P-5a, Procurement History and Planning: PB 2019 Navy									Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 14				P-1 Line Item Number / Title: 1445 / Operating Forces IPE					Aggregated Items: Operating Forces IPE			
Item Number / Title [DODIC]	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
2.15) DRY DOCK #2 MATERIAL HIGHWAY ^(†)		2017	TBD / TBD	C / TBD	NAVFAC	May 2017	May 2018	1	10,000K	Y		Jan 2017
2.16) VIRGINIA Class Vertical Launch System Platform		2018	TBD / TBD	C / TBD	DLA	Jan 2018	Jan 2019	1	500,000.00	Y		
2.17) Hydraulic Component Test System		2018	TBD / TBD	C / TBD	DLA	Jun 2018	Jun 2019	1	2,525K	Y		
2.18) Dry Dock 1 Reactor Access Enclosure System and Support Structure		2018	TBD / TBD	C / TBD	NAVFAC	Mar 2018	Mar 2019	1	7,300K	Y		Oct 2017
2.19) VIRGINIA Class Bow Dome Ring		2018	TBD / TBD	C / TBD	DLA	Jan 2018	Jan 2019	1	1,380K	Y		
2.19) VIRGINIA Class Bow Dome Ring		2019	TBD / TBD	C / TBD	DLA	Oct 2018	Oct 2019	1	1,380K	Y		
2.20) 7000 Gallon Waste Water Collection Tanks		2018	TBD / TBD	C / TBD	DLA	Apr 2018	Apr 2019	1	1,195K	Y		
2.21) Portable Paint Room		2019	tbd / tbd	C / TBD	DLA	Jan 2019	Jan 2020	1	650,000.00	Y		
2.22) Relief Valve Test Platform		2018	TBD / tbd	C / TBD	DLA	Apr 2018	Apr 2019	1	2,415K	Y		
2.23) VIRGINIA Class Sail Racetrack Platform		2018	TBD / tbd	C / TBD	DLA	Feb 2018	Feb 2019	1	478,000.00	Y		
2.24) Pure Water Delivery Trailer		2018	TBD / tbd	C / TBD	DLA	Apr 2018	Apr 2019	2	528,500.00	Y		
2.25) Reactor Access Enclosure Training Base Design		2019	TBD / tbd	C / TBD	** NO PCO **	Jun 2019	Jun 2020	1	390,000.00	N	Jun 2018	
2.26) Modernize 60 Ton Portal Cranes - PSNS&IMF		2018	ADVANCED CRANE TECHNOLOGIES / Reading, PA	C / IDIQ	NCC / NAVFAC FE	Nov 2017	Aug 2018	2	3,025K	Y		
2.27) VIRGINIA Class VIRGINIA Payload Tube (VPT) Platform		2018	TBD / tbd	C / TBD	DLA	Feb 2018	Feb 2019	1	1,300K	Y		
2.28) Submarine Maintenance Enclosure		2018	TBD / tbd	C / TBD	NAVFAC	Apr 2018	Apr 2019	1	4,500K	Y		Jan 2018
2.29) Emergency Diesel Generators		2018 ⁽³⁾	tbd / tbd	C / TBD	DLA	Jan 2018	Jan 2020	12	813,416.67	Y		
2.30) Portal Crane ^{(1)(†)}		2018	Konecranes / New Berlin, WI	C / IDIQ	NCC / NAVFAC FE	Nov 2017	Nov 2019	1	18,235K	Y		
2.30) Portal Crane ^{(1)(†)}		2019	Konecranes / New Berlin, WI	C / TBD	NCC / NAVFAC FE	Nov 2018	Nov 2020	1	15,924K	Y		
2.31) VIRGINIA Class Propulsor Handling System		2018	TBD / tbd	C / TBD	DLA	Jan 2018	Jan 2019	1	8,991K	Y		
2.32) Modernize 60 Ton Portal Crane - NNSY		2018	ADVANCED CRANE TECHNOLOGIES / Reading, PA	C / IDIQ	NCC / NAVFAC FE	Nov 2017	Jun 2018	1	3,000K	Y		
2.33) Seawater Acid Flush System		2019	TBD / tbd	C / TBD	DLA	Jan 2019	Jan 2020	1	1,600K	Y		
2.34) Submarine Camel System		2019	TBD / tbd	C / TBD	DLA	Jan 2019	Jan 2020	1	1,300K	Y		

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Exhibit P-5a, Procurement History and Planning: PB 2019 Navy								Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 14				P-1 Line Item Number / Title: 1445 / Operating Forces IPE				Aggregated Items: Operating Forces IPE				
Item Number / Title [DODIC]	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
2.35) CNC Shaft Lathe ^(†)		2019	TBD / tbd	C / TBD	DLA	Jun 2019	Jun 2020	2	15,000K	Y		
2.36) Defueling Complex - Design		2019	Puget Sound NSY / Bremerton, WA	C / TBD	puget sound NSY	Oct 2018	Oct 2019	1	3,500K	Y		
2.37) Dual Media Discharge Enclosures - NNSY		2018	TBD / tbd	C / TBD	DLA	Jan 2018	Jan 2019	2	920,000.00	Y		
2.38) Vertical Reciprocating Conveyor		2019	TBD / tbd	C / TBD	DLA	Jun 2019	Jun 2020	1	3,000K	Y		
2.39) Dual Media Discharge Complex		2018	TBD / tbd	C / TBD	DLA	Jan 2018	Jan 2019	1	2,875K	Y		
2.40) Modify M-140 Enclosures-Design		2019	Puget Sound NSY / Bremerton, WA	C / TBD	puget sound NSY	Oct 2018	Oct 2019	1	300,000.00	Y		
2.41) NETWORK DATA STORAGE CLUSTER		2018	TBD / tbd	C / TBD	DISA	Jan 2018	Jul 2018	1	900,000.00	Y		
2.42) Local Traffic Manager		2018	TBD / TBD	C / TBD	DISA	Jan 2018	Jan 2019	1	600,000.00	Y		
2.43) Horizontal Boring Mill		2018	tbd / tbd	C / TBD	dla	Apr 2018	Apr 2019	1	3,000K	Y		
2.44) CRANE, TRUCK MOUNTED, 300 TON		2018	tbd / tbd	C / TBD	NAVFAC	Apr 2018	Apr 2019	1	3,482K	Y		
2.45) LATHE, TURNING CENTER, 6"		2019	TBD / tbd	C / TBD	** NO PCO **	Jun 2019	Jun 2020	1	550,000.00	Y		
2.46) Information Technology Storage System		2018	TBD / tbd	C / TBD	DISA	Jan 2018	Jan 2019	1	2,236K	Y		
2.47) Spherical Grinding Machine		2019	tbd / tbd	C / TBD	** NO PCO **	Apr 2019	Apr 2020	1	1,524K	N	Mar 2018	
2.48) High Pressure Air Compressor		2019	TBD / tbd	C / TBD	** NO PCO **	Jan 2019	Jan 2020	1	350,000.00	Y		
2.49) Freeze Seal Compressor Systems		2018	tbd / tbd	C / TBD	DLA	Apr 2018	Apr 2019	2	545,000.00	Y		
2.50) Steam Test Stand - Design		2019	tbd / tbd	C / TBD	NAVFAC	Apr 2019	Apr 2020	1	2,500K	Y		
2.51) Plasma Cutting System		2019	TBD / tbd	C / TBD	** NO PCO **	Apr 2019	Apr 2020	1	2,150K	Y		
2.52) Reactor Access Enclosure (RAE) Support Tower		2019	TBD / tbd	C / TBD	DLA	Jun 2019	Jun 2020	1	1,641K	Y		
2.53) WINDOWS SERVER VIRTUALIZATION PHASE II		2018	tbd / tbd	C / TBD	DISA	Jan 2018	Jul 2018	1	3,800K	Y		
2.54) UNIX SERVERS		2018	TBD / tbd	C / TBD	DISA	Jan 2018	Jul 2018	1	2,903K	Y		
2.55) Switch and Router System		2019	TBD / tbd	C / TBD	** NO PCO **	Jan 2019	Jul 2019	1	1,852K	Y		
2.56) Tool Grinding Machine		2018	TBD / tbd	C / TBD	DLA	Apr 2018	Apr 2019	1	1,110K	Y		
2.57) SYLAN NETWORK INFRASTRUCTURE UPGRADE		2018	TBD / TBD	C / TBD	DISA	Jan 2018	Jan 2019	1	5,200K	Y		

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Exhibit P-5a, Procurement History and Planning: PB 2019 Navy								Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 14				P-1 Line Item Number / Title: 1445 / Operating Forces IPE				Aggregated Items: Operating Forces IPE				
Item Number / Title [DODIC]	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
2.58) NFPC 25/50 TON FURNANCE CONTROL MODERNIZATION		2018	TBD / TBD	C / TBD	DLA	Jan 2018	Jan 2019	1	550,000.00	Y		
2.59) NFPC SU-8 REPLACEMENT		2018	TBD / TBD	C / TBD	DLA	Apr 2018	Apr 2019	1	4,905K	Y		
2.60) REACTOR ACCESS ENCLOSURE #4		2018	TBD / TBD	C / TBD	DLA	Feb 2018	Feb 2019	1	3,675K	Y		
2.61) NFPC LINOCURE MIXER REPLACEMENT		2018	TBD / TBD	C / TBD	DLA	Jan 2018	Jan 2019	1	955,000.00	Y		
2.62) VERTICAL TURRET CENTER 63"		2018	TBD / TBD	C / TBD	DLA	Apr 2018	Apr 2019	1	1,350K	Y		
2.63) SUB ARC WELDING SYSTEM		2018	TBD / TBD	C / TBD	DLA	Mar 2018	Mar 2019	1	720,000.00	Y		
2.64) HYDROSTATIC TEST STATION		2019	TBD / TBD	C / TBD	** NO PCO **	Mar 2019	Mar 2020	1	2,050K	N	Jun 2018	
2.65) VERTICAL TURNING CENTER		2019	TBD / TBD	C / TBD	** NO PCO **	Mar 2019	Mar 2020	1	1,500K	Y		
2.66) RAE SUPPORT STRUCTURE DD1		2018	TBD / TBD	C / TBD	DLA	Feb 2018	Feb 2019	1	3,450K	Y		
2.67) CASCON COMMUNICATIONS SYSTEM		2018	TBD / TBD	C / TBD	DLA	Jan 2018	Jan 2019	5	820,000.00	Y		
2.68) FORKLIFTS		2018	TBD / TBD	C / TBD	navsup wss	Mar 2018	Mar 2019	14	62,000.00	Y		
2.69) CRANE, MOBILE, 50T		2018	TBD / TBD	C / TBD	NCC / NAVFAC FE	Feb 2018	Feb 2019	2	780,000.00	Y		
2.70) VERTICAL TURNING CENTERS		2019	TBD / TBD	C / TBD	** NO PCO **	Mar 2019	Mar 2020	2	1,750K	Y		
2.71) CRANE, MOBILE, 55T		2018	TBD / TBD	C / TBD	NCC / NAVFAC FE	Feb 2018	Feb 2019	2	850,000.00	Y		
2.72) CRANE, TRUCK MOUNTED, 100 TON		2018	TBD / TBD	C / TBD	NCC / NAVFAC FE	Feb 2018	Feb 2019	1	1,551K	Y		
2.72) CRANE, TRUCK MOUNTED, 100 TON		2019	TBD / TBD	C / TBD	NCC / NAVFAC FE	Oct 2018	Oct 2019	1	1,551K	Y		
2.73) WINDOWS SERVER SYSTEM		2018	TBD / TBD	C / TBD	DISA	Jan 2018	Jan 2019	1	3,878K	Y		
2.74) TANK CLEANING VACUUM SYSTEM		2018	TBD / TBD	C / TBD	DLA	Mar 2018	Mar 2019	2	728,000.00	Y		
2.75) HIGH PRESSURE AIR COMPRESSOR		2018	TBD / TBD	C / TBD	DLA	Jan 2018	Sep 2018	1	450,000.00	Y		
2.76) 55K PSI ULTRA HIGH PRESSURE WATERJET		2018	TBD / TBD	C / TBD	DLA	Feb 2018	Feb 2019	1	400,000.00	Y		
2.77) SECURED NETWORK INFRASTRUCTURE		2019	TBD / TBD	C / TBD	** NO PCO **	Jan 2019	Oct 2019	1	2,040K	Y		

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Exhibit P-5a, Procurement History and Planning: PB 2019 Navy									Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 14				P-1 Line Item Number / Title: 1445 / Operating Forces IPE					Aggregated Items: Operating Forces IPE			
Item Number / Title [DODIC]	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
2.78) VLS LASER CLADDING SYSTEM		2018	TBD / TBD	C / TBD	DLA	Mar 2018	Mar 2019	1	2,870K	Y		
2.79) BLAST BOOTH FLOOR #2 REPLACEMENT		2019	TBD / TBD	C / TBD	DLA	Mar 2019	Mar 2020	1	1,685K	Y		
2.80) RAE SUPPORT STRUCTURES DD5		2019	TBD / TBD	C / TBD	DLA	Mar 2019	Mar 2020	2	4,484K	Y		
2.81) 50 TON CRAWLER		2019	TBD / TBD	C / TBD	NAVFAC	Apr 2019	Apr 2020	1	4,000K	Y		
2.82) LOCOMOTIVES		2019	TBD / TBD	C / TBD	NAVFAC	Apr 2019	Apr 2020	2	1,500K	Y		
2.83) WASTEWATER TREATMENT SYSTEM		2019	TBD / TBD	C / TBD	NAVFAC	Mar 2019	Mar 2020	1	5,325K	Y		
2.84) 1,250 TON FORGING PRESS WITH 6,000 LB MANIPULATOR		2019	TBD / TBD	C / TBD	DLA	Apr 2019	Aug 2020	1	9,500K	Y		
2.85) HYDROSTATIC TEST TANK		2019	TBD / TBD	C / TBD	DLA	Feb 2019	Feb 2020	1	4,800K	Y		
2.86) HORIZONTAL TURNING CENTERS		2019	TBD / TBD	C / TBD	DLA	Mar 2019	Mar 2020	7	350,000.00	Y		
2.87) VERTICAL TURNING CENTER WITH Y AXIS		2019	TBD / TBD	C / TBD	DLA	Mar 2019	May 2020	1	3,306K	Y		
2.88) TANK CLEANING SYSTEM		2019	TBD / TBD	C / TBD	DLA	Jan 2019	Jan 2020	7	777,142.86	Y		
2.89) Portal Crane Service Life Extension		2019	ADVANCED CRANE TECHNOLOGIES / Reading, PA	C / IDIQ	NCC / NAVFAC FE	Nov 2018	Jun 2019	2	2,500K	Y		
2.90) Emergency Diesel Generators - PSNS&IMF		2019	TBD / TBD	C / TBD	DLA	Jan 2019	Jan 2020	3	800,000.00	Y		
2.91) 175 TON HEAVY LIFT PORTAL CRANE ^(†)		2019	TBD / tbd	C / FFP	NCC / NAVFAC FE	Jan 2019	Jan 2021	1	40,000K	N	Mar 2018	
2.92) REFUELING STORAGE ENCLOSURE DESIGN		2018	tbd / tbd	C / TBD	NAVFAC	Jan 2018	Jul 2018	1	1,300K	Y		Oct 2017
2.93) REFUELING STORAGE ENCLOSURE ^(†)		2019	TBD / TBD	C / TBD	NAVFAC	Mar 2019	Mar 2020	1	13,000K	N	Jul 2018	
2.94) REFUELING COMPLEX ^(†)		2018	TBD / tbd	C / TBD	NAVFAC	Apr 2018	Apr 2019	1	18,000K	Y		
2.95) HIGH DENSITY STORAGE SYSTEM		2019	tbd / tbd	C / TBD	NAVFAC	Feb 2019	Feb 2020	1	9,000K	N	Jun 2018	
4) KN504: Commander, U.S. Pacific Fleet (PACFLT)												
4.1) Boring, Drilling and Milling (BDM) Machine		2016	TBD / TBD	C / TBD	DLA	Sep 2017	Sep 2018	1	656,000.00	Y		
4.2) A-47 Gantry Crane		2016	TBD / TBD	C / TBD	NCC / NAVFAC FE	Sep 2018	Sep 2019	1	1,681K	Y		Feb 2017
4.3) Planomiller (compact type)		2016	TBD / TBD	C / TBD	DLA	Aug 2017	Aug 2018	1	750,000.00	Y		
4.4) Hydraulic Press		2016	TBD / TBD	C / TBD	DLA	Aug 2017	Sep 2018	1	560,000.00	Y		

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Exhibit P-5a, Procurement History and Planning: PB 2019 Navy								Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 14				P-1 Line Item Number / Title: 1445 / Operating Forces IPE				Aggregated Items: Operating Forces IPE				

Item Number / Title [DODIC]	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
4.5) Abrasive Blast and Recovery System, X-71		2016	TBD / TBD	C / TBD	NAVSUP FLC Puget	Sep 2017	Sep 2018	1	895,000.00	Y		Mar 2017
4.6) Propeller Shaft Lathe		2017	TBD / TBD	C / FP	DLA	Dec 2018	Dec 2020	1	6,134K	Y		
4.7) Waterjet Cutting Machine		2016	TBD / TBD	C / TBD	DLA	Aug 2017	Dec 2018	1	761,000.00	Y		
4.7) Waterjet Cutting Machine		2018	TBD / TBD	C / TBD	DLA	Jul 2018	Jul 2019	1	460,000.00	Y		
4.8) Scanning Electron Microscope (SEM)		2018	TBD / TBD	C / TBD	NAVSUP FLC YOKOSUKA	Mar 2018	Mar 2019	1	330,000.00	N	Oct 2017	Oct 2017
4.9) Environmental Welding Chamber		2018	TBD / TBD	C / TBD	NAVSUP FLC YOKOSUKA	Jun 2018	Jun 2019	1	315,000.00	N	Oct 2017	Oct 2017
4.10) Emergency Generator and Fuel Tank for Dry Docks		2018	TBD / TBD	C / TBD	NAVFAC FE	Sep 2018	Jan 2020	2	392,500.00	Y		Oct 2017
4.11) Inductively Coupled Plasma - Atomic Emission Spectrometer		2018	TBD / TBD	C / TBD	NAVSUP FLC YOKOSUKA	Apr 2018	Apr 2019	1	315,000.00	N	Oct 2017	Oct 2017
4.12) Power Press Brake		2018	TBD / TBD	C / TBD	DLA	May 2018	May 2019	2	425,000.00	N	Oct 2017	
4.13) Blast Cleaning and Finishing System		2018	TBD / TBD	C / TBD	DLA	May 2018	May 2019	1	700,000.00	N	Oct 2017	
4.15) Balancing Machine, Horizontal		2018	TBD / TBD	C / TBD	DLA	Aug 2018	Aug 2019	1	289,000.00	N	Oct 2017	
4.16) Self-Propelled Modular Transporter		2019	TBD / TBD	C / TBD	NAVSUP FLC YOKOSUKA	Sep 2019	Sep 2021	1	5,955K	N	Dec 2018	
4.17) Demineralizer		2019	TBD / TBD	C / TBD	NAVSUP FLC YOKOSUKA	Sep 2019	Sep 2020	1	600,000.00	N	Oct 2018	Dec 2018

^(†) indicates the presence of a P-21

Footnotes:

⁽³⁾ PHNSY and NNSY

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Exhibit P-21, Production Schedule: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 14	P-1 Line Item Number / Title: 1445 / Operating Forces IPE	Aggregated Items: Operating Forces IPE

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											
2) KN300: SHIPYARD CAPITAL INVESTMENT PROGRAM (CIP)																																									
2.13) 25 TON PORTAL CRANE - IMF BANGOR																																									
	4	2017	NAVY	1	0	1	-	-	1																								0								
2.14) DRY DOCK #1 DEFUELING COMPLEX																																									
	5	2017	NAVY	1	0	1	-	-	-	-	-	-	1																			0									
2.15) DRY DOCK #2 MATERIAL HIGHWAY																																									
	6	2017	NAVY	1	0	1	-	-	-	-	-	-	-	1																			0								
2.30) Portal Crane ⁽¹⁾																																									
	7	2018	NAVY	1	0	1		A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1									
	7	2019	NAVY	1	0	1															A -	-	-	-	-	-	-	-	-	-	-	-	-	-	1						
2.35) CNC Shaft Lathe																																									
	8	2019	NAVY	2	0	2																										A -	-	-	-	-	2				
2.91) 175 TON HEAVY LIFT PORTAL CRANE																																									
	9	2019	NAVY	1	0	1																			A -	-	-	-	-	-	-	-	-	-	-	-	1				
2.93) REFUELING STORAGE ENCLOSURE																																									
	10	2019	NAVY	1	0	1																										A -	-	-	-	-	-	-	-	-	1
2.94) REFUELING COMPLEX																																									
	11	2018	NAVY	1	0	1								A -	-	-	-	-	-	-	-	-	-	-	-	-	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 2019 Navy			Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 14		P-1 Line Item Number / Title: 1445 / Operating Forces IPE			Aggregated Items: Operating Forces IPE

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
		MSR For 2019	1-8-5 For 2019	MAX For 2019	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	Konecranes - New Berlin, WI				0	2	12	14	0	0	0	0
2	TBD - TBD				0	6	12	18	0	0	0	0
3	TBD - TBD				0	7	12	19	0	0	0	0
4	Konecranes - New Berlin, WI				0	1	24	25	0	1	24	25
5	TBD - tbd				0	8	12	20	0	0	12	12
6	TBD - tbd				12	3	24	27	0	0	0	0
7	TBD - TBD				3	5	12	17	0	0	0	0
8	TBD - tbd				6	6	12	18	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 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 15: Other Ship Support							P-1 Line Item Number / Title: 1480 / Nuclear Alterations					
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	759.208	172.718	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	931.926
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	759.208	172.718	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	931.926
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	759.208	172.718	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	931.926
<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 details of this program are classified CONFIDENTIAL and are submitted to Congress annually in the classified budget justification books. This line item has been consolidated into line item 1020 beginning in FY18.												

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy							Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 15: Other Ship Support						P-1 Line Item Number / Title: 1480 / Nuclear Alterations				
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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	Nuclear Alterations				- / 759.208	- / 172.718	- / -	- / -	- / -	- / -
P-40	Total Gross/Weapon System Cost				- / 759.208	- / 172.718	- / 0.000	- / 0.000	- / 0.000	- / 0.000
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										

Justification:

The details of this program are classified CONFIDENTIAL and are submitted to Congress annually in the classified budget justification books. Beginning in FY 18, funding previously requested in this line item is now requested under OPN line item 1020, Reactor Components.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 15						P-1 Line Item Number / Title: 1480 / Nuclear Alterations									Aggregated Items Title: Nuclear Alterations					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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) New P40A Grouping																				
1.1) Nuclear Alterations	A		-	-	759.208	-	-	172.718	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) New P40A Grouping			-	-	759.208	-	-	172.718	-	-	-	-	-	-	-	-	-	-	-	-
Total			-	-	759.208	-	-	172.718	-	-	-	-	-	-	-	-	-	-	-	-

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

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 15: Other Ship Support							P-1 Line Item Number / Title: 1600 / LCS Common Mission Modules 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: 374												
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	423.773	14.670	34.666	46.732	0.000	46.732	51.553	36.657	55.776	29.787	734.284	1,427.898
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	423.773	14.670	34.666	46.732	0.000	46.732	51.553	36.657	55.776	29.787	734.284	1,427.898
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	423.773	14.670	34.666	46.732	0.000	46.732	51.553	36.657	55.776	29.787	734.284	1,427.898
<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>)	-	0.061	0.118	0.068	-	0.068	0.020	-	-	0.021	Continuing	Continuing
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The FY 2019 funding request was reduced by \$.072 million to reflect the Department of Navy's effort to support the Office of Management and Budget directed reforms for Efficiency and Effectiveness that include a lean, accountable, more efficient government.

Littoral Combat Ship (LCS) focused mission packages provide the operational commander with capabilities to perform littoral mine countermeasures (MCM) operations, a detect-to-engage capability to counter small boat threats (Surface Warfare (SUW)), and a detect-to-engage capability to counter enemy submarines (Anti-Submarine Warfare (ASW)). A mission package (MP) is a combination of warfare mission modules (MM) with specialized crew, support equipment, and vehicles, including embarked manned helicopters and unmanned aircraft and maritime systems. Mission Modules are packaged in a modular fashion so that they can be quickly swapped in and out pier side on any LCS platform.

This BLI funds the procurement of MCM and SUW MP support containers and equipment that is common across the mission packages (Mission Package Computing Environment (MPCE), Technology Refresh of the Multi-Vehicle Communications System (MVCS), and Training Equipment).

The Common Mission Modules Equipment (Line Item Number 1600) by itself or support containers by themselves do not comprise a MP and are only deployable as part of a Mission Module (MM). A MM is deployable and capable of meeting its focused mission requirements on an LCS only when it includes the full complement of Common Mission Modules Equipment combined with all the required mission systems.

Other Related Budgets: BLIs: OPN 1601, OPN 1602, OPN 1603, OPN 4248, OPN 2622, OPN 2624, WPN 4221, WPN 4225, RDT&E 0603596N

[P40A / LM008 - MPCE]: Commercial Off The Shelf (COTS)- Based Common Computing environment will support legacy Mission Package (MP) Command & Control (C2) applications and transition to Modular Open Systems Approach (MOSA) & Navy Open Architecture Computing Environment (OACE). It also provides a common computing environment to support the execution of Mission Package Application Software (MPAS), the shipboard tactical software associated with each mission package that enables execution of its focused mission. Includes installation and checkout on-board the seaframe. In order to support the MPCE Sonar Signal Processing of the Escort Mission Module (EMM), the MPCE needs to be augmented to provide additional processing capabilities. FY 2019 includes procurement of MPCE Sonar Signal Process equipment racks. These equipment racks will be co-located with the MPCE processing racks. In addition, a Mission Package Portable Control Station (MPPCS) to support pre-deployment checkouts, to support shore-based and vessels of opportunity operations of mission packages and off-board vehicles.

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 15: Other Ship Support		P-1 Line Item Number / Title: 1600 / LCS Common Mission Modules 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: 374		
[P40A / LM012 - TRAINING EQUIPMENT]: Procurement of LCS Mission Module training systems to train LCS crews in the safe and effective use of assigned equipment at LCS Training Facilities (LTF) located in San Diego and Mayport. LTF includes tactical watch team training using Common Mission Package Trainer (CMPT) integrated with seaframe Combat Management System (CMS) trainers, a replication of LCS mission bays where LCS MM training systems are moved in and out of the Launch and Recovery (L&R) footprint to train all crews in the safe movement of systems, and revalidate key maintenance skills in the confined mission bay environment. Integrated Team Training (ITT) uses the CMPT trainer, with two CMPTs delivered to LCS-1 ITT trainer and LCS-2 ITT trainer in San Diego. CMPT#3 for LCS-1 ITT trainer in Mayport will install in FY2018 and commence operations in FY2018. CMPT#4 procurement required to support second San Diego LCS-2 trainer with installation in FY2018. MCM and SUW integrated team training commenced at San Diego in FY12 and will commence for SUW only in Mayport in FY2018. MCM ITT capability planned in Mayport by FY2019. CMPTs qualify individuals in a team environment (Train to Qualify) and are also used to certify watch teams (Train to Certify) during off hull periods at LTF. Each mission area will be delivering training systems as follows: MCM: All unmanned vehicles, sensors, and systems in support containers to demonstrate L&R and maintenance tasks. An Integrated virtual shipboard environment (IVSE) (virtual reality) allow sailors to learn and demonstrate crane operator and system remote operations L&R team coordination. Procurements are for incremental system delivery and support formal training that has commenced in San Diego and will commence in Mayport in FY2019. SUW: A Mk-46 gun in barrette on a multi-function adapter demonstrates GMM critical maintenance and ammunition loading tasks. MSM AEL equipment is used to support VBSS certification and exercise related shipboard evolutions such as "detainee handling." SSMM module components are used to demonstrate onload tasks. Mission Package Training System (MPTS) is a NAWC TSD PORTS Architecture based training system used in training SUW operators and maintaining gun and missile operator proficiency. Procurements are for incremental system delivery and support formal training that will commence in San Diego and Mayport in FY2020. ASW: Integrated Virtual Reality Environment (IVSE) demonstrates ASW system L&R tasks. Procurements are for incremental system delivery and support formal training that will commence in San Diego and Mayport in FY2020. The LCS MM program is also procuring training systems for installation at other shore locations as follows: Mine Warfare Training Center (MWTC) PT Loma, CA: Training for senior ship and MCM watch standers at Pt Loma, CA. Individuals are trained in MCM mission planning, execution, post mission analysis and re-planning (computer classroom) at MWTC. This course has commenced formal training at Mine Warfare training Center in San Diego (single sited). Center for Surface Combat Systems Detachment Dam Neck, VA: Fire Controlman (FC) and Gunners Mate (GM) training at Dam Neck VA. MK-50 Modular Gun Weapons System (MGWS) Operations and Maintenance difference trainer co-located with the MK-46 Operations and Maintenance trainer. SSMM Operations and Maintenance trainer for technician training at CSCS detachment Dam Neck VA. Course will teach SSMM Console Operator (SCO) actions, and SSMM Weapons Zone maintenance and loading/unloading tasks. MK-50 course formal training commenced in FY2015, and SSMM is expected to commence in FY2019. Fleet ASW Training Center San Diego, CA: Sonar Technician (STG) pipeline training at Pt Loma, CA. Operator training system for AN/SQS-62 operator training using CMPT- like environment. Course will include an AN/SQWS-62 maintenance trainer for maintenance and deploy/retrieve tasks. The AN/SLQ-61 LWT Operations and Maintenance course will deliver a trainer for deploy/retrieve tasks. Procurements support formal training that will commence in FY2020. [P40A / COMMON MISSION PACKAGE TRAINER (CMPT)]: FY19 procurement is for the fifth CMPT. CMPT is procured from AAC under SBIR Phase III contract, and when delivered is integrated with ship combat management system (CMS) trainers capable of being connected to the Navy Cooperative Training Environment (NCTE) for participation in Navy and Joint synthetic training events at the LCS Training Facilities in each home port. A total of 6 are required, with 3 in San Diego and 3 in Mayport. The first CMPT was procured using RDT&EN. A CMPT consists of a production Mission Package Computing		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 15: Other Ship Support		P-1 Line Item Number / Title: 1600 / LCS Common Mission Modules 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: 374		
Environment (MPCE) using one of three mission area Mission Package Application Software (MPAS) and integrated with visualization software (common with ship CMS trainer), models and simulations to stimulate tactical MPAS, scenario generator, and instructor control software. Mission area additions (SUW: GUID, and ASW: EMM processing), and IP communications capability for watchstanders are included.		
[P40A / CMPT MPTS Tech Refresh/Modernization]: FY19 procurement is for ASW related Technical Insertion (TI) hardware associated with Advanced Capability Baseline (ACB) Escort Mission Module (EMM) software. FY18 began integration of ASW capability into CMPT. Hardware procurement is required to support FY20 Ready For Training (RFT) at LTF.		
[P40A / MISSION BAY TRAINING DEVICES - MCM]: FY19 procurement is for UISS Technical Training Equipment (TTE).		
[P40A / LM015 - CONTAINERS (SHIPPING & SUPPORT)]: Each MP variant uses a base Support Container (SC) which is an ISO compliant shipping container, and comes in two variants: Type I and Type II. The Type I container is a 20-foot ISO container with nominal dimensions of 20' x 8' x 8'. The Type II container is a 10-foot ISO container with nominal dimensions of 10' x 8' x 8'. In both cases the base SC is constructed of high strength steel or aluminum to reduce the overall weight and features a number of standard configuration items. Mission systems fit inside standard ten- or twenty-foot ISO SCs, or on ISO compliant flat racks and vehicle cradles. The LCS MP zones inside each seaframe mission bay are configured to accommodate the SCs.		
[P40A / MCM SUPPORT CONTAINER]: Unit price for the MCM Containers is an average cost that does not reflect the actual cost of each container. Individual containers for each of the different MCM mission systems have unique requirements and vary in cost.		
[P40A / LM016 - MVCS]: The Multiple Vehicle Communications System (MVCS) provides the Littoral Combat Ship (LCS) Mission Modules with the capability to simultaneously communicate with multiple Unmanned Surface Vehicles (USVs) and surfaced Unmanned Underwater Vehicles (UUVs) by providing a common data link and network communication services. These services include link establishment, link management, communications fail-safes, Emissions Control (EMCON) handling, data routing and protection, packet shaping, Priority of Service (PoS), and automated communications system configuration. MVCS establishes a common interface for these services in the form of hardware and message definitions to maximize the usefulness of limited radio equipment onboard the LCS seaframe.		
[P40A / Shipboard OTH Communications]: The Multi-Vehicle Communications System (MVCS) is a communications management system that provides common line of sight (LOS), over the horizon (OTH), and satellite communications capabilities for simultaneous sensor data transfer and vehicle control of multiple Littoral Combat Ships (LCS) Mission Module unmanned surface vehicles (USV) and unmanned underwater vehicles (UUVs). MVCS is an open architected communications system that can be adapted to support any radio system. This funds procurement and delivery of shipboard and small craft radios and to provide OTH capabilities needed by the Mine Countermeasures (MCM) Mission Package. The Unmanned Aerial Relay (UMAR) extends the existing LOS high bandwidth capability (12 Mbps) range out to 30 NM through use of a tethered quad-copter air relay. The second solution is the High Frequency Ground Wave (HFGW) radio which provides a direct high bandwidth comms link (452 kbps to 2 vehicles) operating out to 30 NM, without relying on a relay platform.		
[P40A / LM900 - CONSULTING SERVICES]: Provides program management support, engineering and technical support, studies, analysis and evaluation on mission package systems.		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy								Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 15: Other Ship Support						P-1 Line Item Number / Title: 1600 / LCS Common Mission Modules 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: 374										
Exhibits Schedule					Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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	LCS MISSION MODULES	P-5a			- / 423.773	- / 14.670	- / 34.666	- / 46.732	- / -	- / 46.732
P-40	Total Gross/Weapon System Cost				- / 423.773	- / 14.670	- / 34.666	- / 46.732	- / 0.000	- / 46.732
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown. Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										
Justification: FY 2019 funding is an increase from FY 2018 due to the procurement of six (6) shipboard MPCE systems including technology refresh to meet LCS ship delivery schedules. FY2019 also funds the procurement of the first four (4) MPCE Sonar Signal Processing racks to support the ASW Escort Mission Module (EMM) processing requirements on LCS 22 through LCS 25. FY 2019 also support the procurement of training equipment to support the outfit of the LCS Training Facility (LTF) in Mayport, FL to support training of Freedom Variant crews. Current San Diego, CA training facilities do not meet the throughput requirements to provide trained sailors to meet Fleet operational needs on both coasts. These funds are required to stand up the (LTF) in Mayport, FL. which will focus on training for the Freedom Variant crews. Training equipment will include one Common Mission Package Trainer (CMPT), ASW Mission Package training equipment and MCM Mission Package Training equipment. Also in FY 2019 Cyber Security and Anti-Jam toolkits, required for each Multiple Vehicle Communications System (MVCS) installation will be procured. The MVCS provides the Littoral Combat Ship (LCS) Mission Modules with the capability to simultaneously communicate with multiple Unmanned Surface Vehicles (USVs) and surfaced Unmanned Underwater Vehicles (UUVs) by providing a common data link and network communication services.										

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 15						P-1 Line Item Number / Title: 1600 / LCS Common Mission Modules Equipment									Aggregated Items Title: LCS MISSION MODULES					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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) LM001 - MCM Mission Package																				
1.1) USV	A		-	-	1.725	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.2) USV - SWEEP	A		-	-	2.410	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.3) RMMV	A		-	-	17.008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.4) RMMV CRADLE	A		7,604K	2	15.208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.5) AMNS	A		4,272K	4	17.090	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.6) ALMDS	A		6,622K	3	19.867	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.7) AN/AQS-20A ⁽¹⁾	A		8,769K	3	26.307	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.8) COBRA	A		7,792K	1	7.792	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.9) MCM SUPPORT CONTAINERS	A		1,547K	15	23.203	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.10) SUPPORT EQUIPMENT	A		-	-	9.804	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.11) PRODUCTION ENGINEERING SUPPORT	A		-	-	10.153	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.12) MCM INCREMENTAL WHOLENESS - AQS-20A ⁽²⁾	A		5,773K	1	5.773	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) LM001 - MCM Mission Package			-	-	156.340	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2) LM002 - ASW MISSION PACKAGE																				
2.1) ASW MISSION PACKAGE	A		-	-	17.008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 2) LM002 - ASW MISSION PACKAGE			-	-	17.008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3) LM003 - SUW MISSION PACKAGE																				
3.1) GUN MODULE	A		4,206K	6	25.237	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.2) SUW SHIPPING CONTAINER	A		144,833.33	6	0.869	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.3) SUW SUPPORT CONTAINER	A		980,250.00	4	3.921	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.4) SURFACE-TO-SURFACE MISSILE MODULE	A		-	-	2.400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.5) PRODUCTION ENGINEERING	A		-	-	2.013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 3) LM003 - SUW MISSION PACKAGE			-	-	34.440	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4) LM005 - OBSOLESENC MISSION MODULE ECPs																				

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 15							P-1 Line Item Number / Title: 1600 / LCS Common Mission Modules Equipment								Aggregated Items Title: LCS MISSION MODULES					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
4.1) ENGINEERING CHANGE PROPOSALS	A		-	-	22.558	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.2) LCS MISSION MODULES RADIO	A		1,540K	8	12.316	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.3) PRODUCTION ENGINEERING	A		-	-	1.436	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 4) LM005 - OBSOLESECE MISSION MODULE ECPs			-	-	36.310	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5) LM007 - C-HAWKLINK SUPPORT EQUIPMENT																				
5.1) C-HAWKLINK SUPPORT EQUIPMENT	A		-	-	5.885	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 5) LM007 - C-HAWKLINK SUPPORT EQUIPMENT			-	-	5.885	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6) LM008 - MPCE																				
6.1) Mission Package Portable Control Station ^(†)	A		-	-	-	-	-	-	-	-	-	1,600K	1	1.600	-	-	-	1,600K	1	1.600
6.2) MPCE ^(†)	A		819,222.22	18	14.746	810,000.00	2	1.620	810,000.00	2	1.620	832,000.00	2	1.664	-	-	-	832,000.00	2	1.664
6.3) MPCE Tech Refresh ^(†)	A		726,333.33	3	2.179	-	-	-	778,500.00	4	3.114	798,500.00	4	3.194	-	-	-	798,500.00	4	3.194
6.4) MPCE Sonar Signal Processing ^{(3)(†)}	A		-	-	-	-	-	-	-	-	-	2,247K	4	8.986	-	-	-	2,247K	4	8.986
6.5) PRODUCTION ENGINEERING	A		-	-	1.100	-	-	0.240	-	-	0.294	-	-	0.335	-	-	-	-	-	0.335
Subtotal: 6) LM008 - MPCE			-	-	18.025	-	-	1.860	-	-	5.028	-	-	15.779	-	-	-	-	-	15.779
7) LM009 - DATA MISSION PAYLOAD																				
7.1) DATA MISSION PAYLOAD	A		5,391K	2	10.782	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.2) PRODUCTION ENGINEERING	A		-	-	1.638	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 7) LM009 - DATA MISSION PAYLOAD			-	-	12.420	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8) LM010 - MISSION PACKAGE INTEGRATION																				
8.1) MISSION PACKAGE PRODUCTION ENGINEERING & ASSEMBLY	A		-	-	16.422	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 8) LM010 - MISSION PACKAGE INTEGRATION			-	-	16.422	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy																Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 15									P-1 Line Item Number / Title: 1600 / LCS Common Mission Modules Equipment							Aggregated Items Title: LCS MISSION MODULES					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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)	
9) LM012 - TRAINING EQUIPMENT																					
9.1) COMMON MISSION PACKAGE TRAINER (CMPT) (4)(†)	A		2,735K	2	5.470	2,622K	1	2.622	-	-	-	3,280K	1	3.280	-	-	-	3,280K	1	3.280	
9.2) CMPT MPTS Tech Refresh/ Modernization (5)	A		-	-	2.235	-	-	2.052	-	-	0.750	-	-	1.857	-	-	-	-	-	1.857	
9.3) MISSION PACKAGE TRAINING SYSTEM (MPTS)	A		-	-	0.993	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
9.4) MK-50 GUN WEAPON SYSTEM TTE	A		3,890K	1	3.890	-	-	-	-	-	0.620	-	-	-	-	-	-	-	-	-	
9.5) EMM AN/SQS-62 Training Equipment(†)	A		-	-	-	-	-	-	-	-	-	4,509K	1	4.509	-	-	-	4,509K	1	4.509	
9.6) MISSION BAY TRAINING DEVICES - MCM (6)	A		-	-	24.641	-	-	-	-	-	13.056	-	-	11.804	-	-	-	-	-	11.804	
9.7) MISSION BAY TRAINING DEVICES - ASW	A		-	-	-	-	-	-	-	-	2.230	-	-	-	-	-	-	-	-	-	
9.8) MISSION BAY TRAINING DEVICES - SUW	A		-	-	-	-	-	0.912	-	-	-	-	-	-	-	-	-	-	-	-	
Subtotal: 9) LM012 - TRAINING EQUIPMENT			-	-	37.229	-	-	5.586	-	-	16.656	-	-	21.450	-	-	-	-	-	21.450	
10) LM013 - MARITIME SECURITY MODULE																					
10.1) MARITIME SECURITY MODULE	A		7,701K	2	15.402	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
10.2) PRODUCTION ENGINEERING	A		-	-	1.279	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Subtotal: 10) LM013 - MARITIME SECURITY MODULE			-	-	16.681	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
11) LM015 - CONTAINERS (SHIPPING & SUPPORT)																					
11.1) MCM SUPPORT CONTAINER(†)	A		1,340K	21	28.144	1,662K	1	1.662	1,672K	3	5.015	1,590K	1	1.590	-	-	-	1,590K	1	1.590	
11.2) SUW SUPPORT CONTAINER(†)	A		592,318.18	22	13.031	722,750.00	4	2.891	737,750.00	8	5.902	-	-	-	-	-	-	-	-	-	
11.3) SUW SHIPPING CONTAINER(†)	A		178,875.00	24	4.293	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
11.4) PRODUCTION ENGINEERING	A		-	-	13.761	-	-	2.398	-	-	0.565	-	-	1.031	-	-	-	-	-	1.031	

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 15							P-1 Line Item Number / Title: 1600 / LCS Common Mission Modules Equipment							Aggregated Items Title: LCS MISSION MODULES						
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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: 11) LM015 - CONTAINERS (SHIPPING & SUPPORT)			-	-	59.229	-	-	6.951	-	-	11.482	-	-	2.621	-	-	-	-	-	2.621
12) LM016 - MVCS																				
12.1) Cyber Security / Anti-Jam	A		-	-	-	-	-	-	-	-	-	-	-	3.876	-	-	-	-	-	3.876
12.2) Shipboard OTH Communications ^{(7)(t)}	A		-	-	-	-	-	-	-	-	-	450,000.00	2	0.900	-	-	-	450,000.00	2	0.900
12.3) MVCS Tech Refresh ^(t)	A		275,000.00	6	1.650	-	-	-	292,000.00	4	1.168	298,000.00	4	1.192	-	-	-	298,000.00	4	1.192
12.4) Production Engineering	A		-	-	0.093	-	-	-	-	-	0.060	-	-	0.634	-	-	-	-	-	0.634
Subtotal: 12) LM016 - MVCS			-	-	1.743	-	-	-	-	-	1.228	-	-	6.602	-	-	-	-	-	6.602
13) LM900 - CONSULTING SERVICES																				
13.1) CONSULTING SERVICES	A		-	-	12.041	-	-	0.273	-	-	0.272	-	-	0.280	-	-	-	-	-	0.280
Subtotal: 13) LM900 - CONSULTING SERVICES			-	-	12.041	-	-	0.273	-	-	0.272	-	-	0.280	-	-	-	-	-	0.280
Total			-	-	423.773	-	-	14.670	-	-	34.666	-	-	46.732	-	-	-	-	-	46.732
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
(t) indicates the presence of a P-5a																				
Footnotes:																				
(1) AN/AQS-20A prior configuration AQS-20 sonars and are non-deployable assets. AQS-20C are the production representative, deployable configuration and are procured in BLI 1601																				
(2) AN/AQS-20A prior configuration AQS-20 sonars and are non-deployable assets. AQS-20C are the production representative, deployable configuration and are procured in BLI 1601																				
(3) The Open System Architecture (OSA) and high performance COTS MPCE Sonar Signal Processing hardware, is provided as an adjunct to the Mission Package Computing Environment (MPCE) will be fielded to meet in yard need dates for LCS 22 - LCS 28. The MPCE Sonar Signal Processing will provide an opportunity to integrate emergent, transformational ASW technological improvements that were previously unachievable. The sonar signal processing will require periodic upgrades to remain effective well into the 21st century and to pace the threat. Software upgrades target capability increases in high interest areas as prescribed by the Fleet and captured in campaign analysis. To achieve this, this project will package and deliver incremental upgrades every four years to the production program via an ACB development process by inserting maturing ASW technologies and addressing hardware technology obsolescence.																				
(4) Technical Training Equipment that is integrated with Ship Combat Management System to conduct stand-alone MP team training and integrated LCS Team training.																				
(5) Procurement of ECP's, Tech Refresh, and Modernization to keep CMPT and MPTS current with delivered baseline.																				
(6) Procurement of MCM components located in an LCS mission bay to replicate the afloat environment as required to support individual qualification and team certification associated with routine and corrective system maintenance in a constrained environment, transportation in the mission bay, pre- / post- operation system maintenance; system launch and recovery.																				
(7) Quantity reflects total amount of Unmanned Aerial Relay (UMAR) ship-sets, High Frequency Ground Wave (HFGW) ship-sets and HFGW vehicle sets. Unit price is average of all components.																				

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Exhibit P-5a, Procurement History and Planning: PB 2019 Navy								Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 15			P-1 Line Item Number / Title: 1600 / LCS Common Mission Modules Equipment					Aggregated Items: LCS MISSION MODULES				
Item Number / Title [DODIC]	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$)	Specs Avail Now?	Date Revision Available	RFP Issue Date
6) LM008 - MPCE												
6.1) Mission Package Portable Control Station		2019	Advanced Acoustic Concept / Columbia, MD	C / TBD	** NO PCO **	Mar 2019	Sep 2020	1	1,600K	N		
6.2) MPCE		2017	Advanced Acoustic Concept / Columbia, MD	SS / CPFF	NAVSEA	Aug 2017	Aug 2018	2	810,000.00	Y		
6.2) MPCE		2018	TBD / TBD	TBD	NAVSEA	Mar 2018	Mar 2019	2	810,000.00	Y		
6.2) MPCE		2019	TBD / TBD	TBD	NAVSEA	Mar 2019	Mar 2020	2	832,000.00	Y		
6.3) MPCE Tech Refresh		2018	TBD / TBD	TBD	NAVSEA	Mar 2018	Mar 2019	4	778,500.00	Y		
6.3) MPCE Tech Refresh		2019	TBD / TBD	TBD	NAVSEA	Mar 2019	Mar 2020	4	798,500.00	Y		
6.4) MPCE Sonar Signal Processing ⁽³⁾		2019	Lockheed Martin / Manassas, VA	C / FFP	** NO PCO **	Dec 2018	Jun 2020	4	2,247K	Y		
9) LM012 - TRAINING EQUIPMENT												
9.1) COMMON MISSION PACKAGE TRAINER (CMPT) ⁽⁴⁾		2017	Advanced Acoustic Concept / Columbia, MD	SS / FP	NAVSEA	Apr 2017	Apr 2018	1	2,622K	Y		
9.1) COMMON MISSION PACKAGE TRAINER (CMPT) ⁽⁴⁾		2019	Advanced Acoustic Concept / Columbia, MD	C / TBD	** NO PCO **	Nov 2018	Nov 2019	1	3,280K	Y		
9.5) EMM AN/SQS-62 Training Equipment		2019	Raytheon / Portsmouth, RI	C / TBD	** NO PCO **	Feb 2019	Aug 2020	1	4,509K	N		
11) LM015 - CONTAINERS (SHIPPING & SUPPORT)												
11.1) MCM SUPPORT CONTAINER		2017 ⁽⁸⁾	NORTHROP GRUMMAN / BETHPAGE, NEW YORK	C / FFP	NAVSEA	Aug 2017	Feb 2019	1	1,662K	Y		
11.1) MCM SUPPORT CONTAINER		2018	NORTHROP GRUMMAN / BETHPAGE, NEW YORK	C / FFP	NAVSEA	Mar 2018	Sep 2019	3	1,672K	Y		
11.1) MCM SUPPORT CONTAINER		2019	NORTHROP GRUMMAN / BETHPAGE, NEW YORK	C / FFP	NAVSEA	Mar 2019	Sep 2020	1	1,590K	Y		
11.2) SUW SUPPORT CONTAINER		2016	NORTHROP GRUMMAN / BETHPAGE, NEW YORK	C / FFP	NAVSEA	Aug 2017	Feb 2019	8	706,250.00	Y		
11.2) SUW SUPPORT CONTAINER		2017	NORTHROP GRUMMAN / BETHPAGE, NEW YORK	C / FFP	NAVSEA	Aug 2017	Feb 2019	4	722,750.00	Y		
11.2) SUW SUPPORT CONTAINER		2018	NORTHROP GRUMMAN / BETHPAGE, NEW YORK	C / FFP	NAVSEA	Mar 2018	Sep 2019	8	737,750.00	Y		
11.3) SUW SHIPPING CONTAINER		2016	NORTHROP GRUMMAN / BETHPAGE, NEW YORK	SS / FFP	NAVSEA	Apr 2017	Oct 2018	12	210,500.00	Y		
12) LM016 - MVCS												
12.2) Shipboard OTH Communications ⁽⁷⁾		2019	TBD / TBD	C / TBD	** NO PCO **	Jan 2019	Jul 2020	2	450,000.00	N		
12.3) MVCS Tech Refresh		2018	VARIOUS / VARIOUS	C / FFP	NSWC PC	Mar 2018	Mar 2019	4	292,000.00	Y		

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Exhibit P-5a, Procurement History and Planning: PB 2019 Navy									Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 15			P-1 Line Item Number / Title: 1600 / LCS Common Mission Modules Equipment						Aggregated Items: LCS MISSION MODULES			
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
12.3) MVCS Tech Refresh		2019	VARIOUS / VARIOUS	C / TBD	** NO PCO **	Feb 2019	Feb 2020	4	298,000.00	Y		

Footnotes:

⁽⁸⁾ Unit price for the MCM Containers is an average cost that does not reflect the cost of each container. Individual containers for each of the different MCM mission systems have unique requirements and vary in cost.

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 15: Other Ship Support	P-1 Line Item Number / Title: 1601 / LCS MCM Mission Modules

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0603596N

Line Item MDAP/MAIS Code: 000

Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	149.381	29.724	55.870	124.147	0.000	124.147	204.324	245.108	227.068	234.109	1,501.531	2,771.262
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	149.381	29.724	55.870	124.147	0.000	124.147	204.324	245.108	227.068	234.109	1,501.531	2,771.262
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	149.381	29.724	55.870	124.147	0.000	124.147	204.324	245.108	227.068	234.109	1,501.531	2,771.262
<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>)	-	3.964	4.304	0.971	-	0.971	0.961	0.283	0.296	0.340	Continuing	Continuing
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The FY 2019 funding request was reduced by \$3.641 million to reflect the Department of Navy's effort to support the Office of Management and Budget directed reforms for Efficiency and Effectiveness that include a lean, accountable, more efficient government.

The LCS Mine Countermeasures (MCM) Mission Package (MP) counters bottom, tethered, near surface, and surface mines in the littorals without putting Sailors in the minefield. When the MCM MP is embarked, LCS is capable of conducting detect-to-engage operations (hunting, sweeping, and neutralization) against shallow and deep-water sea mine threats. The MCM MP provides these capabilities through the use of sensors and weapons deployed from an embarked MH-60S multi-mission helicopter and unmanned off-board vehicles. The embarked MH-60S employs the Organic Airborne Mine Countermeasures systems to provide rapid mine hunting.

Organic Airborne Mine Countermeasures (OAMCM) systems provide the long-range, airborne capability to conduct minehunting and clearing operations in littoral zones, confined straits, choke points, and the Amphibious Objective Area (AOA) quickly.

The Coastal Mine Reconnaissance Module will detect mines in the surface zone and beach zone areas, providing the Joint Force Commander with the information needed to clear mines with non-LCS assets and allow military forces to safely and effectively storm the beaches. This procurement line supports the LCS mine countermeasures mission package, providing deployable combat capability to the LCS MCM squadron.

The Airborne Mine Neutralization Module (MH-60S Helo + Airborne Mine Neutralization System) and Near Surface Detection (NSD) Module (MH-60S Helo + Airborne Mine Laser Detection System) achieved Initial Operational Capability (IOC) in Q1 FY 2017. Following IOC of the COBRA system in July of 2017, the Coastal Mine Reconnaissance (CMR) Module (MQ-8 VTUAV + COBRA + MP equipment) will achieve IOC in Q3 FY 2018.

The program will add future capabilities to provide a surface influence sweep capability via the Unmanned Minesweeping (UMS) Module: Unmanned Influence Sweeping System (UISS) (MCM Unmanned Surface Vehicle (USV) + Unmanned Surface Sweep System) for high-speed influence minesweeping, Remote Minehunting Module (MCM USV + AN/AQS-20 Minehunting Sonar) to detect bottom and tethered mines and the Buried Minehunting Module (Knifefish Unmanned Underwater Vehicle) to detect buried mines and mines in a high clutter environment. When complete, the MCM MP will provide full capability against floating, tethered, bottom, and buried mines.

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 15: Other Ship Support		P-1 Line Item Number / Title: 1601 / LCS MCM Mission Modules
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0603596N
Line Item MDAP/MAIS Code: 000		
The MCM MP is deployable and capable of meeting its focused mission requirements on an LCS only when it includes the full complement of Common Mission Modules Equipment (Line Item Number 1600) and the full complement of mission systems that comprise each MCM Module (Line Item Number 1601). If all mission systems are not procured in any given Fiscal Year, the program will provide partial MCM capabilities to the Fleet to deploy until the mission systems are replaced in a subsequent Fiscal Year. Other Related Budgets: BLIs: OPN 1600, OPN 1602, OPN 1603, OPN 4248, OPN 2622, OPN 2624, WPN 4221, WPN 4225, RDT&E 0603596N		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy								Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 15: Other Ship Support						P-1 Line Item Number / Title: 1601 / LCS MCM Mission Modules				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: 0603596N				
Line Item MDAP/MAIS Code: 000										
Exhibits Schedule					Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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 / LCS MCM Mission Packages	P-5a, P-21			- / 149.381	- / 29.724	- / 55.870	- / 124.147	- / 0.000	- / 124.147
P-40	Total Gross/Weapon System Cost				- / 149.381	- / 29.724	- / 55.870	- / 124.147	- / 0.000	- / 124.147
*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 2019 funding includes the procurement of one Unmanned Influence Sweeping System (UISS), two Mine Countermeasures (MCM) Unmanned Surface Vehicles (USV), two Knifefish systems, two UISS MH D&Rs, two Airborne Mine Neutralizing Systems (AMNS), one COBRA and associated support equipment. All MCM assets procured in FY19 support MCM Mission Package deployments starting in FY21 and build MCM capacity required to minimize the service life extension for the MH-53E helicopters and MCM-1 ship. The increase in FY 2019 from FY2018 is attributed to the initial procurement of the Buried Minehunting Module (two Knifefish systems and ancillary equipment) as well as the Remote Minehunting Module (two MCM USVs and two UISS MH D&Rs).

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Exhibit P-5, Cost Analysis: PB 2019 Navy												Date: February 2018						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 15						P-1 Line Item Number / Title: 1601 / LCS MCM Mission Modules						Item Number / Title [DODIC]: 1 / LCS MCM Mission Packages						
ID Code (A=Service Ready, B=Not Service Ready) :									MDAP/MAIS Code:									
Resource Summary				Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total				
Procurement Quantity <i>(Units in Each)</i>				-		-		-		-		-		-				
Gross/Weapon System Cost <i>(\$ in Millions)</i>				149.381		29.724		55.870		124.147		0.000		124.147				
Less PY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Net Procurement (P-1) <i>(\$ in Millions)</i>				149.381		29.724		55.870		124.147		0.000		124.147				
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Total Obligation Authority <i>(\$ in Millions)</i>				149.381		29.724		55.870		124.147		0.000		124.147				
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																		
Initial Spares <i>(\$ in Millions)</i>				-		3.964		4.304		0.971		-		0.971				
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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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 - MC001 - UNMANNED MINESWEEPING MODULE Cost																		
Recurring Cost																		
1.1.1) Unmanned Influenced Sweep System ^{(†) (1)}	-	-	-	-	-	-	11,800K	1	11.800	12,100K	1	12.100	-	-	-	12,100K	1	12.100
Subtotal: Recurring Cost	-	-	-	-	-	-	-	-	11.800	-	-	12.100	-	-	-	-	-	12.100
Subtotal: Hardware - MC001 - UNMANNED MINESWEEPING MODULE Cost	-	-	-	-	-	-	-	-	11.800	-	-	12.100	-	-	-	-	-	12.100
Hardware - MC003 - ORGANIC AIRBORNE MINE COUNTERMEASURES (OAMCM) SYSTEMS Cost																		
Recurring Cost																		
2.1.1) AMNS ^{(†) (2)}	4,276K	3	12.828	4,189K	1	4.189	5,114K	2	10.228	5,115K	2	10.230	-	-	-	5,115K	2	10.230
2.1.2) ALMDS ^{(†) (3)}	9,084K	4	36.338	13,826K	1	13.826	14,120K	1	14.120	-	-	-	-	-	-	-	-	-
2.1.3) AMNS Technology Refresh and Obsolescence Upgrades ⁽⁴⁾	-	-	2.651	-	-	-	-	-	-	-	-	1.308	-	-	-	-	-	1.308
2.1.4) ALMDS Technology Refresh and obsolescence Upgrades	-	-	3.900	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	55.717	-	-	18.015	-	-	24.348	-	-	11.538	-	-	-	-	-	11.538
Subtotal: Hardware - MC003 - ORGANIC AIRBORNE MINE	-	-	55.717	-	-	18.015	-	-	24.348	-	-	11.538	-	-	-	-	-	11.538

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Exhibit P-5, Cost Analysis: PB 2019 Navy											Date: February 2018							
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 15						P-1 Line Item Number / Title: 1601 / LCS MCM Mission Modules						Item Number / Title [DODIC]: 1 / LCS MCM Mission Packages						
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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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)
COUNTERMEASURES (OAMCM) SYSTEMS Cost																		
Hardware - MC004 - COASTAL MINE RECONNAISSANCE MODULE Cost																		
Recurring Cost																		
3.1.1) COBRA ^{(†) (5)}	-	-	-	8,500K	1	8.500	8,550K	1	8.550	8,550K	1	8.550	-	-	-	8,550K	1	8.550
Subtotal: Recurring Cost	-	-	-	-	-	8.500	-	-	8.550	-	-	8.550	-	-	-	-	-	8.550
Subtotal: Hardware - MC004 - COASTAL MINE RECONNAISSANCE MODULE Cost	-	-	-	-	-	8.500	-	-	8.550	-	-	8.550	-	-	-	-	-	8.550
Hardware - MC005 - BURIED MINEHUNTING MODULE Cost																		
Recurring Cost																		
4.1.1) KNIFEFISH ⁽⁶⁾	-	-	-	-	-	-	-	-	-	13,002K	2	26.003	-	-	-	13,002K	2	26.003
4.1.2) Ancillary Equipment and Container Outfitting ^{(†) (7)}	-	-	-	-	-	-	-	-	-	4,198K	2	8.397	-	-	-	4,198K	2	8.397
Subtotal: Recurring Cost	-	-	-	-	-	-	-	-	-	-	-	34.400	-	-	-	-	-	34.400
Subtotal: Hardware - MC005 - BURIED MINEHUNTING MODULE Cost	-	-	-	-	-	-	-	-	-	-	-	34.400	-	-	-	-	-	34.400
Hardware - MC006 - MCM SUPPORT EQUIPMENT Cost																		
Recurring Cost																		
5.1.1) SUPPORT EQUIPMENT	-	-	9.835	-	-	0.803	-	-	4.185	-	-	3.242	-	-	-	-	-	3.242
Subtotal: Recurring Cost	-	-	9.835	-	-	0.803	-	-	4.185	-	-	3.242	-	-	-	-	-	3.242
Subtotal: Hardware - MC006 - MCM SUPPORT EQUIPMENT Cost	-	-	9.835	-	-	0.803	-	-	4.185	-	-	3.242	-	-	-	-	-	3.242
Hardware - MC008 - REMOTE MINEHUNTING MODULE Cost																		
Recurring Cost																		
6.1.1) MCM USV ^{(†) (8)}	-	-	-	-	-	-	-	-	-	17,480K	2	34.960	-	-	-	17,480K	2	34.960
6.1.2) MH D&R Rig (for UISS craft) ^{(†) (9)}	-	-	-	-	-	-	-	-	-	6,100K	2	12.200	-	-	-	6,100K	2	12.200
6.1.3) AN/AQS-20C ⁽¹⁰⁾	6,660K	10	66.600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Recurring Cost	-	-	66.600	-	-	-	-	-	-	-	-	47.160	-	-	-	-	-	47.160

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Exhibit P-5, Cost Analysis: PB 2019 Navy												Date: February 2018						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 15						P-1 Line Item Number / Title: 1601 / LCS MCM Mission Modules						Item Number / Title [DODIC]: 1 / LCS MCM Mission Packages						
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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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 - MC008 - REMOTE MINEHUNTING MODULE Cost	-	-	66.600	-	-	-	-	-	-	-	-	47.160	-	-	-	-	-	47.160
Support - MC900 - CONSULTING SERVICES Cost																		
7.1) CONSULTING SERVICES	-	-	3.614	-	-	-	-	-	1.910	-	-	1.948	-	-	-	-	-	1.948
Subtotal: Support - MC900 - CONSULTING SERVICES Cost	-	-	3.614	-	-	-	-	-	1.910	-	-	1.948	-	-	-	-	-	1.948
Support - PRODUCTION ENGINEERING Cost																		
8.1) MC001 - UNMANNED INFLUENCE MINE SWEEP	-	-	-	-	-	-	-	-	0.532	-	-	0.625	-	-	-	-	-	0.625
8.2) MC003 - ORGANIC AIRBORNE MINE COUNTERMEASURES (OAMCM)	-	-	11.128	-	-	1.973	-	-	3.319	-	-	1.250	-	-	-	-	-	1.250
8.3) MC004 - COASTAL MINE RECONNAISSANCE MODULE	-	-	-	-	-	0.172	-	-	0.507	-	-	0.448	-	-	-	-	-	0.448
8.4) MC005 - BURIED MINEHUNTING MODULE	-	-	-	-	-	-	-	-	-	-	-	0.625	-	-	-	-	-	0.625
8.5) MC006 - MCM SUPPORT EQUIPMENT	-	-	2.487	-	-	0.261	-	-	0.719	-	-	0.640	-	-	-	-	-	0.640
8.6) MC008 REMOTE MINEHUNTING MODULE	-	-	-	-	-	-	-	-	-	-	-	1.621	-	-	-	-	-	1.621
Subtotal: Support - PRODUCTION ENGINEERING Cost	-	-	13.615	-	-	2.406	-	-	5.077	-	-	5.209	-	-	-	-	-	5.209
Gross/Weapon System Cost	-	-	149.381	-	-	29.724	-	-	55.870	-	-	124.147	-	-	0.000	-	-	124.147
Remarks: [Hardware] MC001- The Unmanned Minesweeping Module provides an unmanned surface, long endurance bottom sweep capability to clear large areas of mines that may remain after mine-hunting operations are complete. [Hardware] The Buried Minehunting Module provides capability to detect and identify buried mines and mines in a cluttered ocean bottom environment. This procurement line supports the LCS mine countermeasures mission package, providing deployable combat capability to the LCS MCM squadron.																		

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Exhibit P-5, Cost Analysis: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 15	P-1 Line Item Number / Title: 1601 / LCS MCM Mission Modules	Item Number / Title [DODIC]: 1 / LCS MCM Mission Packages
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
[Hardware] MC006 - MCM SUPPORT EQUIPMENT]: Support equipment related to the individual modules. [Hardware] The Remote Minehunting module is comprised of an MCM USV + Minehunting Deploy and Retrieve (MH D&R) Rig coupled with two (2) AN/AQS-20C minehunting sonars. This module provides a rapid minehunting capability for volume and bottom mines, and also a bottom mine identification capability. The unit cost of the MCM USV includes the cost of one (1) craft, one (1) MH D&R Rig, and one (1) support cradle. [Support Cost] MC900 - Provides program management support, engineering and technical support, studies, analysis and evaluation on mission module systems. (t) indicates the presence of a P-5a Footnotes: (1) 1.1.1) The Unmanned Influence Sweep System consists of a USV and a sweep payload. (2) AMNS prices reflect contract actuals. (3) ALMDS unit prices are based on economic order quantity / step-ladder pricing in existing contract. FY17 and FY18 unit price based on 1 production unit each year. (4) 2.1.4) AMNS Tech Refreshes improve reliability and maintainability to previously procured AMNS units and correct deficiencies that allow the equipment to perform in accordance with current deployment configuration / operational requirements. (5) FY17 - FY20 reflects Economic Order Quantity (EOQ) when taking into consideration the COBRA training assets procured through OPN 2624 where COBRA systems are procured to provide initial and proficiency training to Navy aircrews. (6) Knifefish pricing is based on the EDM/LRIP contract and reflects procurement of two (2) Unmanned Underwater Vehicles (UUV). (7) The unit cost includes all necessary equipment to outfit the Buried Minehunting (BMH) Module to include the base pallet, launch and recovery device, shipping containers, support equipment (Deck tie down case, ballast transport case, grapple assembly, winch case, and other tools), and the BMH Specialized Container. (8) 7.1.1) The MCM USV contains one (1) USV craft and one (1) Minehunting Deploy and Retrieve (D&R) Rig for deploying and retrieving the AN/AQS-20 minehunting sonar. The USV craft is based on the vehicle/craft in the UISS system. An MCM USV baseline will be developed based on the UISS craft by FY19 to be compatible for both minehunting and minesweeping missions. (9) 7.1.2) The UISS Minehunting Deploy and Retrieve Rig includes the Engineering Change Proposal (ECP) to the UISS craft to allow the vehicle to perform minehunting missions and also the deploy and retrieve handling system for the AN/AQS-20 minehunting sonar. (10) The AQS-20C is a towed variable depth minehunting sonar.		

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Exhibit P-5a, Procurement History and Planning: PB 2019 Navy									Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 15			P-1 Line Item Number / Title: 1601 / LCS MCM Mission Modules						Item Number / Title [DODIC]: 1 / LCS MCM Mission Packages			
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) Unmanned Influenced Sweep System ^(†)		2018	Textron / Hunt Valley, MD	C / FPIF	NAVSEA	Aug 2018	Aug 2020	1	11,800K	Y		
1.1.1) Unmanned Influenced Sweep System ^(†)		2019	Textron / Hunt Valley, MD	C / FPIF	** NO PCO **	Oct 2018	Oct 2020	1	12,100K	Y		
2.1.1) AMNS ^(†)		2017	Raytheon / Portsmouth, RI	C / FFP	NAVSEA	May 2017	Oct 2018	1	4,189K	Y		
2.1.1) AMNS ^(†)		2018	Raytheon / Portsmouth, RI	C / FFP	NAVSEA	Feb 2018	Jul 2019	2	5,114K	Y		
2.1.1) AMNS ^(†)		2019	Raytheon / Portsmouth, RI	C / FFP	NAVSEA	Feb 2019	Jul 2020	2	5,115K	Y		
2.1.2) ALMDS ^(†)		2017	Northrop Grumman / Melborn, FL	C / FFP	NAVSEA	Feb 2017	Aug 2018	1	13,826K	Y		
2.1.2) ALMDS ^(†)		2018	Northrop Grumman / Melborn, FL	C / FFP	NAVSEA	Mar 2018	Sep 2019	1	14,120K	Y		
3.1.1) COBRA		2017	ARETE / TUCSON, AZ	C / FFP	NSWC PC	May 2017	May 2019	1	8,500K	Y		
3.1.1) COBRA		2018	ARETE / TUCSON, AZ	C / FFP	NSWC PC	Mar 2018	Mar 2020	1	8,550K	Y		
3.1.1) COBRA		2019	ARETE / TUCSON, AZ	C / FFP	NSWC PC	Mar 2019	Mar 2021	1	8,550K	Y		
4.1.2) Ancillary Equipment and Container Outfitting		2019	NORTHROP GRUMMAN / BETHPAGE, NEW YORK	C / TBD	** NO PCO **	Jan 2019	Jan 2020	2	4,198K	Y		
6.1.1) MCM USV ^(†)		2019	Textron / Hunt Valley, MD	C / TBD	NAVSEA	Jan 2019	Jan 2021	2	17,480K	Y		
6.1.2) MH D&R Rig (for UISS craft) ^(†)		2019	Raytheon Portsmouth, RI / TBD	C / TBD	NAVSEA	Jan 2019	Jan 2021	2	6,100K	Y		

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2019 Navy																				Date: February 2018																	
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 15										P-1 Line Item Number / Title: 1601 / LCS MCM Mission Modules										Item Number / Title [DODIC]: 1 / LCS MCM Mission Packages																	
Cost Elements (Units in Each)							Fiscal Year 2019												Fiscal Year 2020													B A L A N C E					
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2018	BAL DUE AS OF 1 OCT	Calendar Year 2019												Calendar Year 2020																		
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							
1.1.1) Unmanned Influenced Sweep System ⁽¹⁾																																					
	1	2018	NAVY	1	0		1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1		0				
	1	2019	NAVY	1	0	1		A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1				
2.1.1) AMNS ⁽²⁾																																					
Prior Years Deliveries: 3																																					
	2	2017	NAVY	1	0	1	1																														0
	2	2018	NAVY	2	0	2	-	-	-	-	-	-	-	-	-	1	1																	0			
	2	2019	NAVY	2	0	2						A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	0			
2.1.2) ALMDS ⁽³⁾																																					
Prior Years Deliveries: 4																																					
	3	2017	NAVY	1	1	0																												0			
	3	2018	NAVY	1	0	1	-	-	-	-	-	-	-	-	-	-	-	1																0			
6.1.1) MCM USV ⁽⁸⁾																																					
	4	2019	NAVY	2	0	2						A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2			
6.1.2) MH D&R Rig (for UISS craft) ⁽⁹⁾																																					
	5	2019	NAVY	2	0	2						A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2			
								O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P						

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Exhibit P-21, Production Schedule: PB 2019 Navy																				Date: February 2018												
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 15										P-1 Line Item Number / Title: 1601 / LCS MCM Mission Modules										Item Number / Title [DODIC]: 1 / LCS MCM Mission Packages												
Cost Elements (Units in Each)							Fiscal Year 2021										Fiscal Year 2022														BALANCE	
OCCO#	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		
1.1.1) Unmanned Influenced Sweep System ⁽¹⁾																																
	1	2018	NAVY	1	1	0																									0	
	1	2019	NAVY	1	0	1	1																									0
2.1.1) AMNS ⁽²⁾																																
Prior Years Deliveries: 3																																
	2	2017	NAVY	1	1	0																									0	
	2	2018	NAVY	2	2	0																									0	
	2	2019	NAVY	2	2	0																									0	
2.1.2) ALMDS ⁽³⁾																																
Prior Years Deliveries: 4																																
	3	2017	NAVY	1	1	0																									0	
	3	2018	NAVY	1	1	0																									0	
6.1.1) MCM USV ⁽⁸⁾																																
	4	2019	NAVY	2	0	2	-	-	-	1	-	-	1																		0	
6.1.2) MH D&R Rig (for UISS craft) ⁽⁹⁾																																
	5	2019	NAVY	2	0	2	-	-	-	1	-	-	1	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	0	

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Exhibit P-21, Production Schedule: PB 2019 Navy			Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 15		P-1 Line Item Number / Title: 1601 / LCS MCM Mission Modules			Item Number / Title [DODIC]: 1 / LCS MCM Mission Packages

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
		MSR For 2019	1-8-5 For 2019	MAX For 2019	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	Textron - Hunt Valley, MD	1	6	12	3	3	24	27	3	3	24	27
2	Raytheon - Portsmouth, RI	2	3	8	3	0	17	17	3	3	17	20
3	Northrop Grumman - Melborn, FL	1	4	8	3	0	18	18	3	3	18	21
4	Textron - Hunt Valley, MD	1	6	12	3	0	24	24	0	0	24	24
5	Raytheon Portsmouth, RI - TBD	1	2	8	3	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-40, Budget Line Item Justification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 15: Other Ship Support							P-1 Line Item Number / Title: 1602 / LCS ASW Mission Modules					
ID Code (A=Service Ready, B=Not Service Ready): A				Program Elements for Code B Items: N/A				Other Related Program Elements: 0603596N				
Line Item MDAP/MAIS Code: 000												
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	0.000	0.000	57.294	0.000	57.294	52.754	63.181	34.104	34.777	142.398	384.508
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	0.000	0.000	57.294	0.000	57.294	52.754	63.181	34.104	34.777	142.398	384.508
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	0.000	0.000	57.294	0.000	57.294	52.754	63.181	34.104	34.777	142.398	384.508
<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>)	-	0.080	0.506	0.578	-	0.578	0.399	0.384	0.428	0.468	Continuing	Continuing
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Description: The Anti-Submarine Warfare (ASW) mission package enables the Littoral Combat Ship (LCS) to conduct detect-to-engage operations against modern submarines that pose a threat. Specific ASW capabilities include protecting forces in transit, protecting joint operating areas, and establishing ASW barriers. The ASW MP is developed to provide the warfighter capabilities that can be employed for ASW area search as well as high value unit escort missions and composed of an Escort Mission Module (EMM), a Torpedo Defense Module (TDM), and an Aviation Module. The EMM components include a Variable Depth Sonar (VDS), a Multi-Function Towed Array (MFTA), associated winch and handling equipment, and a MPCE Sonar Signal Processing suite. The Torpedo Defense Module utilizes the Light Weight Tow Torpedo countermeasures system, associated winch and handling equipment, and a control station. The Aviation Module provides airborne threat localization and engagement capability through an MH-60R helicopter with MK54 torpedoes and sonobuoys, as well as associated storing and handling gear. The ability to incorporate a Fire Scout Vertical Takeoff and Landing Unmanned Aerial Vehicle is an additional capability within the Aviation Module. An ASW Mission Package is deployable and capable of meeting its focused mission requirements on an LCS only when it includes the full complement of Common Mission Modules Equipment (Line Item Number 1600) and the full complement of mission systems that comprise the LCS ASW Mission Module (Line Item Number 1602). If mission systems are removed from the mission module in any given Fiscal Year, the ASW Mission Package will be non-deployable until the mission system is replaced in a subsequent Fiscal Year. The number of LCS mission packages must not only keep pace with the number of ships, more are required to account for the mission packages that will be forward staged or unavailable due to periodic maintenance requirements. Other Related Budgets: BLIs: OPN 1600, OPN 1601, OPN 1603, RDT&E 0603596N [P5 / (AS001) - ASW Escort Module]: The ASW Escort Mission Module (MM) contains the sensors and signal processing required to detect, classify and localize submarine threats. The Escort MM consists of two towed sensors; a VDS active source and an MFTA passive/bi-static active receiver; launch, handling and recovery equipment for the towed sensors, and AN/SQQ-89 V(15) active and passive signal processing applications. [P5 / (AS002) - Torpedo Defense Countermeasure Module]: The Light Weight Tow (LWT) system is a towed persistent torpedo countermeasure optimized for use in littoral conditions. LWT is a standalone autonomous system capable of defeating threat torpedoes through soft-kill to independently increase LCS Platform Probability of Survival.												

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 15: Other Ship Support		P-1 Line Item Number / Title: 1602 / LCS ASW Mission Modules
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0603596N
Line Item MDAP/MAIS Code: 000		
[P5 / (AS005) - ASW Mission Package Containers]: The foundation of each ASW Support Container (SC) is an International Organization for Standardization (ISO) compliant shipping container. The ISO shipping containers are outfitted with Unistrut rails (for shelving and drawer attachments), lighting (standard/emergency), fire/smoke alarms, service panels for power, and a circuit breaker box. From this base container configuration, a variety of racks, cradles, and handling gear can be installed as needed to form a SC. [P5 / (AS900) - Consulting Services]: Provides program management support, engineering and technical support, studies, analysis and evaluation on mission module systems.		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy								Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 15: Other Ship Support						P-1 Line Item Number / Title: 1602 / LCS ASW Mission Modules				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: 0603596N				
Line Item MDAP/MAIS Code: 000										
Exhibits Schedule					Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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 / LCS ASW Mission Modules	P-5a, P-21			- / 0.000	- / 0.000	- / 0.000	- / 57.294	- / 0.000	- / 57.294
P-3a	1 / ASW MP Modifications (Permanent Installation)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-40	Total Gross/Weapon System Cost				- / 0.000	- / 0.000	- / 0.000	- / 57.294	- / 0.000	- / 57.294
Exhibits Schedule					FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / LCS ASW Mission Modules	P-5a, P-21			- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / ASW MP Modifications (Permanent Installation)				- / 10.021	- / 19.399	- / 9.278	- / 9.840	- / 85.949	- / 134.487
P-40	Total Gross/Weapon System Cost				- / 52.754	- / 63.181	- / 34.104	- / 34.777	- / 142.398	- / 384.508
*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 2019 funding includes the procurement of two ASW Mission Packages, as well as associated support costs. In FY17, the Navy awarded a contract to Raytheon Corporation, Portsmouth, RI, to build the ASW EMM. Raytheon is developing the initial EMM Pre-Production Test Article (PPTA) that will undergo acoustic characterization end-to-end integration testing and two phases of dockside testing in 3Q FY 2018 and 4Q FY 2018. Raytheon is on track to deliver the initial EMM PPTA in Q1 FY 2019. Following delivery, white ship testing is planned for 2Q FY 2019 to characterize hydrodynamic performance. LCS ship modification planning and design efforts are proceeding as planned in FY 2018, leading to modifications to USS Fort Worth (LCS 3) that will allow embarkation of the ASW MP in early FY 2019 for formal testing. Contractor testing and two phases of formal developmental testing (including DOE runs) of the EMM on the Freedom variant will support the production decision in Q3FY19. In addition, the EMM TDP will be validated, a PCA will be completed, manufacturing procedures will be developed, manufacturing material and tooling will be procured, a PRR will be completed, and integration efforts will be underway on the Independence variant prior to the production decision.										

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Exhibit P-5, Cost Analysis: PB 2019 Navy													Date: February 2018								
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 15							P-1 Line Item Number / Title: 1602 / LCS ASW Mission Modules							Item Number / Title [DODIC]: 1 / LCS ASW Mission Modules							
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:											
Resource Summary				Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
Procurement Quantity <i>(Units in Each)</i>				-			-			-			-			-			-		
Gross/Weapon System Cost <i>(\$ in Millions)</i>				0.000			0.000			0.000			57.294			0.000			57.294		
Less PY Advance Procurement <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Net Procurement (P-1) <i>(\$ in Millions)</i>				0.000			0.000			0.000			57.294			0.000			57.294		
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Total Obligation Authority <i>(\$ in Millions)</i>				0.000			0.000			0.000			57.294			0.000			57.294		
(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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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 - (AS001) - ASW Escort Module Cost																					
Recurring Cost																					
1.1.1) Variable Depth Sonar ^(†)		-	-	0.000	-	-	0.000	-	-	0.000	13,180K	2	26.360	-	-	0.000	13,180K	2	26.360		
1.1.2) Multi Function Towed Array ^(†)		-	-	0.000	-	-	0.000	-	-	0.000	5,116K	2	10.232	-	-	0.000	5,116K	2	10.232		
Subtotal: Recurring Cost		-	-	0.000	-	-	0.000	-	-	0.000	-	-	36.592	-	-	0.000	-	-	36.592		
Non Recurring Cost																					
1.2.1) Production Readiness/Production NRE ⁽¹⁾		-	-	0.000	-	-	0.000	-	-	0.000	-	-	12.400	-	-	0.000	-	-	12.400		
Subtotal: Non Recurring Cost		-	-	0.000	-	-	0.000	-	-	0.000	-	-	12.400	-	-	0.000	-	-	12.400		
Subtotal: Hardware - (AS001) - ASW Escort Module Cost		-	-	0.000	-	-	0.000	-	-	0.000	-	-	48.992	-	-	0.000	-	-	48.992		
Hardware - (AS002) - Torpedo Defense Countermeasure Module Cost																					
Recurring Cost																					
2.1.1) Light Weight Tow ^(†)		-	-	0.000	-	-	0.000	-	-	0.000	1,502K	2	3.004	-	-	0.000	1,502K	2	3.004		
Subtotal: Recurring Cost		-	-	0.000	-	-	0.000	-	-	0.000	-	-	3.004	-	-	0.000	-	-	3.004		
Subtotal: Hardware - (AS002) - Torpedo Defense Countermeasure Module Cost		-	-	0.000	-	-	0.000	-	-	0.000	-	-	3.004	-	-	0.000	-	-	3.004		

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Exhibit P-5, Cost Analysis: PB 2019 Navy													Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 15						P-1 Line Item Number / Title: 1602 / LCS ASW Mission Modules							Item Number / Title [DODIC]: 1 / LCS ASW Mission Modules					
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 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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 - (AS005) - ASW Mission Package Containers Cost																		
Recurring Cost																		
3.1.1) ASW Containers ^(t)	-	-	0.000	-	-	0.000	-	-	0.000	612,500.00	8	4.900	-	-	0.000	612,500.00	8	4.900
Subtotal: Recurring Cost	-	-	0.000	-	-	0.000	-	-	0.000	-	-	4.900	-	-	0.000	-	-	4.900
Subtotal: Hardware - (AS005) - ASW Mission Package Containers Cost	-	-	0.000	-	-	0.000	-	-	0.000	-	-	4.900	-	-	0.000	-	-	4.900
Support - (AS900) - Consulting Services Cost																		
4.1) Consulting Services	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.398	-	-	0.000	-	-	0.398
Subtotal: Support - (AS900) - Consulting Services Cost	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.398	-	-	0.000	-	-	0.398
Gross/Weapon System Cost	-	-	0.000	-	-	0.000	-	-	0.000	-	-	57.294	-	-	0.000	-	-	57.294

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

Footnotes:

⁽¹⁾ In FY19 the Production Readiness/Production NRE will ensure smooth and timely transition from development of the Pre-Production Test Article (PPTA) to the production of LRIP units. NRE efforts include, transition the PPTA TDP to manufacturing drawings, completion of validation/verification procedures, procurement of manufacturing materials and tooling - to start up the production line. The NRE is a contractual requirement.

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Exhibit P-5a, Procurement History and Planning: PB 2019 Navy									Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 15			P-1 Line Item Number / Title: 1602 / LCS ASW Mission Modules						Item Number / Title [DODIC]: 1 / LCS ASW Mission Modules			
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) Variable Depth Sonar ^(†)		2019	Raytheon / Portsmouth, RI	C / FFP	NUWC Newport	Jan 2019	Sep 2020	2	13,180K	Y		
1.1.2) Multi Function Towed Array ^(†)		2019	Lockheed Martin / Syracuse, NY	C / FFP	NAVSEA	Jan 2019	Jan 2021	2	5,116K	Y		
2.1.1) Light Weight Tow		2019	TBD / TBD	C / TBD	NAVSEA	Jan 2019	Jan 2021	2	1,502K	N		
3.1.1) ASW Containers		2019	NORTHROP GRUMMAN / BETHPAGE, NEW YORK	C / FFP	NAVSEA	Jan 2019	Jan 2021	8	612,500.00	N		

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2019 Navy																				Date: February 2018													
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 15										P-1 Line Item Number / Title: 1602 / LCS ASW Mission Modules										Item Number / Title [DODIC]: 1 / LCS ASW Mission Modules													
Cost Elements (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			
1.1.1) Variable Depth Sonar																																	
	1	2019	NAVY	2	0	2				A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	
1.1.2) Multi Function Towed Array																																	
	2	2019	NAVY	2	0	2				A -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2		
							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 2019 Navy																				Date: February 2018												
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 15										P-1 Line Item Number / Title: 1602 / LCS ASW Mission Modules										Item Number / Title [DODIC]: 1 / LCS ASW Mission Modules												
Cost Elements (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		
1.1.1) Variable Depth Sonar																																
	1	2019	NAVY	2	1	1	-	1																								0
1.1.2) Multi Function Towed Array																																
	2	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 2019 Navy									Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 15					P-1 Line Item Number / Title: 1602 / LCS ASW Mission Modules				Item Number / Title [DODIC]: 1 / LCS ASW Mission Modules			
MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
		MSR For 2019	1-8-5 For 2019	MAX For 2019	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	Raytheon - Portsmouth, RI	1	4	8	3	0	20	20	0	0	20	20
2	Lockheed Martin - Syracuse, NY	1	4	8	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-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 15				P-1 Line Item Number / Title: 1602 / LCS ASW Mission Modules						Modification Number / Title: 1 / ASW MP Modifications		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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	10.021	19.399	9.278	9.840	85.949	134.487
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	10.021	19.399	9.278	9.840	85.949	134.487
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	10.021	19.399	9.278	9.840	85.949	134.487
<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: For LCS Freedom variant, seaframe changes include installation of a fairlead and bellmouth thru the starboard transom, and a winch foundation. For LCS Independence variant, seaframe changes include installation of a fairlead and bellmouth through the starboard amah, a winch foundation, and a sheave. [ASW MP Kits] Funds the modifications to the current LCS designs to accommodate the ASW mission package configuration. All LCS ships will require the installation of the ASW Ship Alteration. ASW Ship alterations are funded in the year of installation(aka, year of need), not in the year of system/Module procurement												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 15				P-1 Line Item Number / Title: 1602 / LCS ASW Mission Modules						Modification Number / Title: 1 / ASW MP Modifications			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: ASW Mission Package Light Weight Tow				Modification Type: Permanent Installation				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: ASW MP Modifications													
A Kits													
Recurring													
1.1.1) ASW MP Kits - NonOrganic	- / -	- / -	- / -	- / -	- / -	- / -	2 / 1.799	4 / 3.670	2 / 1.872	2 / 1.708	18 / 19.125	28 / 28.174	
Subtotal: Recurring	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / 1.799	- / 3.670	- / 1.872	- / 1.708	- / 19.125	- / 28.174	
Subtotal: ASW MP Modifications	- / -	- / -	- / -	- / -	- / -	- / -	2 / 1.799	4 / 3.670	2 / 1.872	2 / 1.708	18 / 19.125	28 / 28.174	
Subtotal: Procurement, All Modification Items	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / 1.799	- / 3.670	- / 1.872	- / 1.708	- / 19.125	- / 28.174	
Installation													
Modification Item 1 of 1: ASW MP Modifications	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 7.207	- / 13.659	- / 6.351	- / 7.177	- / 60.125	- / 94.519	
Subtotal: Installation	- / 0.000	- / -	- / -	- / -	- / -	- / -	- / 7.207	- / 13.659	- / 6.351	- / 7.177	- / 60.125	- / 94.519	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	0.000	0.000	0.000	0.000	10.021	19.399	9.278	9.840	85.949	134.487	

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Exhibit P-3a, Individual Modification: PB 2019 Navy											Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 15											P-1 Line Item Number / Title: 1602 / LCS ASW Mission Modules											Modification Number / Title: 1 / ASW MP Modifications										
ID Code (A=Service Ready, B=Not Service Ready) :											MDAP/MAIS Code:																					
Modification Item 1 of 1: ASW MP Modifications																																
Manufacturer Information																																
Manufacturer Name: Planning Yard Services													Manufacturer Location: Var																			
Administrative Leadtime (in Months): 1													Production Leadtime (in Months): 3																			
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023						
Contract Dates										Nov 2018				Nov 2019				Nov 2020				Nov 2021				Nov 2022						
Delivery Dates										Feb 2019				Feb 2020				Feb 2021				Feb 2022				Feb 2023						
Installation Information																																
Method of Implementation: [none specified]:: Installation Name: ASW MP Kits																																
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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 2017		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -						
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		2 / 7.207		- / -		- / -		- / -		0 / 0.000		2 / 7.207						
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		4 / 13.659		- / -		- / -		0 / 0.000		4 / 13.659						
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		2 / 6.351		- / -		0 / 0.000		2 / 6.351						
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		2 / 7.177		0 / 0.000		2 / 7.177						
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		18 / 60.125		18 / 60.125						
Total		- / -		- / -		- / -		- / -		- / -		- / -		- / -		2 / 7.207		4 / 13.659		2 / 6.351		2 / 7.177		18 / 60.125		28 / 94.519						
Installation Schedule																																
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	-	18	28	
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2	2	-	-	2	-	-	-	2	18	28	

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 15: Other Ship Support							P-1 Line Item Number / Title: 1603 / LCS SUW Mission Modules					
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: 000												
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	99.760	21.064	52.960	26.006	0.000	26.006	26.566	15.342	15.711	52.511	5.104	315.024
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	99.760	21.064	52.960	26.006	0.000	26.006	26.566	15.342	15.711	52.511	5.104	315.024
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	99.760	21.064	52.960	26.006	0.000	26.006	26.566	15.342	15.711	52.511	5.104	315.024
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares (<i>\$ in Millions</i>)	-	-	1.984	1.559	-	1.559	-	-	-	-	-	3.543
Flyaway Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Dollars</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The FY 2019 funding request was reduced by \$.066 million to reflect the Department of Navy's effort to support the Office of Management and Budget directed reforms for Efficiency and Effectiveness that include a lean, accountable, more efficient government.

The Surface Warfare (SUW) MP increases firepower and offensive/defensive capabilities against large numbers of highly maneuverable, fast, small craft threats, giving LCS the ability to protect the sea lanes and move a force quickly through a choke point or other strategic waterway. With the SUW MP embarked, LCS has enhanced detection and engagement capability against enemy small craft and similar littoral surface threats.

The SUW MP is composed of the Gun Mission Module (GMM), Maritime Security Module (MSM), Surface-to-Surface Missile Module (SSMM), and an Aviation Module. The SUW MP with the GMM, MSM, and Aviation Module (with the MH-60R) achieved Initial Operational Capability in FY 2014. The GMM comprises of two high velocity 30mm cannons to augment the ship's 57mm gun and the MSM supports the embarkation of visit, board, search, and seizure (VBSS) teams.

Six deployable SUW MPs with GMM & MSM have been delivered to the Fleet and three more are in production. An SUW MP is deployable and capable of meeting its focused mission requirements on an LCS only when it includes the full complement of Common Mission Modules Equipment (Line Item Number 1600) and the full complement of mission systems that composed of the LCS SUW Mission Module (Line Item Number 1603). If mission systems are removed from the mission module in any given Fiscal Year, the SUW MP will be non-deployable until the mission system is added in a subsequent Fiscal Year.

The program will increase capability of the SUW MP with the addition of the MQ-8 Fire Scout Vertical Take-off and Landing Tactical Unmanned Aerial Vehicle (VTUAV) for the detection, identification, and classification of surface contacts, and a Surface-to-Surface Missile Module (SSMM) to meet the long range engagement capability against surface threats.

Other Related Budgets: BLIs: OPN 1600, OPN 1601, OPN 1602, WPN 4221, RDT&E 0603596N

[P40A / SU001 - GUN MODULE]: The gun mission module (GMM) is comprised of two high velocity 30mm cannons to augment the ship's 57mm gun, and embarked support aircraft (MH-60R helicopter with Hellfire missile and the MQ-8B Fire Scout Vertical Take-off and Landing Tactical Unmanned Aerial Vehicle (VTUAV)) for the detection, identification, and classification of surface contacts.

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 15: Other Ship Support		P-1 Line Item Number / Title: 1603 / LCS SUW Mission Modules
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: 000		
[P40A / SU002 - SURFACE-TO-SURFACE MISSILE MODULE (SSMM)]: The Surface-to-Surface Missile Module (SSMM) will provide in-close and eventually an over-the-horizon engagement capability against surface threats. [P40A / SURFACE-TO-SURFACE MISSILE MODULE]: The program plans to conduct a Production Readiness Review (PRR) in late FY 2018 to inform a production decision to support planned SSMM procurements beginning in FY 2018. To ensure that planned procurements are low risk, results from integration (including combat system and software integration efforts) on both the Freedom and Independence variant hulls and formal testing completed on the Freedom variant hull by Q3 FY2018 will inform the production decision. These risk reduction efforts include results from 28 missile shots conducted on two odd hull platforms (LCS 5 and 7), successful embark/debark events on both hull variants (includes an end-to-end integration and TRACKEX event in Q1 FY 2017 on an Independence variant hull), and validation and verification of the SSMM Technical Data Package (TDP). [P40A / SU003 - MARITIME SECURITY MODULE]: The Maritime Security Module (MSM) provides LCS with the capability to conduct Level II visit, board, search and seizure (VBSS) operations and the ability to conduct anti-piracy and maritime interdiction missions. This budget line procures hardware for a full MSM that includes two 11 meter Rigid Hull Inflatable Boats (RHIB), two boat cradles, a VBSS Allowance Equipment List (AEL) for communications and tactical equipment, and habitability and support containers. Funding also includes production, assembly, installation and checkout of all mission system components. [P40A / SU900 - CONSULTING SERVICES]: Provides program management support, engineering and technical support, studies, analysis and evaluation on mission module systems.		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy								Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 15: Other Ship Support						P-1 Line Item Number / Title: 1603 / LCS SUW Mission Modules				
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: 000										
Exhibits Schedule					Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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	LCS SUW Mission Packages	P-5a, P-21			- / 99.760	- / 21.064	- / 52.960	- / 26.006	- / -	- / 26.006
P-40	Total Gross/Weapon System Cost				- / 99.760	- / 21.064	- / 52.960	- / 26.006	- / 0.000	- / 26.006
*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications. Title represents the P-40a Title when only the P-40a Summary/Total is shown.										
Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.										

Justification:

FY 2019 funding will procure 2 Surface to Surface Mission Module (SSMM), as well as associated production engineering and consulting services.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 15							P-1 Line Item Number / Title: 1603 / LCS SUW Mission Modules								Aggregated Items Title: LCS SUW Mission Packages					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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) SU001 - GUN MODULE																				
1.1) MK-50 Gun Module ^(†)	A		5,296K	10	52.963	3,552K	2	7.103	3,579K	4	14.316	-	-	-	-	-	-	-	-	-
1.2) MK-46 Gun Weapon System ^(†)	A		2,844K	10	28.445	4,608K	2	9.216	4,657K	4	18.628	-	-	-	-	-	-	-	-	-
1.3) PRODUCTION ENGINEERING SUPPORT ⁽¹⁾	A		-	-	6.915	-	-	1.804	-	-	1.996	-	-	2.079	-	-	-	-	-	2.079
Subtotal: 1) SU001 - GUN MODULE			-	-	88.323	-	-	18.123	-	-	34.940	-	-	2.079	-	-	-	-	-	2.079
2) SU002 - SURFACE-TO-SURFACE MISSILE MODULE (SSMM)																				
2.1) SURFACE-TO-SURFACE MISSILE MODULE ^(†)	A		-	-	-	-	-	-	11,036K	1	11.036	11,076K	2	22.153	-	-	-	11,076K	2	22.153
2.2) PRODUCTION ENGINEERING SUPPORT ⁽²⁾	A		-	-	-	-	-	-	-	-	0.595	-	-	0.864	-	-	-	-	-	0.864
Subtotal: 2) SU002 - SURFACE-TO-SURFACE MISSILE MODULE (SSMM)			-	-	0.000	-	-	-	-	-	11.631	-	-	23.017	-	-	-	-	-	23.017
3) SU003 - MARITIME SECURITY MODULE																				
3.1) MARITIME SECURITY MODULE ^(†)	A		2,558K	3	7.675	2,201K	1	2.201	2,653K	2	5.306	-	-	-	-	-	-	-	-	-
3.2) PRODUCTION ENGINEERING ⁽³⁾	A		-	-	1.209	-	-	0.230	-	-	0.563	-	-	0.280	-	-	-	-	-	0.280
Subtotal: 3) SU003 - MARITIME SECURITY MODULE			-	-	8.884	-	-	2.431	-	-	5.869	-	-	0.280	-	-	-	-	-	0.280
4) SU900 - CONSULTING SERVICES																				
4.1) CONSULTING SERVICES	A		-	-	2.553	-	-	0.510	-	-	0.520	-	-	0.630	-	-	-	-	-	0.630
Subtotal: 4) SU900 - CONSULTING SERVICES			-	-	2.553	-	-	0.510	-	-	0.520	-	-	0.630	-	-	-	-	-	0.630
Total			-	-	99.760	-	-	21.064	-	-	52.960	-	-	26.006	-	-	-	-	-	26.006

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⁾ Production Engineering is required 24 months after procurement to fund factory acceptance testing in year of delivery.

⁽²⁾ Production Engineering is required 24 months after procurement to fund factory acceptance testing in year of delivery.

⁽³⁾ Production Engineering is required 12 months after procurement to fund factory acceptance testing in year of delivery.

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Exhibit P-5a, Procurement History and Planning: PB 2019 Navy									Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 15				P-1 Line Item Number / Title: 1603 / LCS SUW Mission Modules					Aggregated Items: LCS SUW Mission Packages			
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) SU001 - GUN MODULE												
1.1) MK-50 Gun Module ^(†)		2016	NORTHROP GRUMMAN / BETHPAGE, NEW YORK	SS / FFP	NAVSEA	Apr 2017	Oct 2018	4	4,536K	Y		
1.1) MK-50 Gun Module ^(†)		2017	NORTHROP GRUMMAN / BETHPAGE, NEW YORK	C / FFP	NAVSEA	Jun 2017	Dec 2018	2	3,552K	Y		
1.1) MK-50 Gun Module ^(†)		2018	NORTHROP GRUMMAN / BETHPAGE, NEW YORK	C / FFP	NAVSEA	Mar 2018	Sep 2019	4	3,579K	Y		
1.2) MK-46 Gun Weapon System ^(†)		2016	General Dynamics Land Systems / Sterling Heights, MI	SS / FFP	NAVSEA	Mar 2016	Sep 2017	2	4,566K	Y		
1.2) MK-46 Gun Weapon System ^(†)		2017	General Dynamics Land Systems / Sterling Heights, MI	SS / FFP	NAVSEA	Apr 2017	Oct 2018	2	4,608K	Y		
1.2) MK-46 Gun Weapon System ^(†)		2018	General Dynamics Land Systems / Sterling Heights, MI	C / TBD	NAVSEA	Mar 2018	Jan 2020	4	4,657K	Y		
2) SU002 - SURFACE-TO-SURFACE MISSILE MODULE (SSMM)												
2.1) SURFACE-TO-SURFACE MISSILE MODULE ^(†)		2018	NORTHROP GRUMMAN / BETHPAGE, NEW YORK	C / FFP	NAVSEA	Mar 2018	Sep 2019	1	11,036K	Y		
2.1) SURFACE-TO-SURFACE MISSILE MODULE ^(†)		2019	NORTHROP GRUMMAN / BETHPAGE, NEW YORK	C / FFP	NAVSEA	Jan 2019	Jul 2020	2	11,076K	Y		
3) SU003 - MARITIME SECURITY MODULE												
3.1) MARITIME SECURITY MODULE ^(†)		2017	Various / Various	C / FFP	NAVSEA	Apr 2017	Apr 2018	1	2,201K	Y		
3.1) MARITIME SECURITY MODULE ^(†)		2018	Various / Various	C / FFP	NAVSEA	Mar 2018	Mar 2019	2	2,653K	Y		
^(†) indicates the presence of a P-21												

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Exhibit P-21, Production Schedule: PB 2019 Navy																								Date: February 2018							
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 15										P-1 Line Item Number / Title: 1603 / LCS SUW Mission Modules										Aggregated Items: LCS SUW Mission Packages											
Items (Units in Each)							Fiscal Year 2016										Fiscal Year 2017													B A L A N C E	
O C C #	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) SU001 - GUN MODULE																															
1.1) MK-50 Gun Module																															
Prior Years Deliveries: 6																															
	12	2016	NAVY	4	0	4														A -	-	-	-	-	-	-	4				
	12	2017	NAVY	2	0	2														A -			-	-	-	2					
	12	2018	NAVY	4	0	4																				4					
1.2) MK-46 Gun Weapon System																															
Prior Years Deliveries: 8																															
	13	2016	NAVY	2	0	2						A -	-	-	-	-	-	-	-	-	-	-	-	-	-	2	0				
	13	2017	NAVY	2	0	2														A -	-	-	-	-	-	2					
	13	2018	NAVY	4	0	4																				4					
2) SU002 - SURFACE-TO-SURFACE MISSILE MODULE (SSMM)																															
2.1) SURFACE-TO-SURFACE MISSILE MODULE																															
	14	2018	NAVY	1	0	1																				1					
	14	2019	NAVY	2	0	2																				2					
3) SU003 - MARITIME SECURITY MODULE																															
3.1) MARITIME SECURITY MODULE																															
Prior Years Deliveries: 3																															
	15	2017	NAVY	1	0	1														A -	-	-	-	-	-	1					
	15	2018	NAVY	2	0	2																				2					
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	

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Exhibit P-21, Production Schedule: PB 2019 Navy																				Date: February 2018													
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 15										P-1 Line Item Number / Title: 1603 / LCS SUW Mission Modules										Aggregated Items: LCS SUW Mission Packages													
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) SU001 - GUN MODULE																																	
1.1) MK-50 Gun Module																																	
Prior Years Deliveries: 6																																	
	12	2016	NAVY	4	0	4	-	-	-	-	-	-	-	-	-	-	-	-	2	-	2							0					
	12	2017	NAVY	2	0	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2							0					
	12	2018	NAVY	4	0	4						A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2				
1.2) MK-46 Gun Weapon System																																	
Prior Years Deliveries: 8																																	
	13	2016	NAVY	2	2	0																					0						
	13	2017	NAVY	2	0	2	-	-	-	-	-	-	-	-	-	-	-	-	2									0					
	13	2018	NAVY	4	0	4						A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4				
2) SU002 - SURFACE-TO-SURFACE MISSILE MODULE (SSMM)																																	
2.1) SURFACE-TO-SURFACE MISSILE MODULE																																	
	14	2018	NAVY	1	0	1						A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0				
	14	2019	NAVY	2	0	2															A	-	-	-	-	-	-	-	-	-	-	-	2
3) SU003 - MARITIME SECURITY MODULE																																	
3.1) MARITIME SECURITY MODULE																																	
Prior Years Deliveries: 3																																	
	15	2017	NAVY	1	0	1	-	-	-	-	-	-	1															0					
	15	2018	NAVY	2	0	2						A	-	-	-	-	-	-	-	-	-	-	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 2019 Navy																							Date: February 2018											
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 15										P-1 Line Item Number / Title: 1603 / LCS SUW Mission Modules													Aggregated Items: LCS SUW Mission Packages											
Items <i>(Units in Each)</i>							Fiscal Year 2020													Fiscal Year 2021													BALANCE	
OCO	MFR#	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	Calendar Year 2020							Calendar Year 2021																				
							OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP				
1) SU001 - GUN MODULE																																		
1.1) MK-50 Gun Module																																		
Prior Years Deliveries: 6																																		
	12	2016	NAVY	4	4	0																												0
	12	2017	NAVY	2	2	0																												0
	12	2018	NAVY	4	2	2	2																											0
1.2) MK-46 Gun Weapon System																																		
Prior Years Deliveries: 8																																		
	13	2016	NAVY	2	2	0																												0
	13	2017	NAVY	2	2	0																												0
	13	2018	NAVY	4	0	4	-	-	-	2	2																							0
2) SU002 - SURFACE-TO-SURFACE MISSILE MODULE (SSMM)																																		
2.1) SURFACE-TO-SURFACE MISSILE MODULE																																		
	14	2018	NAVY	1	1	0																												0
	14	2019	NAVY	2	0	2	-	-	-	-	-	-	-	-	2																			0
3) SU003 - MARITIME SECURITY MODULE																																		
3.1) MARITIME SECURITY MODULE																																		
Prior Years Deliveries: 3																																		
	15	2017	NAVY	1	1	0																												0
	15	2018	NAVY	2	2	0																												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 2019 Navy								Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 15					P-1 Line Item Number / Title: 1603 / LCS SUW Mission Modules				Aggregated Items: LCS SUW Mission Packages		

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Year)			Procurement Leadtime (Months)							
		MSR For 2019	1-8-5 For 2019	MAX For 2019	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 - BETHPAGE, NEW YORK	1	2	8	0	3	18	21	3	3	18	21
2	General Dynamics Land Systems - Sterling Heights, MI	2	6	18	3	0	22	22	3	0	18	18
3	NORTHROP GRUMMAN - BETHPAGE, NEW YORK	1	2	8	3	3	18	21	3	3	18	21
4	Various - Various	1	4	8	2	2	12	14	2	2	12	14

"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 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 15: Other Ship Support							P-1 Line Item Number / Title: 1604 / LCS In-Service Modernization					
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	0.000	74.426	70.526	0.000	70.526	122.072	224.143	363.812	459.770	-	1,314.749
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	0.000	74.426	70.526	0.000	70.526	122.072	224.143	363.812	459.770	-	1,314.749
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	0.000	74.426	70.526	0.000	70.526	122.072	224.143	363.812	459.770	-	1,314.749
<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: Modernization/maintenance efforts supports LCS requirements to remain operational and meet mission needs. This line provides funding for mandatory safety design changes, cyber security remediation actions, habitability modifications, and obsolescence and reliability resolution to maintain Littoral Combat Ships (LCS) operational availability and achieve the full 25-year service life. Funding covers planned CNO availabilities and includes two years of planning costs and long lead time materials (LLTM). LN001 - Habitability Modification Habitability Mod: Modifications to increase the permanent berths to 98 on the FREEDOM and INDEPENDENCE variants for LCS 11 and LCS 13-20. The change addresses the following additional racks in berthing spaces, increased refrigeration (chill and freeze), increased dry provision stores, increased potable water capability, increased solid waste storage, and laundry capability, to support the increase in core crew size from 40 to 50 personnel. Non-Rack Hab Mod : FY19 and FY20 funding, realigned from OPN BLI 0944, are to accomplish the LCS 5-8 Habitability Mod efforts not completed during the LCS 5-8 Post Delivery Availabilities (PSA). These efforts include increased solid waste storage, refrigeration and freezer capacity, reverse osmosis plant capacity and dry provision storage capacity and will be accomplished during the first Ship Restricted Availability (SRA) for each ship. LN002 - LCS Ships Class Safety Design Changes Safety modifications fund the redesigned stern ramp back-fit on five FREEDOM variant ships (LCS 11/13/15/17/19) to support 11M Rigid Hull Inflatable Boats (RHIB) operations and the installation of bridge wing for safe and effective operation of four INDEPENDENCE variant ships (LCS 14/16/18/20). Safety design changes will be incorporated in-line for LCS 21 and follow. This funding also supports installation of the Man Overboard Indicator (MOBI) system on LCS 9-20. Note: Earlier ships changes were completed in prior years. LN003 - LCS Maintenance Modernization Modernization funds back-fit and fact-of-life obsolescence changes on the Littoral Combat Ships (LCS) to include: - Mandatory Safety changes eliminate or reduce hazards to ship personnel or components. Safety considerations include human (includes human/system interfaces), toxic/hazardous materials and substances, testing, logistical support, weapons, and munitions/explosives. - Cyber Security changes protect data and information processed by installed networks and information systems. This includes hardware, software, and firmware that provide integrity, confidentiality, non-repudiation, identification and authentication, and availability of shipboard systems. - Obsolescence changes are required to prevent systems from becoming incompatible with newer technologies, or to update systems.												

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 15: Other Ship Support		P-1 Line Item Number / Title: 1604 / LCS In-Service Modernization
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		
- Reliability changes are key to the LCS reaching its full operational capabilities for the 25 year service life. System and structural reliability modifications will increase the LCS Ao and performance, while decreasing maintenance costs. - Maintainability changes improve ease of system maintenance by increasing the average time between required maintenance activities and reduce the Mean Time To Repair (MTTR).		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy								Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 15: Other Ship Support						P-1 Line Item Number / Title: 1604 / LCS In-Service Modernization				
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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	LCS In-Service Modernization	P-5a			- / 0.000	- / -	- / 74.426	- / 70.526	- / -	- / 70.526
P-40	Total Gross/Weapon System Cost				- / 0.000	- / 0.000	- / 74.426	- / 70.526	- / 0.000	- / 70.526
*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: LN001 - Habitability Modification Modifications to increase the permanent berths to 98 on the FREEDOM and INDEPENDENCE variants for LCS 11 and LCS 13-20 to be installed during the Post Shakedown Availability (PSA) period. FY19 Budget for CEs 1.2 and 1.4 is to fund necessary changes related to increased crew size for non-rack berthing requirements to be installed during the LCS 5-8 SRA period. LN002 - LCS Ships Class Safety Design Changes Safety modifications address the redesigned stern ramp back-fit on five FREEDOM variant ships (LCS 11/13/15/17/19) during PSA and installation of bridge wing on four INDEPENDENCE variant ships (LCS 14/16/18/20) during Industrial Post Delivery Availability (IPDA). LN003 - LCS Maintenance Modernization Littoral Combat Ships (LCS) Maintenance Modernization funding includes Ship Change Documents (SCD) for cyber, reliability, obsolescence, maintainability, and safety efforts/alterations required by the Navy for the LCS Class to maintain Authority to Operate (ATO). The scope/requirements for maintenance modernization include 96 SCD/alterations and 996 planned installations (across the FYDP) during LCS CNO availabilities driven/maintained by the Navy Data Environment (NDE), the Navy's centralized database and web-based application used to manage Navy Modernization, Maintenance, Logistics, and Workload/Performance. The funding for Design Services Allocation begins two years prior to the start of an Availability. The official schedule for CNO Availabilities is maintained in the Navy Data Environment (NDE) and updated by Commander Naval Surface Force Atlantic and Pacific schedulers. The CNO approved schedule for LCS Availabilities included in the requirements is as follows: FY18: LCS 1, LCS 4 FY19: LCS 2 FY20: LCS 3, LCS 4, LCS 5, LCS 6, LCS 7, LCS 8, LCS 9, LCS 10 FY21: LCS 1, LCS 11, LCS 12, LCS 13, LCS 14, LCS 16 FY22: LCS 2, LCS 3, LCS 5, LCS 6, LCS 7, LCS 10, LCS 15, LCS 17, LCS 18, LCS 20 FY23: LCS 4, LCS 8, LCS 9, LCS 19, LCS 21, LCS 22, LCS 24 FY24: LCS 1, LCS 11, LCS 12, LCS 13, LCS 14, LCS 15, LCS 16, LCS 18, LCS 23, LCS 25, LCS 26, LCS 27										

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 15: Other Ship Support		P-1 Line Item Number / Title: 1604 / LCS In-Service Modernization
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		
FY25: LCS 2, LCS 3, LCS 5, LCS 6, LCS 7, LCS 8, LCS 17, LCS 20, LCS 22, LCS 28		
LCS Modernization Ship Change Documents (SCD) are identified in the Navy Data Environment (NDE), which is the Navy's centralized database and web-based application used to manage/schedule Navy Modernization, Maintenance, Logistics, and Workload/Performance. NDE monitors/maintains the LCS Class availabilities for their scheduled modification by Hull, by year to include the advanced planning, procurement and installation of all modernization/SCD's to the LCS class. Modernization SCDs include: Total Ship Computing Environment (TSCE) Hardware/Software Upgrade, NAVLAN Server Tech Refresh, SPS-77 Tech Refresh, ES 3601 ESM Tech Refresh, ICMS Software Upgrade, ICMS Upgrade Cyber Fixes, MK-27 Gun Fire Control, TCSE Cyber Security Layer Defense Enhancements, Galley Habitability, USV Integration, Fire Pump Modifications, Isolation Valves in Oil Cooling System, Water mist Firefighting System Mod. Long lead material procurement, advance planning and design services allocation (DSA) need to be funded up to two years in advance of installations in accordance with MACMO planning milestones.		

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy																Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 15									P-1 Line Item Number / Title: 1604 / LCS In-Service Modernization							Aggregated Items Title: LCS In-Service Modernization					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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) LN001 Habitability Modifications																					
1.1) Habitability Mod (FRE Variant) ^(†)	A		-	-	-	-	-	-	4,916K	3	14.748	4,916K	1	4.916	-	-	-	4,916K	1	4.916	
1.2) Habitability Mod, Non-Rack (FRE Variant) ^{(1)(†)}	A		-	-	-	-	-	-	-	-	-	2,275K	2	4.550	-	-	-	2,275K	2	4.550	
1.3) Habitability Mod (IND Variant) ^(†)	A		-	-	-	-	-	-	4,878K	2	9.756	4,789K	2	9.578	-	-	-	4,789K	2	9.578	
1.4) Habitability Mod, Non-Rack (IND Variant) ^(†)	A		-	-	-	-	-	-	-	-	-	2,275K	2	4.550	-	-	-	2,275K	2	4.550	
Subtotal: 1) LN001 Habitability Modifications			-	-	0.000	-	-	-	-	-	24.504	-	-	23.594	-	-	-	-	-	23.594	
2) LN002 LCS Ship Class Safety Design Changes																					
2.1) Stern Ramp (FRE Variant) ^(†)	A		-	-	-	-	-	-	600,000.00	3	1.800	600,000.00	1	0.600	-	-	-	600,000.00	1	0.600	
2.2) Bridge Wings (IND Variant) ^{(2)(†)}	A		-	-	-	-	-	-	2,500K	2	5.000	2,500K	1	2.500	-	-	-	2,500K	1	2.500	
Subtotal: 2) LN002 LCS Ship Class Safety Design Changes			-	-	0.000	-	-	-	-	-	6.800	-	-	3.100	-	-	-	-	-	3.100	
3) LN003 LCS Maintenance Modernization ⁽³⁾																					
3.1) Mandatory Safety	A		-	-	-	-	-	-	-	-	6.236	-	-	-	-	-	-	-	-	-	
3.2) Cyber Security	A		-	-	-	-	-	-	-	-	13.550	-	-	-	-	-	-	-	-	-	
3.3) Obsolesence	A		-	-	-	-	-	-	-	-	10.706	-	-	-	-	-	-	-	-	-	
3.4) Reliability	A		-	-	-	-	-	-	-	-	12.630	-	-	-	-	-	-	-	-	-	
Subtotal: 3) LN003 LCS Maintenance Modernization			-	-	0.000	-	-	-	-	-	43.122	-	-	-	-	-	-	-	-	-	
4) LN003 LCS Maintenance Modernization - Obsolescence																					
4.2) C4I	A		-	-	-	-	-	-	-	-	-	-	-	3.947	-	-	-	-	-	3.947	
4.3) Combat Systems	A		-	-	-	-	-	-	-	-	-	-	-	16.827	-	-	-	-	-	16.827	
Subtotal: 4) LN003 LCS Maintenance Modernization - Obsolescence			-	-	0.000	-	-	-	-	-	-	-	-	20.774	-	-	-	-	-	20.774	
5) LN003 LCS Maintenance Modernization - Safety & Habitability																					
5.1) Mandatory Safety	A		-	-	-	-	-	-	-	-	-	-	-	2.832	-	-	-	-	-	2.832	
5.2) Non-Mandatory Safety	A		-	-	-	-	-	-	-	-	-	-	-	0.165	-	-	-	-	-	0.165	
5.3) Habitability	A		-	-	-	-	-	-	-	-	-	-	-	0.846	-	-	-	-	-	0.846	
Subtotal: 5) LN003 LCS Maintenance Modernization - Safety & Habitability			-	-	0.000	-	-	-	-	-	-	-	-	3.843	-	-	-	-	-	3.843	
6) LN003 Maintenance Modernization - Cyber & IA																					

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy														Date: February 2018						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 15						P-1 Line Item Number / Title: 1604 / LCS In-Service Modernization						Aggregated Items Title: LCS In-Service Modernization								
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
6.1) C4I	A		-	-	-	-	-	-	-	-	-	-	-	0.034	-	-	-	-	-	0.034
6.2) Combat Systems	A		-	-	-	-	-	-	-	-	-	-	-	4.699	-	-	-	-	-	4.699
Subtotal: 6) LN003 Maintenance Modernization - Cyber & IA			-	-	0.000	-	-	-	-	-	-	-	-	4.733	-	-	-	-	-	4.733
7) LN003 Maintenance Modernization - Reliability																				
7.1) HM&E	A		-	-	-	-	-	-	-	-	-	-	-	6.324	-	-	-	-	-	6.324
7.3) Combat Systems	A		-	-	-	-	-	-	-	-	-	-	-	2.582	-	-	-	-	-	2.582
Subtotal: 7) LN003 Maintenance Modernization - Reliability			-	-	0.000	-	-	-	-	-	-	-	-	8.906	-	-	-	-	-	8.906
8) LN003 Maintenance Modernization - Maintainability																				
8.1) HM&E	A		-	-	-	-	-	-	-	-	-	-	-	5.576	-	-	-	-	-	5.576
Subtotal: 8) LN003 Maintenance Modernization - Maintainability			-	-	0.000	-	-	-	-	-	-	-	-	5.576	-	-	-	-	-	5.576
Total			-	-	0.000	-	-	-	-	-	-	-	-	70.526	-	-	-	-	-	70.526
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) CE 1.2/1.4 LN001 - Habitability Mod, Non-Rack: FY19 and FY20 Habitability Mod Budget was transferred from OPN Budget BLI 0944 to FY19 OPN Budget BLI 1604. Move was to properly align the Habitability Mod procurements within the same BLI. Habitability Mod budget in OPN BLI 0944 was realigned to OPN BLI 1604 in FY18. (Note: FY20 Habitability Mod, Non-Rack Budget moved into FY19 to align to current Ship Restricted Availability (SRA) dates.)																				
(2) LN0002 Bridge Wings - FY18 and FY19 Bridge Wing installations, initially planned for PSA, are to be installed during the Industrial Post Delivery Availability (IPDA) period. This safety modification change was requested by the Fleet to be installed prior to ship sailaway.																				
(3) LN003 - LCS Modernization: The funding for Design Services Allocation begins two years prior to the start of an Availability. As of 17 July 2017 the schedule for LCS CNO Availabilities is as follows: FY18: LCS 1, LCS 4 FY19: LCS 2 FY20: LCS 3, LCS 4, LCS 5, LCS 6, LCS 7, LCS 8, LCS 9, LCS 10 FY21: LCS 1, LCS 11, LCS 12, LCS 13, LCS 14, LCS 16 FY22: LCS 2, LCS 3, LCS 5, LCS 6, LCS 7, LCS 10, LCS 15, LCS 17, LCS 18, LCS 20 FY23: LCS 4, LCS 8, LCS 9, LCS 19, LCS 21, LCS 22, LCS 24 FY24: LCS 1, LCS 11, LCS 12, LCS 13, LCS 14, LCS 15, LCS 16, LCS 18, LCS 23, LCS 25, LCS 26, LCS 27 FY25: LCS 2, LCS 3, LCS, 5, LCS 6, LCS 7, LCS 8, LCS 17, LCS 20, LCS 22, LCS 28 LCS Modernization Ship Change Documents (SCD) are identified in the Navy Data Environment (NDE), which is the Navy's centralized database and web-based application used to manage/schedule Navy Modernization, Maintenance, Logistics, and Workload/Performance. NDE monitors/maintains the LCS Class availabilities for their scheduled modification by Hull, by year to include the advanced planning, procurement and installation of all modernization/SCD's to the LCS class. Modernization SCDs include: Total Ship Computing Environment (TSCE) Hardware/Software Upgrade, NAVLAN Server Tech Refresh, SPS-77 Tech Refresh, ES 3601 ESM Tech Refresh, ICMS Software Upgrade, ICMS Upgrade Cyber Fixes, MK-27 Gun Fire Control, TCSE Cyber Security Layer Defense Enhancements, Galley Habitability, USV Integration, Fire Pump Modifications, Isolation Valves in Oil Cooling System, Water mist Firefighting System Mod. Long lead time material procurement, advance planning and design services allocation (DSA) need to be funded up to two years in advance of installations in accordance with MACMO planning milestones.																				

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Exhibit P-5a, Procurement History and Planning: PB 2019 Navy									Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 15				P-1 Line Item Number / Title: 1604 / LCS In-Service Modernization					Aggregated Items: LCS In-Service Modernization			
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) LN001 Habitability Modifications												
1.1) Habitability Mod (FRE Variant)		2018	FRE Variant (LM) / Marinette, WI	C / CPAF	NAVSEA	Apr 2018	Jan 2019	3	4,916K	Y		Jan 2018
1.1) Habitability Mod (FRE Variant)		2019	FRE Variant (LM) / Marinette, WI	C / CPAF	NAVSEA	Apr 2019	Jan 2020	1	4,916K	N		Jan 2019
1.2) Habitability Mod, Non-Rack (FRE Variant) ⁽¹⁾		2019	FRE Variant (LM) / Marinette, WI	C / CPAF	NAVSEA	Feb 2019	Nov 2019	2	2,275K	N		Dec 2018
1.3) Habitability Mod (IND Variant)		2018	IND Variant (Austal) / Mobile, AL	C / CPAF	NAVSEA	May 2018	Jan 2019	2	4,878K	Y		Feb 2018
1.3) Habitability Mod (IND Variant)		2019	IND Variant (Austal) / Mobile, AL	C / CPAF	NAVSEA	Dec 2018	Aug 2019	2	4,789K	N		Sep 2018
1.4) Habitability Mod, Non-Rack (IND Variant)		2019	IND Variant (Austal) / Mobile, AL	C / CPAF	NAVSEA	Oct 2018	Jun 2019	2	2,275K	N		Aug 2018
2) LN002 LCS Ship Class Safety Design Changes												
2.1) Stern Ramp (FRE Variant)		2018	FRE Variant (LM) / Marinette, WI	C / CPAF	NAVSEA	Apr 2018	Jan 2019	3	600,000.00	Y		Jan 2018
2.1) Stern Ramp (FRE Variant)		2019	FRE Variant (LM) / Marinette, WI	C / CPAF	NAVSEA	Apr 2019	Jan 2020	1	600,000.00	N		Jan 2019
2.2) Bridge Wings (IND Variant) ⁽²⁾		2018	IND Variant (Austal) / Mobile, AL	C / CPAF	NAVSEA	Jan 2018	Jun 2018	2	2,500K	Y		Dec 2017
2.2) Bridge Wings (IND Variant) ⁽²⁾		2019	IND Variant (Austal) / Mobile, AL	C / CPAF	NAVSEA	Dec 2018	May 2019	1	2,500K	N		Nov 2018

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy								Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 16: Logistic Support						P-1 Line Item Number / Title: 1610 / LSD Midlife & Modernization						
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	621.985	20.813	75.536	4.784	0.000	4.784	42.270	66.057	63.572	65.012	7.200	967.229
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	621.985	20.813	75.536	4.784	0.000	4.784	42.270	66.057	63.572	65.012	7.200	967.229
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	621.985	20.813	75.536	4.784	0.000	4.784	42.270	66.057	63.572	65.012	7.200	967.229
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Description:												
The FY 2019 funding request was reduced by \$0.084 million to reflect the Department of Navy's effort to support the Office of Management and Budget directed reforms for Efficiency and Effectiveness that include a lean, accountable, more efficient government.												
The FY 2019 funding request was reduced by \$1.200 million to account for the availability of prior year execution balances.												
Modernized LSD 41/49 Class ships transport and launch amphibious craft and vehicles with their crews and embarked personnel in amphibious assault operations. Supporting amphibious operations include landings via Landing Craft, Air Cushion (LCAC), conventional landing craft, and helicopters, onto hostile shores.												
PRIOR SMOSF EQUIPMENT: Funds in FY 2018 are for installation of equipment on LSD 46 USS Tortuga. For FY 2018-FY 2022, this funding is shifting from SMOSF to the base budget. This equipment was procured in prior years with SMOSF funds. LSD 46 Tortuga Midlife is being installed as the LSD Modernization program. The LSD 46 Modernization program replaces obsolete/unsupported HM&E systems and legacy C5I systems, and implements TOC savings upgrades to maintain amphibious warfare capabilities through DECOM (2038). These include items such as LPAC, Steering Control Systems (SCS), A/C-plants, Generators, Propulsion Load Management Units (PLMU), Reverse Osmosis (RO) Desalinators, Automated Digital Network System (ADNS), Battle Force Tactical Network (BFTN), Digital Modular Radio (DMR), Global Broadcast System (GBS), Information Systems Security Program (KMI and KW46), Naval Modular Automated Communications System (NAVMACS), Advanced Digital Antenna Production (ADAP), Navy Multiband Terminal (NMT), CRYPTO, Ship Self Defense System (SSDS) Upgrade suite, Interior Communications (IC) Systems and LSD 46 Davit Upgrade.												
The LSD 41 USS Whidbey Island and LSD 42 USS Germantown will be inducted into Modernization in FY2020 and FY2024, respectively, which will provide for a 5 year service life extension.												
[P40A / ST001 C4I Systems Procurement]: Procures C4I System including equipment procurement, recurring equipment engineering, equipment integration, and ILS.												
[P40A / ST5IN LSD Installation / DSA / AIT]: Provides Planning Yard Design Services Allocation (DSA) (design, advance planning, and kitted material), MSR installations and AIT installation support.												
[P40A / LSD 41 Design Services Allocation (DSA)]: DSA for LSD 41 Modernization in support of FY22 Modernization Period Availability.												
[P40A / LSD HM&E CYBER RESILIENCY DSA / INSTALL]: FY21 DSA for 2 installations in FY22 of Cyber Security Resiliency Procurements in FY21.												

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 16: Logistic Support		P-1 Line Item Number / Title: 1610 / LSD Midlife & Modernization
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 / LSD 41 FY22 EDSRA INSTALLATION / AIT]: FY22 EDSRA Availability for Major Ship Repair (MSR) / AIT installations. Availability installs HM&E Mod Conjunctive Alteration, C4I Systems, IC Systems, and Combat Systems. [P40A / LSD 46 FY18 EDSRA Installation / AIT]: FY18 Extended Docking Selected Restricted Availability (EDSRA) Availability for MSR / AIT installations. Availability installs include C4I Systems, IC Systems, Combat Systems, and HM&E Mod and Conjunctive Alterations (Reverse Osmosis (RO) configurations specific to the LSD 46, Electric Water Heater and Galley Mods for All Electric Upgrade, 130 Ton Air Conditioning Plant, Damage Control Console Upgrades, and Slewing Arm Davit.) This is installation of equipment that was procured in prior years with SMOSF funds. [P40A / LSD 46 C4I Systems AIT]: Alteration Installation Team (AIT) funding for installation of C4I alterations for the LSD 46 FY18 Q2 Availability. C4I AITs are under contract in Q4 FY17 to support the FY18 Q2 Availability. AIT installation contracts are for the following ship alterations: ADNS, BFTN, DMR, GBS, KMI/KW46, NAVMACS, ADAP, NMT, CRYPTO, CANES, and VACM. Hardware procurements were done under ST001 C4I Systems in prior year. [P40A / LSD 46 Design Services Allocation (DSA)]: FY15 SMOSF for First Year DSA and ADVANCE PLANNING LLTM on the LSD 46 USS Tortuga. FY16 SMOSF for DSA and ADVANCE PLANNING LLTM on the LSD 46 USS Tortuga. [P40A / ST001 - LSD Conjunctive Combat System Procurement]: Procures Combat Systems including equipment procurement, recurring equipment engineering, equipment integration, and ILS. [P40A / AN/SLQ-32]: Procures AN/SLQ-32 Electronic Warfare (EW) system. Procurement in FY21 for FY22 installation on LSD 41. [P40A / Navigation Sensor System Interface (NAVSSI)]: Procures AN/SSN-6 Navigation Sensor System Interface (NAVSSI) System. [P40A / Ship Self Defense System (SSDS)]: Procures SSDS MK2 equipment. Procures 1 unit in FY21 for FY22 installation on LSD 41 FY22 Modernization Period Availability. FY23 funds NRE for LSD 42 FY24 Procurement for installation during FY26 Modernization Period Availability. [P40A / Rolling Airframe Missile (RAM)]: Procures Rolling Airframe Missile (RAM). FY20 procurement for FY22 installation. 2 years lead time. FY23 procures one unit for LSD 42 for installation for FY26 Q1 installation. [P40A / LSD 46 Combat System Equipment]: Procures LSD 46 Ship Self Defense System (SSDS) combat system upgrade suite. [P40A / ST001 - HM&E Modernization Procurement]: Procures HM&E Modernization Systems including equipment procurement, recurring equipment engineering, equipment integration, and ILS. [P40A / LSD HME Cyber Resiliency]: Procures HM&E cyber reiliency shipalts on LSD-41 class ships. The shipalts would each include a Boundary Defense Capability (BDC), a central HM&E Situational Awareness (SA) tool, TAPs into HM&E data flow and weasel boards on the backplanes of select HM&E equipment providing the capabilities required to detect anomalous activity, react by segmenting the shipboard network and restore to normal operating conditions. [P40A / LSD 41 HM&E Mod and Conjunctive Alterations]: Procurements in FY20 are for HM&E Midlife Mods and Conjunctive Alterations for LSD 41. FY20 Conjunctive Alteration procurement costs included equipment procurements, recurring engineering, equipment integration, and integrated logistics support for the 5 year extended service life modernization package. Equipment is scheduled to be installed on the LSD41 FY22 EDSRA. [P40A / Damage Control Console (DCC) Upgrade]: Procure Damage Control Console (DCC) upgrade hardware. FY23 procures 3 units for FY24 installation. [P40A / Solenoid Operated Pilot Valves (SOPVs)]: Procures Solenoid Operated Pilot Valves (SOPVs). Procures 3 units in FY23 for FY24 installation.		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 16: Logistic Support		P-1 Line Item Number / Title: 1610 / LSD Midlife & Modernization
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 / Fire Detection System]: Procures LSD Fire Detection System. FY23 Procures 3 units for FY24 installation. [P40A / Oily Waste Separator]: Procures LSD Oily Waste Separator. Procures 3 units in FY23. FY24 Install. [P40A / LSD HM&E Mod and Conjunctive Alterations / AIT]: LSD 41/49 Class Conjunctive Modernization and AIT costs. [P40A / LSD 46 HM&E Mod and Conjunctive Alterations]: Procurements in FY16 HM&E Midlife Mods and Conjunctive alterations was funded under Ship Modernization Operation Sustainment Fund (SMOSF) for LSD 46. FY16 Alterations procurement costs included equipment procurements, recurring engineering, equipment integration, and integrated logistics Support. Alterations include Reverse Osmosis (RO) configurations specific to the LSD 46, Electric Water Heater and Galley Mods for All Electric Upgrade, 130 Ton Air Conditioning Plant, Damage Control Console Upgrades, and Slewing Arm Davit. Equipment is scheduled to be installed on the LSD 46 FY18 EDSRA. [P40A / Canned Lube Oil Pump]: Procures and installs a lube oil pump and controllers for the main four (4) propulsion diesel engines, including piping and sensor modifications. [P3A / ST002 - Propeller Blades & PLMU]: Replaces the existing Propeller Blades with higher efficiency blades and installs Propulsion Load Management Units (PLMU). [P3A - 2 / ST002 - Steering Control System]: Replaces the analog Helm and Lee Helm Steering Consoles and equipment with an electronic, computerized Steering Control System (SCS). [P3A - 3 / ST002 - Low Pressure Air Compressor]: Replaces the Low-Pressure Air Compressors (LPAC) with modern, oil-free compressors. [P3A - 4 / ST002 - Generators & Elect Distribution]: Replaces the generator on the Ship Service Diesel Generators (SSDG) with a higher wattage version and increased electric distribution capability for shore power, switchboard and load centers. [P3A - 5 / ST002 - LSD Deck Crane]: LT329 - Replaces the control system for the 60 and 20 Ton Cranes with a modern, electronic, computerized control system. [P3A - 6 / ST002 - LSD Flight Deck Thermal Management System]: Provides Flight Deck Thermal Management System (FDTMS) on the flight deck to mitigate damage resulting from MV-22 vertical take off/ landing (VTOL) flight operations. [P3A - 7 / ST002 - LSD Ballast Control Console]: Provides upgrades to the existing Ballast Control Consoles (BCS).		

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy			Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 01: Ships Support Equipment / BSA 16: Logistic Support			P-1 Line Item Number / Title: 1610 / LSD Midlife & Modernization		
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 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	LSD Midlife				- / 534.336	- / 10.789	- / 52.670	- / -	- / -	- / -
P-3a	1 / ST002 - Propeller Blades & PLMU (TBD)				- / 17.737	- / 2.115	- / 1.138	- / 0.000	- / 0.000	- / 0.000
P-3a	2 / ST002 - Steering Control System (TBD)				- / 50.708	- / 2.072	- / 1.528	- / 0.000	- / 0.000	- / 0.000
P-3a	3 / ST002 - Low Pressure Air Compressor (TBD)				- / 17.280	- / 0.327	- / 1.202	- / 0.000	- / 0.000	- / 0.000
P-3a	4 / ST002 - Generators & Elect Distribution (TBD)				- / 1.924	- / 5.510	- / 14.336	- / 0.000	- / 0.000	- / 0.000
P-3a	5 / ST002 - LSD Deck Crane (TBD)				- / 0.000	- / 0.000	- / 1.736	- / 0.925	- / 0.000	- / 0.925
P-3a	6 / ST002 - LSD Flight Deck Thermal Management System (TBD)				- / 0.000	- / 0.000	- / 1.498	- / 1.311	- / 0.000	- / 1.311
P-3a	7 / ST002 - LSD Ballast Control Console (TBD)				- / 0.000	- / 0.000	- / 1.428	- / 2.548	- / 0.000	- / 2.548
P-40	Total Gross/Weapon System Cost				- / 621.985	- / 20.813	- / 75.536	- / 4.784	- / 0.000	- / 4.784

Exhibits Schedule					FY 2020	FY 2021	FY 2022	FY 2023	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	LSD Midlife				- / -	- / -	- / -	- / -	- / -	- / -
P-3a	1 / ST002 - Propeller Blades & PLMU (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 20.990
P-3a	2 / ST002 - Steering Control System (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 54.308
P-3a	3 / ST002 - Low Pressure Air Compressor (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 18.809
P-3a	4 / ST002 - Generators & Elect Distribution (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 21.770
P-3a	5 / ST002 - LSD Deck Crane (TBD)				- / 8.414	- / 15.368	- / 6.797	- / 3.464	- / 7.200	- / 43.904
P-3a	6 / ST002 - LSD Flight Deck Thermal Management System (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 2.809
P-3a	7 / ST002 - LSD Ballast Control Console (TBD)				- / 11.356	- / 15.305	- / 12.622	- / 0.000	- / 0.000	- / 43.259
P-40	Total Gross/Weapon System Cost				- / 42.270	- / 66.057	- / 63.572	- / 65.012	- / 7.200	- / 967.229

*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 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 16								P-1 Line Item Number / Title: 1610 / LSD Midlife & Modernization							Aggregated Items Title: LSD Midlife ⁽¹⁾					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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) ST001 C4I Systems Procurement ⁽²⁾																				
1.1) Automated Digital Network System (ADNS)	A		-	-	0.497	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.2) Battle Force Tactical Network (BFTN)	A		-	-	0.220	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.3) Digital Modular Radio (DMR)	A		-	-	1.151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.4) Global Broadcast System (GBS)	A		-	-	0.383	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.5) Information Systems Security Program (KMI and KW46)	A		-	-	0.110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.6) Naval Modular Automated Communications System (NAVMACS)	A		-	-	0.301	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.7) Advanced Digital Antenna Production (ADAP)	A		-	-	0.425	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.8) Navy Multiband Terminal (NMT)	A		-	-	7.635	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.9) CRYPTO	A		-	-	0.082	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.10) CANES	A		-	-	5.000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.11) VINSON/ ANDVT Cryptographic Modernization (VACM)	A		-	-	0.325	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.12) Interior Communications (IC) Systems	A		-	-	3.300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) ST001 C4I Systems Procurement			-	-	19.429	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2) ST5IN LSD Installation / DSA / AIT ⁽³⁾																				
2.4) LSD 46 FY18 EDSRA Installation / AIT	A		-	-	-	-	-	-	-	51.834	-	-	-	-	-	-	-	-	-	-
2.5) LSD 46 C4I Systems AIT ⁽⁴⁾	A		-	-	-	-	-	10.000	-	-	-	-	-	-	-	-	-	-	-	-
2.6) LSD 46 Special Selected Restritted Availability (SSRA)	A		-	-	9.400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy															Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 16						P-1 Line Item Number / Title: 1610 / LSD Midlife & Modernization						Aggregated Items Title: LSD Midlife ⁽¹⁾								
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 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)
2.7) LSD 46 Design Services Allocation (DSA) ⁽⁵⁾	A		-	-	7.892	-	-	-	-	-	0.836	-	-	-	-	-	-	-	-	-
Subtotal: 2) ST5IN LSD Installation / DSA / AIT			-	-	17.292	-	-	10.000	-	-	52.670	-	-	-	-	-	-	-	-	-
3) ST001 - LSD Conjunctive Combat System Procurement ⁽⁶⁾																				
3.5) LSD 46 Combat System Equipment	A		-	-	7.456	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 3) ST001 - LSD Conjunctive Combat System Procurement			-	-	7.456	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4) ST001 - HM&E Modernization Procurement																				
4.8) LSD 46 HM&E Mod and Conjunctive Alterations ⁽⁷⁾	A		-	-	15.023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.9) Canned Lube Oil Pump ⁽⁸⁾	A		-	-	15.754	-	-	0.789	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 4) ST001 - HM&E Modernization Procurement			-	-	30.777	-	-	0.789	-	-	-	-	-	-	-	-	-	-	-	-
5) Other Prior Year Costs ⁽⁹⁾																				
5.1) All Other Prior Year Costs	A		-	-	459.382	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 5) Other Prior Year Costs			-	-	459.382	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total			-	-	534.336	-	-	10.789	-	-	52.670	-	-	-	-	-	-	-	-	-

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

Footnotes:

⁽¹⁾ (1) PRIOR SMOSF EQUIPMENT: Funds requested in FY 2018 are for installation of equipment on LSD 46 USS Tortuga. For FY 2018-FY 2022, this funding is shifting from SMOSF to the base budget. This equipment was procured in prior years with SMOSF funds. (a) The Consolidated Appropriations Act, 2015, H.R. 8110 re-appropriated and extended the Ship Modernization, Operations and Sustainment fund (SMOSF) to provide for costs associated with the continued operations and modernization of eleven CGs and LSD 46. Received \$13,800,000 FY15 SMOSF funds for the LSD 46 Tortuga. Received \$45,400,000 FY16 SMOSF for the LSD 46 Tortuga. (b) FY15 C4I procurements, FY16 HM&E Modernization procurements, FY16 combat systems procurement and FY16 SSRA for LSD 46 Tortuga. (c) FY15 SMOSF for First Year DSA on the LSD 46 Tortuga. FY16 SMOSF for DSA and ADVANCE PLANNING LLTM on the LSD 46 Tortuga. (d) Funding for FY18 - FY22 is shifting funds from SMOSF to base budget.

⁽²⁾ FY2015/FY2016 ST001-C4I System funded via Ship Modernization, Operations, and Sustainment Funds (SMOSF).

⁽³⁾ FY2016 ST5IN Installation/DSA/AIT funded via Ship Modernization, Operations, and Sustainment Funds (SMOSF).

⁽⁴⁾ Alteration Installation Team (AIT) funding for installation of C4I alterations for the LSD 46 FY18 Q2 Availability. C4I AITs are under contract in Q4 FY17 to support the FY18 Q2 Availability. FY17 \$10M funds AIT installation contracts for the following ship alterations: ADNS, BFTN, DMR, GBS, KMI/KW46, NAVMACS, ADAP, NMT, CRYPTO, CANES, and VACM. Hardware procurements were done under ST001 C4I Systems in prior year.

⁽⁵⁾ FY15 SMOSF for First Year DSA and ADVANCE PLANNING LLTM on the LSD 46 USS Tortuga. FY16 SMOSF for DSA and ADVANCE PLANNING LLTM on the LSD 46 USS Tortuga.

⁽⁶⁾ FY2016 LSD 46 Conjunctive Combat System funded via Ship Modernization, Operations, and Sustainment Funds (SMOSF).

⁽⁷⁾ Procurements in FY16 HM&E Midlife Mods and Conjunctive alterations was funded under Ship Modernization Operation Sustainment Fund (SMOSF) for LSD 46. FY16 Alterations procurement costs included equipment procurements, recurring engineering, equipment integration, and integrated logistics Support. Alterations include Reverse Osmosis (RO) configurations specific to the LSD 46, Electric Water Heater and Galley Mods for All Electric Upgrade, 130 Ton Air Conditioning Plant, Damage Control Console Upgrades, and Slewing Arm Davit. Equipment is scheduled to be installed on the LSD 46 FY18 EDSRA.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity:	P-1 Line Item Number / Title:	Aggregated Items Title:
1810N / 01 / 16	1610 / LSD Midlife & Modernization	LSD Midlife ⁽¹⁾
⁽⁸⁾ Procures and installs a lube oil pump and controllers for the main four (4) propulsion diesel engines, including piping and sensor modifications. ⁽⁹⁾ Accounting entry for prior year funds of all other cost elements no longer funded.		

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 16	P-1 Line Item Number / Title: 1610 / LSD Midlife & Modernization	Modification Number / Title: 1 / ST002 - Propeller Blades & PLMU

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	17.737	2.115	1.138	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	20.990
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	17.737	2.115	1.138	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	20.990
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	17.737	2.115	1.138	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	20.990
(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 SHIPALT replaces the existing Propeller Blades with higher efficiency blades and installs Propulsion Load Management Units (PLMU) that result in fuel savings and engine maintenance reduction as well as operational benefits. The prototype for this SHIPALT was installed and proven aboard the LSD 44 under the DOD sponsored Commercial Operations and Support Savings Initiative (COSSI). Return On Investment (ROI) for the class is estimated at over \$40M (after payback) and operational benefits include increased top speed, quicker response/deceleration, and elimination of existing system performance problems (i.e., low lube-oil pressure trip of main engines). Only 9 LSDs will require this SHIPALT as part of the Midlife Program.

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 16				P-1 Line Item Number / Title: 1610 / LSD Midlife & Modernization						Modification Number / Title: 1 / ST002 - Propeller Blades & PLMU			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: Propeller Blades & PLMU				Modification Type: TBD				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: ST002 - Propeller Blades & PLMU													
B Kits													
Recurring													
1.1.1) FMP Ship Units - NonOrganic ⁽¹⁰⁾	7 / 7.121	1 / 1.742	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	8 / 8.863	
1.1.2) End Item Spares - Organic	2 / 1.938	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 1.938	
Subtotal: Recurring	- / 9.059	- / 1.742	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 10.801	
Subtotal: ST002 - Propeller Blades & PLMU	9 / 9.059	1 / 1.742	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	10 / 10.801	
Subtotal: Procurement, All Modification Items	- / 9.059	- / 1.742	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 10.801	
Installation													
Modification Item 1 of 1: ST002 - Propeller Blades & PLMU	- / 8.678	- / 0.373	- / 1.138	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 10.189	
Subtotal: Installation	- / 8.678	- / 0.373	- / 1.138	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 10.189	
Total													
Total Cost (Procurement + Support + Installation)	17.737	2.115	1.138	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	20.990	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 16										P-1 Line Item Number / Title: 1610 / LSD Midlife & Modernization										Modification Number / Title: 1 / ST002 - Propeller Blades & PLMU											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: ST002 - Propeller Blades & PLMU																															
Manufacturer Information																															
Manufacturer Name: Rolls Royce															Manufacturer Location: Walpole, MA																
Administrative Leadtime (in Months): 2															Production Leadtime (in Months): 12																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates		Nov 2016																													
Delivery Dates		Nov 2017																													
Installation Information																															
Method of Implementation: SHIPYARD/AIT:: Installation Name: FMP Ship Units																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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 / 8.678		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		7 / 8.678							
FY 2017		- / -		0 / 0.373		1 / 1.138		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		1 / 1.511							
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		7 / 8.678		0 / 0.373		1 / 1.138		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		8 / 10.189							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
Out	7	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
Method of Implementation (Organic): End Item Spares - Not Installed																															
																				Installation Quantity: 2											
Footnotes: (10) FY18 Installation is for LSD 46.																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy						Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 16				P-1 Line Item Number / Title: 1610 / LSD Midlife & Modernization				Modification Number / Title: 2 / ST002 - Steering Control System			

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	50.708	2.072	1.528	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	54.308
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	50.708	2.072	1.528	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	54.308
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	50.708	2.072	1.528	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	54.308
(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 SHIPALT replaces the analog Helm and Lee Helm Steering Consoles and equipment with an electronic, computerized Steering Control System (SCS) that integrates various navigation parameters, such as location (latitude, longitude) from GPS as well as pitch, roll, speed, heading, and wind. SCS will be designed to integrate with Electronic Chart Display and Information Systems-Navy (ECDIS-N) digital nautical charts. The existing Bridge control system was designed in the late 1970s and is near the end of its useful service life. Parts obsolescence is a rapidly growing and more costly problem on this maintenance intensive control system. The IBS also provides significantly enhanced operational and monitoring capabilities as well as real-time Navigation data. This system will reduce workload, provide significant readiness improvement, improve safety and provide cost avoidance.

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 16				P-1 Line Item Number / Title: 1610 / LSD Midlife & Modernization						Modification Number / Title: 2 / ST002 - Steering Control System			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: Steering Control System				Modification Type: TBD				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> ST002 - Steering Control System													
B Kits													
Recurring													
1.1.1) Non-FMP Shore Site Units - NonOrganic	2 / 1.433	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	2 / 1.433	
1.1.2) FMP Ship Units - NonOrganic ⁽¹¹⁾	11 / 9.582	1 / 0.844	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	12 / 10.426	
<i>Subtotal: Recurring</i>	- / 11.015	- / 0.844	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 11.859	
<i>Subtotal: ST002 - Steering Control System</i>	13 / 11.015	1 / 0.844	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	14 / 11.859	
<i>Subtotal: Procurement, All Modification Items</i>	- / 11.015	- / 0.844	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 11.859	
Installation													
<i>Modification Item 1 of 1:</i> ST002 - Steering Control System	- / 39.693	- / 1.228	- / 1.528	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 42.449	
<i>Subtotal: Installation</i>	- / 39.693	- / 1.228	- / 1.528	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 42.449	
Total													
Total Cost (Procurement + Support + Installation)	50.708	2.072	1.528	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	54.308	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 16										P-1 Line Item Number / Title: 1610 / LSD Midlife & Modernization										Modification Number / Title: 2 / ST002 - Steering Control System											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: ST002 - Steering Control System																															
Manufacturer Information																															
Manufacturer Name: Henschel															Manufacturer Location: Newburyport, MA																
Administrative Leadtime (in Months): 2															Production Leadtime (in Months): 12																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates		Nov 2016																													
Delivery Dates		Nov 2017																													
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: Non-FMP Shore Site Units																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 / 7.102	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 7.102																		
FY 2017		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		2 / 7.102	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	2 / 7.102																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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: SHIPYARD/AIT:: Installation Name: FMP Ship Units																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total																		
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																		
Prior Years		11 / 32.591	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	11 / 32.591																		

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 16	P-1 Line Item Number / Title: 1610 / LSD Midlife & Modernization	Modification Number / Title: 2 / ST002 - Steering Control System

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

Modification Item 1 of 1: ST002 - Steering Control System

Installation Information

Method of Implementation: SHIPYARD/AIT:: Installation Name: FMP Ship Units

Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017	- / -	0 / 1.228	1 / 1.528	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	1 / 2.756
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	11 / 32.591	0 / 1.228	1 / 1.528	- / -	- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.000	12 / 35.347

Installation Schedule

	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	11	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
Out	11	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12

Footnotes:

⁽¹¹⁾ FY17 DSA (\$1.2 million) efforts in support of the FY18 LSD 46 Modernization. FY18 Installation funding (\$1.5 million) is for LSD 46 Modernization installation.

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 16				P-1 Line Item Number / Title: 1610 / LSD Midlife & Modernization						Modification Number / Title: 3 / ST002 - Low Pressure Air Compressor		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	17.280	0.327	1.202	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	18.809
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	17.280	0.327	1.202	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	18.809
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	17.280	0.327	1.202	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	18.809
<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 Ship Change replaces the Low-Pressure Air Compressors (LPAC) with modern, oil-free compressors. Parts obsolescence is a rapidly growing and more costly problem on these maintenance intensive compressors. This Ship Change provides Return On Investment (ROI) through improved reliability and maintainability of LPACs and reduced maintenance by elimination of oil contamination of pneumatic controls components (new compressors are oil-free). In addition, the new compressors will provide significant readiness improvement through increased reliability of Vital, low-pressure air supply to Vital combat systems and the main propulsion controls.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 16				P-1 Line Item Number / Title: 1610 / LSD Midlife & Modernization						Modification Number / Title: 3 / ST002 - Low Pressure Air Compressor			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: LPAC				Modification Type: TBD				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: ST002 - Low Pressure Air Compressor</i>													
<i>B Kits</i>													
<i>Recurring</i>													
1.1.1) FMP Ship Units - NonOrganic ⁽¹²⁾	8 / 6.480	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	8 / 6.480	
<i>Subtotal: Recurring</i>	- / 6.480	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 6.480	
<i>Subtotal: ST002 - Low Pressure Air Compressor</i>	8 / 6.480	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	8 / 6.480	
<i>Subtotal: Procurement, All Modification Items</i>	- / 6.480	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 6.480	
Installation													
<i>Modification Item 1 of 1: ST002 - Low Pressure Air Compressor</i>													
	- / 10.800	- / 0.327	- / 1.202	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 12.329	
<i>Subtotal: Installation</i>	- / 10.800	- / 0.327	- / 1.202	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 12.329	
Total													
Total Cost (Procurement + Support + Installation)	17.280	0.327	1.202	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	18.809	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 16										P-1 Line Item Number / Title: 1610 / LSD Midlife & Modernization										Modification Number / Title: 3 / ST002 - Low Pressure Air Compressor											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: ST002 - Low Pressure Air Compressor																															
Manufacturer Information																															
Manufacturer Name: RIX															Manufacturer Location: Benecia, CA																
Administrative Leadtime <i>(in Months)</i> : 2															Production Leadtime <i>(in Months)</i> : 16																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates																															
Delivery Dates																															
Installation Information																															
Method of Implementation: SHIPYARD/AIT:: Installation Name: FMP Ship Units																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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 / 10.800		0 / 0.327		1 / 1.202		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		8 / 12.329					
FY 2017		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
Total		7 / 10.800		0 / 0.327		1 / 1.202		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		8 / 12.329					
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
Out	7	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
Footnotes: ⁽¹²⁾ FY17 DSA (\$0.3 million) efforts in support of the FY18 LSD 46 Modernization. FY18 Installation funding (\$1.2 million) is for LSD 46 Modernization installation.																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 16					P-1 Line Item Number / Title: 1610 / LSD Midlife & Modernization					Modification Number / Title: 4 / ST002 - Generators & Elect Distribution		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1.924	5.510	14.336	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	21.770
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1.924	5.510	14.336	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	21.770
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1.924	5.510	14.336	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	21.770
<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 SHIPALT replaces the generator on the Ship Service Diesel Generators (SSDG) with a higher wattage version and increased electric distribution capability for shore power, switchboard and load centers. This SHIPALT provides significant Return on Investment (ROI) through improved reliability and maintainability of electrical ship systems/equipment versus the obsolete and maintenance intensive equipment. Also, additional electrical plant loads will improve efficient operation of the currently under-loaded SSDGs and contribute to the ROI through reduced maintenance costs for the SSDGs.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 16					P-1 Line Item Number / Title: 1610 / LSD Midlife & Modernization					Modification Number / Title: 4 / ST002 - Generators & Elect Distribution			
ID Code (A=Service Ready, B=Not Service Ready) :								MDAP/MAIS Code:					
Models of Systems Affected: Generators & Elect Distribution				Modification Type: TBD				Related RDT&E PEs:					
Financial Plan	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: ST002 - Generators & Elect Distribution</i>													
<i>B Kits</i>													
<i>Recurring</i>													
1.1.1) FMP Ship Units - NonOrganic ⁽¹³⁾	1 / 1.738	- / 2.576	- / 0.649	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 4.963
<i>Subtotal: Recurring</i>	<i>- / 1.738</i>	<i>- / 2.576</i>	<i>- / 0.649</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 0.000</i>	<i>- / 4.963</i>	
<i>Subtotal: ST002 - Generators & Elect Distribution</i>	<i>1 / 1.738</i>	<i>- / 2.576</i>	<i>- / 0.649</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>1 / 4.963</i>	
<i>Subtotal: Procurement, All Modification Items</i>	<i>- / 1.738</i>	<i>- / 2.576</i>	<i>- / 0.649</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 0.000</i>	<i>- / 4.963</i>	
Installation													
<i>Modification Item 1 of 1: ST002 - Generators & Elect Distribution</i>	<i>- / 0.186</i>	<i>- / 2.934</i>	<i>- / 13.687</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>- / 0.000</i>	<i>- / 0.000</i>	<i>- / 16.807</i>
<i>Subtotal: Installation</i>	<i>- / 0.186</i>	<i>- / 2.934</i>	<i>- / 13.687</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 0.000</i>	<i>- / 16.807</i>	
Total													
Total Cost (Procurement + Support + Installation)	1.924	5.510	14.336	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	21.770	

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 16										P-1 Line Item Number / Title: 1610 / LSD Midlife & Modernization										Modification Number / Title: 4 / ST002 - Generators & Elect Distribution											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: ST002 - Generators & Elect Distribution																															
Manufacturer Information																															
Manufacturer Name: Awua-Chem															Manufacturer Location: Knoxville, TN																
Administrative Leadtime (in Months): 2															Production Leadtime (in Months): 21																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates		Jan 2017																													
Delivery Dates		Dec 2017																													
Installation Information																															
Method of Implementation: SHIPYARD/AIT:: Installation Name: FMP Ship Units																															
Installation Cost		Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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		0 / 0.186		0 / 2.934		1 / 13.687		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		1 / 16.807							
FY 2017		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2019		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2020		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -							
Total		0 / 0.186		0 / 2.934		1 / 13.687		- / -		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.000		1 / 16.807							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				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
Footnotes: ⁽¹³⁾ The replacement generator and electrical distribution system to be installed in FY18 for LSD-46 is procured in components and is budgeted in FY16, FY17, and FY18 based on the production lead-times of individual components. FY17 procured a ship set of 1600 KW Generators (4 per ship set) and four governors. FY17 contract/award dates reflect those procurements. FY18 procures other miscellaneous "off-																															

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 16	P-1 Line Item Number / Title: 1610 / LSD Midlife & Modernization	Modification Number / Title: 4 / ST002 - Generators & Elect Distribution
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
the-shelf" items procured as Government Furnished Equipment that are readily available and these include sensors, circuit breakers, buss bars, valves, actuators, shock mount rectifiers, fuses/fuse holders, transformers, and regulators. FY17 DSA is for the year prior to install costs associated with the remainder of Midlife Long Lead Time Material and Advanced Planning.		

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 16	P-1 Line Item Number / Title: 1610 / LSD Midlife & Modernization	Modification Number / Title: 5 / ST002 - LSD Deck Crane

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	0.000	0.000	1.736	0.925	0.000	0.925	8.414	15.368	6.797	3.464	7.200	43.904
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	0.000	0.000	1.736	0.925	0.000	0.925	8.414	15.368	6.797	3.464	7.200	43.904
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	0.000	0.000	1.736	0.925	0.000	0.925	8.414	15.368	6.797	3.464	7.200	43.904
<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:

SCD 19102 (60 Ton) and SCD 19770 (20 Ton) Crane controls - These ship changes replaces the control system for the 60 and 20 Ton Cranes with a modern, electronic, computerized control system. The existing crane control system was designed in the late 1970s and is no longer logistically supported. Maintenance costs continue to be high due to the difficulty in obtaining repair parts and frequent failure of components. In addition, mission capability has been frequently degraded because the Deck Crane is required to support USMC amphibious assault landings and boat ops. The LSD-41 class crane control upgrades will include: replace obsolete and at-risk parts/subsystems (brakes, motors, safety devices), replace and upgrading electrical and control system (motor controllers, electrical circuits, panels, and switches), improve design of high failure items, upgrade operator control interface and preservation corrosion control requirements.

UNCLASSIFIED

LI 1610 - LSD Midlife & Modernization
Navy

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 16										P-1 Line Item Number / Title: 1610 / LSD Midlife & Modernization										Modification Number / Title: 5 / ST002 - LSD Deck Crane											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: ST002 - LSD Deck Crane																															
Manufacturer Information																															
Manufacturer Name: TBD															Manufacturer Location: TBD																
Administrative Leadtime (in Months): 0															Production Leadtime (in Months): 12																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates														Dec 2019				Jan 2021													
Delivery Dates														Dec 2020				Jan 2022													
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: 60 Ton Crane Control System																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total																		
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																	
Prior Years		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2017		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2018		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2020		- / -	- / -	- / -	0 / 0.214	0 / 0.000	0 / 0.214	0 / 1.900	2 / 7.097	- / -	- / -	0 / 0.000	2 / 9.211																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	0 / 0.214	0 / 1.437	2 / 6.797	- / -	0 / 0.000	2 / 8.448																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 3.600	1 / 3.600																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		- / -	- / -	- / -	0 / 0.214	0 / 0.000	0 / 0.214	0 / 2.114	2 / 8.534	2 / 6.797	- / -	1 / 3.600	5 / 21.259																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	2	-	-	-	-	-	-	1	5
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	1	-	1	-	1	5
Method of Implementation: [none specified]:: Installation Name: 20 Ton Deck Crane Control System																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total																		
		Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)																	
Prior Years		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 16	P-1 Line Item Number / Title: 1610 / LSD Midlife & Modernization	Modification Number / Title: 5 / ST002 - LSD Deck Crane

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

Modification Item 1 of 1: ST002 - LSD Deck Crane

Installation Information

Method of Implementation: [none specified]:: Installation Name: 20 Ton Deck Crane Control System

Installation Cost	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2019	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2020	- / -	- / -	- / -	0 / 0.199	0 / 0.000	0 / 0.199	0 / 0.534	1 / 3.505	- / -	- / -	0 / 0.000	1 / 4.238
FY 2021	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
FY 2023	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 3.600	1 / 3.600
To Complete	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	- / -	0 / 0.199	0 / 0.000	0 / 0.199	0 / 0.534	1 / 3.505	- / -	- / -	1 / 3.600	2 / 7.838

Installation Schedule

	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	2
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	2

Footnotes:

⁽¹⁴⁾ FY19 funding is required to fund In-service Engineering Agent (ISEA) and Design Services Allocation (DSA) for advance planning in support of the FY21 installation. FY18 Non-Recurring Engineering (NRE) is required to support the first procurement in FY20 and the installation of two alterations (20 Ton Crane and 60 Ton Crane) in FY21, which is scheduled to start in January of 2021. Funds will be used to identify obsolete and at-risk parts/subsystems (brakes, motors, safety devices), to redesign and upgrade electrical and control systems (motor controllers, electrical circuits, panels, and switches), to improve design of high failure items, and to upgrade operator control interface and preservation corrosion control requirements. Other NRE efforts include conducting vendor and industrial surveys to identify current obsolete crane components and recommending best course of actions for life-cycle support. Other efforts involve identifying new training requirements, spare parts requirements, technical manual updates and other logistics element support.

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Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 16					P-1 Line Item Number / Title: 1610 / LSD Midlife & Modernization					Modification Number / Title: 6 / ST002 - LSD Flight Deck Thermal Management System		
ID Code (A=Service Ready, B=Not Service Ready) :							MDAP/MAIS Code:					
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	0.000	0.000	1.498	1.311	0.000	1.311	0.000	0.000	0.000	0.000	0.000	2.809
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	0.000	0.000	1.498	1.311	0.000	1.311	0.000	0.000	0.000	0.000	0.000	2.809
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	0.000	0.000	1.498	1.311	0.000	1.311	0.000	0.000	0.000	0.000	0.000	2.809
<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: SCD 16657 - The Flight Deck Thermal Management System (FDTMS) consists of the installation of heat mitigating, two layer, composite panels that provides heat protection to the helicopter deck to mitigate damage resulting from MV-22 vertical take off/landing (VTOL) flight operations.												

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Exhibit P-3a, Individual Modification: PB 2019 Navy									Date: February 2018				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 16				P-1 Line Item Number / Title: 1610 / LSD Midlife & Modernization					Modification Number / Title: 6 / ST002 - LSD Flight Deck Thermal Management System				
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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: ST002 - LSD Flight Deck Thermal Management System													
B Kits													
Recurring													
1.1.1) LSD Flight Deck Thermal Management System* - NonOrganic	- / -	- / -	1 / 1.078	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 1.078	
Subtotal: Recurring	- / 0.000	- / -	- / 1.078	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 1.078	
Subtotal: ST002 - LSD Flight Deck Thermal Management System	- / -	- / -	1 / 1.078	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	1 / 1.078	
Subtotal: Procurement, All Modification Items	- / 0.000	- / -	- / 1.078	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 1.078	
Support (All Modification Items)													
2.1) Non-recurring Engineering	- / -	- / -	- / 0.256	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.256	
Subtotal: Support	- / 0.000	- / -	- / 0.256	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / 0.000	- / 0.256	
Installation													
Modification Item 1 of 1: ST002 - LSD Flight Deck Thermal Management System	- / 0.000	- / 0.000	- / 0.164	- / 1.311	- / 0.000	- / 1.311	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 1.475	
Subtotal: Installation	- / 0.000	- / -	- / 0.164	- / 1.311	- / -	- / 1.311	- / -	- / -	- / -	- / -	- / 0.000	- / 1.475	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	1.498	1.311	0.000	1.311	0.000	0.000	0.000	0.000	0.000	2.809	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 16					P-1 Line Item Number / Title: 1610 / LSD Midlife & Modernization					Modification Number / Title: 6 / ST002 - LSD Flight Deck Thermal Management System																					
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:																					
Modification Item 1 of 1: ST002 - LSD Flight Deck Thermal Management System																															
Manufacturer Information																															
Manufacturer Name: Cellular Materials International (CMI)										Manufacturer Location: Virginia																					
Administrative Leadtime (in Months): 0										Production Leadtime (in Months): 12																					
Dates	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023						
Contract Dates					Jul 2018																										
Delivery Dates					Jul 2019																										
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: LSD Flight Deck Thermal Management System*																															
Installation Cost		Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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 2017		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2018		- / -	- / -	0 / 0.164	1 / 1.311	0 / 0.000	1 / 1.311	- / -	- / -	- / -	- / -	0 / 0.000	1 / 1.475																		
FY 2019		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2020		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2021		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2022		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
FY 2023		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
To Complete		- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -	- / -																		
Total		- / -	- / -	0 / 0.164	1 / 1.311	0 / 0.000	1 / 1.311	- / -	- / -	- / -	- / -	0 / 0.000	1 / 1.475																		
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1

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Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 16	P-1 Line Item Number / Title: 1610 / LSD Midlife & Modernization	Modification Number / Title: 7 / ST002 - LSD Ballast Control Console

ID Code (A=Service Ready, B=Not Service Ready) :						MDAP/MAIS Code:						
Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	0.000	0.000	1.428	2.548	0.000	2.548	11.356	15.305	12.622	0.000	0.000	43.259
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	0.000	0.000	1.428	2.548	0.000	2.548	11.356	15.305	12.622	0.000	0.000	43.259
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	0.000	0.000	1.428	2.548	0.000	2.548	11.356	15.305	12.622	0.000	0.000	43.259
<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:

SCD 10828 - Ballast Control Console (BCS) - This mission and safety critical SCD addresses system degradation due to obsolescence issues, extensive downtime and reduced system capability/reliability. The system is currently operating in a degraded capacity and requires immediate replacement. The SCD leverages hardware/software commonality with LSD Tech Refresh and LHD Mid Life efforts to integrate legacy equipment controlled and monitored in BCS utilizing an Open System Architecture.

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Exhibit P-3a, Individual Modification: PB 2019 Navy								Date: February 2018					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 16				P-1 Line Item Number / Title: 1610 / LSD Midlife & Modernization				Modification Number / Title: 7 / ST002 - LSD Ballast Control Console					
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	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> ST002 - LSD Ballast Control Console													
B Kits													
Recurring													
1.1.1) BALLAST CONTROL CONSOLE UPGRADE* - NonOrganic ⁽¹⁵⁾	- / -	- / -	- / -	1 / 1.455	- / -	1 / 1.455	2 / 2.968	3 / 4.541	- / -	- / -	- / -	6 / 8.964	
<i>Subtotal: Recurring</i>	- / 0.000	- / -	- / -	- / 1.455	- / -	- / 1.455	- / 2.968	- / 4.541	- / -	- / -	- / 0.000	- / 8.964	
<i>Subtotal: ST002 - LSD Ballast Control Console</i>	- / -	- / -	- / -	1 / 1.455	- / -	1 / 1.455	2 / 2.968	3 / 4.541	- / -	- / -	- / -	6 / 8.964	
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.000	- / -	- / -	- / 1.455	- / -	- / 1.455	- / 2.968	- / 4.541	- / -	- / -	- / 0.000	- / 8.964	
Support (All Modification Items)													
2.1) System Engineering/NonRecurring Engineering ⁽¹⁶⁾	- / -	- / -	- / 1.180	- / -	- / -	- / -	- / 2.146	- / 0.120	- / -	- / -	- / -	- / 3.446	
<i>Subtotal: Support</i>	- / 0.000	- / -	- / 1.180	- / -	- / -	- / -	- / 2.146	- / 0.120	- / -	- / -	- / 0.000	- / 3.446	
Installation													
<i>Modification Item 1 of 1:</i> ST002 - LSD Ballast Control Console	- / 0.000	- / 0.000	- / 0.248	- / 1.093	- / 0.000	- / 1.093	- / 6.242	- / 10.644	- / 12.622	- / 0.000	- / 0.000	- / 30.849	
<i>Subtotal: Installation</i>	- / 0.000	- / -	- / 0.248	- / 1.093	- / -	- / 1.093	- / 6.242	- / 10.644	- / 12.622	- / -	- / 0.000	- / 30.849	
Total													
Total Cost (Procurement + Support + Installation)	0.000	0.000	1.428	2.548	0.000	2.548	11.356	15.305	12.622	0.000	0.000	43.259	

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy										Date: February 2018																					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 16										P-1 Line Item Number / Title: 1610 / LSD Midlife & Modernization										Modification Number / Title: 7 / ST002 - LSD Ballast Control Console											
ID Code (A=Service Ready, B=Not Service Ready) :															MDAP/MAIS Code:																
Modification Item 1 of 1: ST002 - LSD Ballast Control Console																															
Manufacturer Information																															
Manufacturer Name: TBD															Manufacturer Location: TBD																
Administrative Leadtime (in Months): 3															Production Leadtime (in Months): 12																
Dates		FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023					
Contract Dates										Dec 2018				Mar 2020				Jan 2021													
Delivery Dates										Dec 2019				Mar 2021				Jan 2022													
Installation Information																															
Method of Implementation: [none specified]:: Installation Name: BALLAST CONTROL CONSOLE UPGRADE*																															
Installation Cost		Prior Years		FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total		FY 2020		FY 2021		FY 2022		FY 2023		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 2017		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2019		- / -		- / -		0 / 0.248		0 / 0.599		0 / 0.000		0 / 0.599		1 / 4.166		- / -		- / -		- / -		- / -		0 / 0.000		1 / 5.013					
FY 2020		- / -		- / -		- / -		0 / 0.494		0 / 0.000		0 / 0.494		0 / 1.380		2 / 8.499		- / -		- / -		- / -		0 / 0.000		2 / 10.373					
FY 2021		- / -		- / -		- / -		- / -		- / -		- / -		0 / 0.696		0 / 2.145		3 / 12.622		- / -		- / -		0 / 0.000		3 / 15.463					
FY 2022		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
FY 2023		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
To Complete		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -		- / -					
Total		- / -		- / -		0 / 0.248		0 / 1.093		0 / 0.000		0 / 1.093		1 / 6.242		2 / 10.644		3 / 12.622		- / -		0 / 0.000		6 / 30.849							
Installation Schedule																															
	PYS	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				TC	Tot
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
In	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	1	-	2	-	1	-	-	-	-	-	6
Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	1	1	2	-	-	-	-	6
Footnotes:																															
(15) In addition to procuring the first BCC upgrade, FY19 funding is required to fund In-service Engineering Agent (ISEA) and Design Services Allocation (DSA) for advance planning in support of the FY20 and FY21 installation. The In-Service Engineering Agent (ISEA) is the government Subject Matter Expertise (SME).																															
(16) FY18 NRE is required to support Request for Proposal (RFP) and first procurement award in FY19 without schedule delays. Funds will be used to identify obsolete and at-risk 1970's vintage parts/ subsystems, to redesign and upgrade electrical and control systems (motor controllers, electrical circuits, panels, and switches), to improve design of high failure items, and to upgrade operator ballast control																															

UNCLASSIFIED

Exhibit P-3a, Individual Modification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 01 / 16	P-1 Line Item Number / Title: 1610 / LSD Midlife & Modernization	Modification Number / Title: 7 / ST002 - LSD Ballast Control Console
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
console interface and preservation corrosion control requirements. Other NRE efforts include conducting vendor and industrial surveys to identify currently obsolete ballast control console components, recommending best course of actions for life-cycle support, and identifying new training requirements, spare parts requirements, technical manual updates, other logistics element support. Additional Engineering/ Non-Recurring Engineering is for performing Electro-Magnetic Interference (EMI), shock and vibration testing; and for development of the formal lifecycle training Front End Analysis (FEA), development of the formal lifecycle training Navy Training System Plan (NTSP) and procurement of training equipment for the LSD controls systems Maintainer Classrooms in Norfolk and San Diego.		