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**Department of Defense  
Fiscal Year (FY) 2018 Budget Estimates**

May 2017



**Navy**

*Justification Book Volume 2 of 5*

***Other Procurement, Navy***

**BA 2**

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The estimated cost for this report for the Department of Navy (DON) is \$37,518.

The estimated total cost for supporting the DON budget justification material is approximately \$1,142,960 for the 2017 fiscal year. This includes \$76,659 in supplies and \$1,066,301 in labor.

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Navy • Budget Estimates FY 2018 • Procurement

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## **Department of Defense Appropriations Act, 2018**

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### **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, \$8,497,848,000, to remain available for obligation until September 30, 2020.

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## UNCLASSIFIED

Department of the Navy  
FY 2018 President's Budget Request  
Exhibit P-1 FY 2018 President's Budget Request  
Total Obligational Authority  
(Dollars in Thousands)

Appropriation -----	FY 2016 Base + OCO -----	FY 2017 PB Request with CR Adj Base -----	FY 2017 Total PB Requests* with CR Adj Base -----
Other Procurement, Navy	6,585,466	6,471,930	6,689,919
Total Department of the Navy	6,585,466	6,471,930	6,689,919

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Department of the Navy  
 FY 2018 President's Budget Request  
 Exhibit P-1 FY 2018 President's Budget Request  
 Total Obligational Authority  
 (Dollars in Thousands)

Appropriation -----	FY 2017 PB Request with CR Adj OCO -----	FY 2017 Total PB Requests* with CR Adj OCO -----	FY 2017 Less Enacted Div B P.L.114-254** OCO -----	FY 2017 Remaining Req with CR Adj OCO -----
Other Procurement, Navy	12,186	22,686		22,686
Total Department of the Navy	12,186	22,686		22,686

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Department of the Navy  
FY 2018 President's Budget Request  
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Total Obligational Authority  
(Dollars in Thousands)

Appropriation -----	FY 2017 Total PB Requests** with CR Adj Base+OCO+SAA -----	FY 2017 Total PB Requests* with CR Adj Base + OCO -----	FY 2017 Less Enacted Div B P.L.114-254** OCO -----	FY 2017 Remaining Req with CR Adj Base + OCO -----
Other Procurement, Navy	6,484,116	6,712,605		6,712,605
Total Department of the Navy	6,484,116	6,712,605		6,712,605

## UNCLASSIFIED

Department of the Navy  
 FY 2018 President's Budget Request  
 Exhibit P-1 FY 2018 President's Budget Request  
 Total Obligational Authority  
 (Dollars in Thousands)

Appropriation -----	FY 2018 Base -----	FY 2018 OCO -----	FY 2018 Total -----
Other Procurement, Navy	8,277,789	220,059	8,497,848
Total Department of the Navy	8,277,789	220,059	8,497,848

## UNCLASSIFIED

Department of the Navy  
 FY 2018 President's Budget Request  
 Exhibit P-1 FY 2018 President's Budget Request  
 Total Obligational Authority  
 (Dollars in Thousands)

Appropriation: Other Procurement, Navy

Budget Activity -----	FY 2016 Base + OCO -----	FY 2017 PB Request with CR Adj Base -----	FY 2017 Total PB Requests* with CR Adj Base -----
01. Ships Support Equipment	1,942,753	1,878,390	1,948,076
02. Communications & Electronics Equip	2,347,567	2,122,908	2,184,808
03. Aviation Support Equipment	419,644	439,109	439,109
04. Ordnance Support Equipment	852,190	933,565	982,065
05. Civil Engineering Support Equip	55,671	84,345	84,345
06. Supply Support Equipment	247,302	316,609	316,609
07. Personnel & Command Support Equip	444,006	364,275	402,178
08. Spares and Repair Parts	276,333	199,660	199,660
20. Undistributed		133,069	133,069
Total Other Procurement, Navy	6,585,466	6,471,930	6,689,919

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FY 2018 President's Budget Request  
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Total Obligational Authority  
(Dollars in Thousands)

Appropriation: Other Procurement, Navy

Budget Activity -----	FY 2017 PB Request with CR Adj OCO -----	FY 2017 Total PB Requests* with CR Adj OCO -----	FY 2017 Less Enacted Div B P.L.114-254** OCO -----	FY 2017 Remaining Req with CR Adj OCO -----
01. Ships Support Equipment				
02. Communications & Electronics Equip	12,000	12,000		12,000
03. Aviation Support Equipment				
04. Ordnance Support Equipment	99,329	104,829		104,829
05. Civil Engineering Support Equip	630	630		630
06. Supply Support Equipment	25	25		25
07. Personnel & Command Support Equip	12,222	17,222		17,222
08. Spares and Repair Parts				
20. Undistributed	-112,020	-112,020		-112,020
Total Other Procurement, Navy	12,186	22,686		22,686

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Total Obligational Authority  
(Dollars in Thousands)

Appropriation: Other Procurement, Navy

Budget Activity -----	FY 2017 Total PB Requests** with CR Adj Base+OCO+SAA -----	FY 2017 Total PB Requests* with CR Adj Base + OCO -----	FY 2017 Less Enacted Div B P.L.114-254** OCO -----	FY 2017 Remaining Req with CR Adj Base + OCO -----
01. Ships Support Equipment	1,878,390	1,948,076		1,948,076
02. Communications & Electronics Equip	2,134,908	2,196,808		2,196,808
03. Aviation Support Equipment	439,109	439,109		439,109
04. Ordnance Support Equipment	1,032,894	1,086,894		1,086,894
05. Civil Engineering Support Equip	84,975	84,975		84,975
06. Supply Support Equipment	316,634	316,634		316,634
07. Personnel & Command Support Equip	376,497	419,400		419,400
08. Spares and Repair Parts	199,660	199,660		199,660
20. Undistributed	21,049	21,049		21,049
Total Other Procurement, Navy	6,484,116	6,712,605		6,712,605

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

Appropriation: Other Procurement, Navy

Budget Activity -----	FY 2018 Base -----	FY 2018 OCO -----	FY 2018 Total -----
01. Ships Support Equipment	3,076,818	30,348	3,107,166
02. Communications & Electronics Equip	2,565,260	62,622	2,627,882
03. Aviation Support Equipment	441,542	29,245	470,787
04. Ordnance Support Equipment	929,371	34,406	963,777
05. Civil Engineering Support Equip	99,619	5,136	104,755
06. Supply Support Equipment	510,285	584	510,869
07. Personnel & Command Support Equip	376,329	56,540	432,869
08. Spares and Repair Parts	278,565	1,178	279,743
20. Undistributed			
Total Other Procurement, Navy	8,277,789	220,059	8,497,848



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Department of the Navy  
FY 2018 President's Budget Request  
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Total Obligational Authority  
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2016 Base + OCO Quantity Cost	FY 2017 PB Request with CR Adj Base Quantity Cost	FY 2017 Total PB Requests* with CR Adj Base Quantity Cost	S e c
----	-----	-----	-----	-----	-----	----
Budget Activity 01: Ships Support Equipment						
-----						
Ship Propulsion Equipment						
1	LM-2500 Gas Turbine	A	4,881			U
2	Allison 501k Gas Turbine	A	5,814			U
3	Surface Power Equipment	A		15,514	15,514	U
4	Hybrid Electric Drive (HED)		29,106	40,132	15,132	U
Generators						
5	Surface Combatant HM&E	A	36,860	29,974	29,974	U
Navigation Equipment						
6	Other Navigation Equipment	A	63,481	63,942	63,942	U
Periscopes						
7	Sub Periscopes & Imaging Equip	A	63,109			U
Other Shipboard Equipment						
8	Sub Periscope, Imaging and Supt Equip Prog	A		136,421	154,421	U
9	DDG Mod	A	421,195	367,766	432,766	U
10	Firefighting Equipment	A	13,983	14,743	14,743	U
11	Command and Control Switchboard	A	2,255	2,140	2,140	U
12	LHA/LHD Midlife	A	11,017	24,939	24,939	U
13	LCC 19/20 Extended Service Life Program	A	8,631			U

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Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 PB Request with CR Adj OCO Quantity	Cost	FY 2017 Total PB Requests* with CR Adj OCO Quantity	Cost	FY 2017 Less Enacted Div B P.L.114-254** OCO Quantity	Cost	FY 2017 Remaining Req with CR Adj OCO Quantity	Cost	S e c
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Budget Activity 01: Ships Support Equipment											
-----											
Ship Propulsion Equipment											
1	LM-2500 Gas Turbine	A									U
2	Allison 501k Gas Turbine	A									U
3	Surface Power Equipment	A									U
4	Hybrid Electric Drive (HED)										U
Generators											
5	Surface Combatant HM&E	A									U
Navigation Equipment											
6	Other Navigation Equipment	A									U
Periscopes											
7	Sub Periscopes & Imaging Equip	A									U
Other Shipboard Equipment											
8	Sub Periscope, Imaging and Supt Equip Prog	A									U
9	DDG Mod	A									U
10	Firefighting Equipment	A									U
11	Command and Control Switchboard	A									U
12	LHA/LHD Midlife	A									U
13	LCC 19/20 Extended Service Life Program	A									U

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Total Obligational Authority  
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 Total PB Requests** with CR Adj Base+OCO+SAA Quantity	Cost	FY 2017 Total PB Requests* with CR Adj Base + OCO Quantity	Cost	FY 2017 Less Enacted Div B P.L.114-254** OCO Quantity	Cost	FY 2017 Remaining Req with CR Adj Base + OCO Quantity	Cost	S e c e
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Budget Activity 01: Ships Support Equipment											
-----											
Ship Propulsion Equipment											
1	LM-2500 Gas Turbine	A									U
2	Allison 501k Gas Turbine	A									U
3	Surface Power Equipment	A		15,514		15,514			15,514		U
4	Hybrid Electric Drive (HED)			40,132		15,132			15,132		U
Generators											
5	Surface Combatant HM&E	A		29,974		29,974			29,974		U
Navigation Equipment											
6	Other Navigation Equipment	A		63,942		63,942			63,942		U
Periscopes											
7	Sub Periscopes & Imaging Equip	A									U
Other Shipboard Equipment											
8	Sub Periscope, Imaging and Supt Equip Prog	A		136,421		154,421			154,421		U
9	DDG Mod	A		367,766		432,766			432,766		U
10	Firefighting Equipment	A		14,743		14,743			14,743		U
11	Command and Control Switchboard	A		2,140		2,140			2,140		U
12	LHA/LHD Midlife	A		24,939		24,939			24,939		U
13	LCC 19/20 Extended Service Life Program	A									U

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(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Base Quantity	FY 2018 Base Cost	FY 2018 OCO Quantity	FY 2018 OCO Cost	FY 2018 Total Quantity	FY 2018 Total Cost	Se
Budget Activity 01: Ships Support Equipment									
Ship Propulsion Equipment									
1	LM-2500 Gas Turbine	A							U
2	Allison 501k Gas Turbine	A							U
3	Surface Power Equipment	A		41,910			41,910		U
4	Hybrid Electric Drive (HED)			6,331			6,331		U
Generators									
5	Surface Combatant HM&E	A		27,392			27,392		U
Navigation Equipment									
6	Other Navigation Equipment	A		65,943			65,943		U
Periscopes									
7	Sub Periscopes & Imaging Equip	A							U
Other Shipboard Equipment									
8	Sub Periscope, Imaging and Supt Equip Prog	A		151,240			151,240		U
9	DDG Mod	A		603,355			603,355		U
10	Firefighting Equipment	A		15,887			15,887		U
11	Command and Control Switchboard	A		2,240			2,240		U
12	LHA/LHD Midlife	A		30,287			30,287		U
13	LCC 19/20 Extended Service Life Program	A							U

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(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2016 Base + OCO		FY 2017 PB Request with CR Adj Base		FY 2017 Total PB Requests* with CR Adj Base		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	
14	Pollution Control Equipment	B		16,609		20,191		20,191	U
15	Submarine Support Equipment	A		10,498		8,995		8,995	U
16	Virginia Class Support Equipment	A		35,747		66,838		66,838	U
17	LCS Class Support Equipment			39,349		54,823		54,823	U
18	Submarine Batteries			23,072		23,359		23,359	U
19	LPD Class Support Equipment			37,929		40,321		40,321	U
20	DDG 1000 Class Support Equipment	A				33,404		33,404	U
21	Strategic Platform Support Equip	A		18,563		15,836		15,836	U
22	DSSP Equipment	A		8,851		806		806	U
23	CG Modernization	A		99,500					U
24	LCAC	A		15,125		3,090		3,090	U
25	Underwater EOD Programs			51,652		24,350		24,350	U
26	Items Less Than \$5 Million	A		89,349		88,719		88,719	U
27	Chemical Warfare Detectors	A		3,027		2,873		2,873	U
28	Submarine Life Support System	A		7,399		6,043		6,043	U
	Reactor Plant Equipment								
29	Reactor Power Units	A							U
30	Reactor Components	A		296,095		342,158		342,158	U
	Ocean Engineering								
31	Diving and Salvage Equipment	A		15,982		8,973		8,973	U

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Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 PB Request with CR Adj OCO Quantity	Cost	FY 2017 Total PB Requests* with CR Adj OCO Quantity	Cost	FY 2017 Less Enacted Div B P.L.114-254** OCO Quantity	Cost	FY 2017 Remaining Req with CR Adj OCO Quantity	Cost	S e c
----	-----	-----	-----	----	-----	----	-----	----	-----	----	-
14	Pollution Control Equipment	B									U
15	Submarine Support Equipment	A									U
16	Virginia Class Support Equipment	A									U
17	LCS Class Support Equipment										U
18	Submarine Batteries										U
19	LPD Class Support Equipment										U
20	DDG 1000 Class Support Equipment	A									U
21	Strategic Platform Support Equip	A									U
22	DSSP Equipment	A									U
23	CG Modernization	A									U
24	LCAC	A									U
25	Underwater EOD Programs										U
26	Items Less Than \$5 Million	A									U
27	Chemical Warfare Detectors	A									U
28	Submarine Life Support System	A									U
	Reactor Plant Equipment										
29	Reactor Power Units	A									U
30	Reactor Components	A									U
	Ocean Engineering										
31	Diving and Salvage Equipment	A									U

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Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 Total PB Requests** with CR Adj Base+OCO+SAA Quantity	Cost	FY 2017 Total PB Requests* with CR Adj Base + OCO Quantity	Cost	FY 2017 Less Enacted Div B P.L.114-254** OCO Quantity	Cost	FY 2017 Remaining Req with CR Adj Base + OCO Quantity	Cost	S e c
----	-----	-----	-----	----	-----	----	-----	----	-----	----	-
14	Pollution Control Equipment	B		20,191		20,191				20,191	U
15	Submarine Support Equipment	A		8,995		8,995				8,995	U
16	Virginia Class Support Equipment	A		66,838		66,838				66,838	U
17	LCS Class Support Equipment			54,823		54,823				54,823	U
18	Submarine Batteries			23,359		23,359				23,359	U
19	LPD Class Support Equipment			40,321		40,321				40,321	U
20	DDG 1000 Class Support Equipment	A		33,404		33,404				33,404	U
21	Strategic Platform Support Equip	A		15,836		15,836				15,836	U
22	DSSP Equipment	A		806		806				806	U
23	CG Modernization	A									U
24	LCAC	A		3,090		3,090				3,090	U
25	Underwater EOD Programs			24,350		24,350				24,350	U
26	Items Less Than \$5 Million	A		88,719		88,719				88,719	U
27	Chemical Warfare Detectors	A		2,873		2,873				2,873	U
28	Submarine Life Support System	A		6,043		6,043				6,043	U
	Reactor Plant Equipment										
29	Reactor Power Units	A									U
30	Reactor Components	A		342,158		342,158				342,158	U
	Ocean Engineering										
31	Diving and Salvage Equipment	A		8,973		8,973				8,973	U

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Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Base Quantity	Cost	FY 2018 OCO Quantity	Cost	FY 2018 Total Quantity	Cost	S e c
----	-----	-----	-----	-----	-----	-----	-----	-----	-----
14	Pollution Control Equipment	B		17,293			17,293		U
15	Submarine Support Equipment	A		27,990			27,990		U
16	Virginia Class Support Equipment	A		46,610			46,610		U
17	LCS Class Support Equipment			47,955			47,955		U
18	Submarine Batteries			17,594			17,594		U
19	LPD Class Support Equipment			61,908			61,908		U
20	DDG 1000 Class Support Equipment	A							U
21	Strategic Platform Support Equip	A		15,812			15,812		U
22	DSSP Equipment	A		4,178			4,178		U
23	CG Modernization	A		306,050			306,050		U
24	LCAC	A		5,507			5,507		U
25	Underwater EOD Programs			55,922		12,348	68,270		U
26	Items Less Than \$5 Million	A		96,909			96,909		U
27	Chemical Warfare Detectors	A		3,036			3,036		U
28	Submarine Life Support System	A		10,364			10,364		U
	Reactor Plant Equipment								
29	Reactor Power Units	A		324,925			324,925		U
30	Reactor Components	A		534,468			534,468		U
	Ocean Engineering								
31	Diving and Salvage Equipment	A		10,619			10,619		U

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Total Obligational Authority  
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Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2016 Base + OCO Quantity Cost	FY 2017 PB Request with CR Adj Base Quantity Cost	FY 2017 Total PB Requests* with CR Adj Base Quantity Cost	S e c
----	-----	-----	-----	-----	-----	----
	Small Boats					
32	Standard Boats	A	29,982	43,684	55,370	U
	Training Equipment					
33	Other Ships Training Equipment	A	62,358			U
	Production Facilities Equipment					
34	Operating Forces Ipe	A	61,718	75,421	75,421	U
	Other Ship Support					
35	Nuclear Alterations	A	132,625	172,718	172,718	U
36	LCS Common Mission Modules Equipment		23,061	27,840	27,840	U
37	LCS MCM Mission Modules		67,451	57,146	57,146	U
38	LCS ASW Mission Modules			31,952	31,952	U
39	LCS SUW Mission Modules		35,228	22,466	22,466	U
40	LCS In-Service Modernization	A				U
41	Remote Minehunting System (RMS)	A	53,077			U
	Logistic Support					
42	LSD Midlife & Modernization		48,174	10,813	10,813	U
			-----	-----	-----	
	Total Ships Support Equipment		1,942,753	1,878,390	1,948,076	

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Department of the Navy  
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Line No	Item Nomenclature	Ident Code	FY 2017 PB Request with CR Adj OCO Quantity	Cost	FY 2017 Total PB Requests* with CR Adj OCO Quantity	Cost	FY 2017 Less Enacted Div B P.L.114-254** OCO Quantity	Cost	FY 2017 Remaining Req with CR Adj OCO Quantity	Cost	S e c
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	Small Boats										
32	Standard Boats	A									U
	Training Equipment										
33	Other Ships Training Equipment	A									U
	Production Facilities Equipment										
34	Operating Forces Ipe	A									U
	Other Ship Support										
35	Nuclear Alterations	A									U
36	LCS Common Mission Modules Equipment										U
37	LCS MCM Mission Modules										U
38	LCS ASW Mission Modules										U
39	LCS SUW Mission Modules										U
40	LCS In-Service Modernization	A									U
41	Remote Minehunting System (RMS)	A									U
	Logistic Support										
42	LSD Midlife & Modernization										U
	Total Ships Support Equipment										

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Line No	Item Nomenclature	Ident Code	FY 2017 Total PB Requests** with CR Adj Base+OCO+SAA Quantity	Cost	FY 2017 Total PB Requests* with CR Adj Base + OCO Quantity	Cost	FY 2017 Less Enacted Div B P.L.114-254** OCO Quantity	Cost	FY 2017 Remaining Req with CR Adj Base + OCO Quantity	Cost	S e c
----	-----	-----	-----	----	-----	----	-----	----	-----	----	-
	Small Boats										
32	Standard Boats	A		43,684		55,370			55,370		U
	Training Equipment										
33	Other Ships Training Equipment	A									U
	Production Facilities Equipment										
34	Operating Forces Ipe	A		75,421		75,421			75,421		U
	Other Ship Support										
35	Nuclear Alterations	A		172,718		172,718			172,718		U
36	LCS Common Mission Modules Equipment			27,840		27,840			27,840		U
37	LCS MCM Mission Modules			57,146		57,146			57,146		U
38	LCS ASW Mission Modules			31,952		31,952			31,952		U
39	LCS SUW Mission Modules			22,466		22,466			22,466		U
40	LCS In-Service Modernization	A									U
41	Remote Minehunting System (RMS)	A									U
	Logistic Support										
42	LSD Midlife & Modernization			10,813		10,813			10,813		U
				-----		-----		-----	-----		
	Total Ships Support Equipment			1,878,390		1,948,076			1,948,076		

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Department of the Navy  
FY 2018 President's Budget Request  
Exhibit P-1 FY 2018 President's Budget Request  
Total Obligational Authority  
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Base Quantity	Cost	FY 2018 OCO Quantity	Cost	FY 2018 Total Quantity	Cost	S e c
----	-----	-----	-----	----	-----	----	-----	----	-
	Small Boats								
32	Standard Boats	A		46,094		18,000		64,094	U
	Training Equipment								
33	Other Ships Training Equipment	A							U
	Production Facilities Equipment								
34	Operating Forces Ipe	A		191,541				191,541	U
	Other Ship Support								
35	Nuclear Alterations	A							U
36	LCS Common Mission Modules Equipment			34,666				34,666	U
37	LCS MCM Mission Modules			55,870				55,870	U
38	LCS ASW Mission Modules								U
39	LCS SUW Mission Modules			52,960				52,960	U
40	LCS In-Service Modernization	A		74,426				74,426	U
41	Remote Minehunting System (RMS)	A							U
	Logistic Support								
42	LSD Midlife & Modernization			89,536				89,536	U
				-----		-----		-----	
	Total Ships Support Equipment			3,076,818		30,348		3,107,166	

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Department of the Navy  
FY 2018 President's Budget Request  
Exhibit P-1 FY 2018 President's Budget Request  
Total Obligational Authority  
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2016 Base + OCO		FY 2017 PB Request with CR Adj Base		FY 2017 Total PB Requests* with CR Adj Base		S e c	
			Quantity	Cost	Quantity	Cost	Quantity	Cost		
Budget Activity 02: Communications & Electronics Equip										
-----										
Ship Sonars										
43	SPQ-9B Radar	A		19,841		14,363		14,363	U	
44	AN/SQQ-89 Surf ASW Combat System	A		103,241		90,029		90,029	U	
45	SSN Acoustics	A		232,134					U	
46	SSN Acoustic Equipment	A				248,765		288,265	U	
47	Undersea Warfare Support Equipment	A		7,331		7,163		7,163	U	
48	Sonar Switches and Transducers	A		11,781					U	
ASW Electronic Equipment										
49	Submarine Acoustic Warfare System	A		19,718		21,291		21,291	U	
50	SSTD	A		8,396		6,893		6,893	U	
51	Fixed Surveillance System	A		146,968		145,701		145,701	U	
52	SURTASS	A		26,153		36,136		46,136	U	
53	Maritime Patrol and Reconnsaissance Force	A		13,725					U	
Electronic Warfare Equipment										
54	AN/SLQ-32	A		259,271		274,892		274,892	U	
Reconnaissance Equipment										
55	Shipboard IW Exploit	A		138,002		170,733		170,733	U	
56	Automated Identification System (AIS)			152		958		958	U	

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Department of the Navy  
FY 2018 President's Budget Request  
Exhibit P-1 FY 2018 President's Budget Request  
Total Obligational Authority  
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 PB Request with CR Adj OCO Quantity	Cost	FY 2017 Total PB Requests* with CR Adj OCO Quantity	Cost	FY 2017 Less Enacted Div B P.L.114-254** OCO Quantity	Cost	FY 2017 Remaining Req with CR Adj OCO Quantity	Cost	S e c
----	-----	-----	-----	----	-----	----	-----	----	-----	----	-
Budget Activity 02: Communications & Electronics Equip											
-----											
Ship Sonars											
43	SPQ-9B Radar	A									U
44	AN/SQQ-89 Surf ASW Combat System	A									U
45	SSN Acoustics	A									U
46	SSN Acoustic Equipment	A									U
47	Undersea Warfare Support Equipment	A									U
48	Sonar Switches and Transducers	A									U
ASW Electronic Equipment											
49	Submarine Acoustic Warfare System	A									U
50	SSTD	A									U
51	Fixed Surveillance System	A									U
52	SURTASS	A									U
53	Maritime Patrol and Reconnaissance Force	A									U
Electronic Warfare Equipment											
54	AN/SLQ-32	A									U
Reconnaissance Equipment											
55	Shipboard IW Exploit	A									U
56	Automated Identification System (AIS)										U

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Department of the Navy  
FY 2018 President's Budget Request  
Exhibit P-1 FY 2018 President's Budget Request  
Total Obligational Authority  
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 Total PB Requests** with CR Adj Base+OCO+SAA Quantity	Cost	FY 2017 Total PB Requests* with CR Adj Base + OCO Quantity	Cost	FY 2017 Less Enacted Div B P.L.114-254** OCO Quantity	Cost	FY 2017 Remaining Req with CR Adj Base + OCO Quantity	Cost	S e c
Budget Activity 02: Communications & Electronics Equip											
Ship Sonars											
43	SPQ-9B Radar	A	14,363		14,363				14,363		U
44	AN/SQQ-89 Surf ASW Combat System	A	90,029		90,029				90,029		U
45	SSN Acoustics	A									U
46	SSN Acoustic Equipment	A	248,765		288,265				288,265		U
47	Undersea Warfare Support Equipment	A	7,163		7,163				7,163		U
48	Sonar Switches and Transducers	A									U
ASW Electronic Equipment											
49	Submarine Acoustic Warfare System	A	21,291		21,291				21,291		U
50	SSTD	A	6,893		6,893				6,893		U
51	Fixed Surveillance System	A	145,701		145,701				145,701		U
52	SURTASS	A	36,136		46,136				46,136		U
53	Maritime Patrol and Reconnsaissance Force	A									U
Electronic Warfare Equipment											
54	AN/SLQ-32	A	274,892		274,892				274,892		U
Reconnaissance Equipment											
55	Shipboard IW Exploit	A	170,733		170,733				170,733		U
56	Automated Identification System (AIS)		958		958				958		U

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FY 2018 President's Budget Request  
Exhibit P-1 FY 2018 President's Budget Request  
Total Obligational Authority  
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Base Quantity	Cost	FY 2018 OCO Quantity	Cost	FY 2018 Total Quantity	Cost	S e c
Budget Activity 02: Communications & Electronics Equip									
Ship Sonars									
43	SPQ-9B Radar	A		30,086			30,086		U
44	AN/SQQ-89 Surf ASW Combat System	A		102,222			102,222		U
45	SSN Acoustics	A							U
46	SSN Acoustic Equipment	A		287,553		43,500	331,053		U
47	Undersea Warfare Support Equipment	A		13,653			13,653		U
48	Sonar Switches and Transducers	A							U
ASW Electronic Equipment									
49	Submarine Acoustic Warfare System	A		21,449			21,449		U
50	SSTD	A		12,867			12,867		U
51	Fixed Surveillance System	A		300,102			300,102		U
52	SURTASS	A		30,180			30,180		U
53	Maritime Patrol and Reconnaissance Force	A							U
Electronic Warfare Equipment									
54	AN/SLQ-32	A		240,433			240,433		U
Reconnaissance Equipment									
55	Shipboard IW Exploit	A		187,007			187,007		U
56	Automated Identification System (AIS)			510			510		U

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FY 2018 President's Budget Request  
Exhibit P-1 FY 2018 President's Budget Request  
Total Obligational Authority  
(Dollars in Thousands)

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Line No	Item Nomenclature	Ident Code	FY 2016 Base + OCO Quantity Cost	FY 2017 PB Request with CR Adj Base Quantity Cost	FY 2017 Total PB Requests* with CR Adj Base Quantity Cost	S e c
----	-----	-----	-----	-----	-----	-----
Submarine Surveillance Equipment						
57	Submarine Support Equipment Prog	A	83,472			U
Other Ship Electronic Equipment						
58	Cooperative Engagement Capability	B	25,695	22,034	22,034	U
59	Trusted Information System (TIS)		284			U
60	Naval Tactical Command Support System (NTCSS)	A	14,416	12,336	12,336	U
61	ATDLS	A	22,169	30,105	30,105	U
62	Navy Command and Control System (NCCS)		4,054	4,556	4,556	U
63	Minesweeping System Replacement	A	21,014	56,675	56,675	U
64	Shallow Water MCM	B		8,875	8,875	U
65	Navstar GPS Receivers (SPACE)	A	11,129	12,752	12,752	U
66	American Forces Radio and TV Service	A	4,240	4,577	4,577	U
67	Strategic Platform Support Equip	A	17,440	8,972	8,972	U
Training Equipment						
68	Other Training Equipment	A	41,314			U
Aviation Electronic Equipment						
69	Matcals	A	10,011			U
70	Ashore ATC Equipment	A		75,068	75,068	U
71	Afloat ATC Equipment	A		33,484	33,484	U
72	Shipboard Air Traffic Control	B	9,346			U

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Exhibit P-1 FY 2018 President's Budget Request  
Total Obligational Authority  
(Dollars in Thousands)

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Line No	Item Nomenclature	Ident Code	FY 2017 PB Request with CR Adj OCO Quantity	Cost	FY 2017 Total PB Requests* with CR Adj OCO Quantity	Cost	FY 2017 Less Enacted Div B P.L.114-254** OCO Quantity	Cost	FY 2017 Remaining Req with CR Adj OCO Quantity	Cost	S e c
----	-----	-----	-----	----	-----	----	-----	----	-----	----	-
	Submarine Surveillance Equipment										
57	Submarine Support Equipment Prog	A									U
	Other Ship Electronic Equipment										
58	Cooperative Engagement Capability	B									U
59	Trusted Information System (TIS)										U
60	Naval Tactical Command Support System (NTCSS)	A									U
61	ATDLS	A									U
62	Navy Command and Control System (NCCS)										U
63	Minesweeping System Replacement	A									U
64	Shallow Water MCM	B									U
65	Navstar GPS Receivers (SPACE)	A									U
66	American Forces Radio and TV Service	A									U
67	Strategic Platform Support Equip	A									U
	Training Equipment										
68	Other Training Equipment	A									U
	Aviation Electronic Equipment										
69	Matcals	A									U
70	Ashore ATC Equipment	A									U
71	Afloat ATC Equipment	A									U
72	Shipboard Air Traffic Control	B									U

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Total Obligational Authority  
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 Total PB Requests** with CR Adj Base+OCO+SAA Quantity	Cost	FY 2017 Total PB Requests* with CR Adj Base + OCO Quantity	Cost	FY 2017 Less Enacted Div B P.L.114-254** OCO Quantity	Cost	FY 2017 Remaining Req with CR Adj Base + OCO Quantity	Cost	S e c -
Submarine Surveillance Equipment											
57	Submarine Support Equipment Prog	A									U
Other Ship Electronic Equipment											
58	Cooperative Engagement Capability	B		22,034		22,034			22,034		U
59	Trusted Information System (TIS)										U
60	Naval Tactical Command Support System (NTCSS)	A		12,336		12,336			12,336		U
61	ATDLS	A		30,105		30,105			30,105		U
62	Navy Command and Control System (NCCS)			4,556		4,556			4,556		U
63	Minesweeping System Replacement	A		56,675		56,675			56,675		U
64	Shallow Water MCM	B		8,875		8,875			8,875		U
65	Navstar GPS Receivers (SPACE)	A		12,752		12,752			12,752		U
66	American Forces Radio and TV Service	A		4,577		4,577			4,577		U
67	Strategic Platform Support Equip	A		8,972		8,972			8,972		U
Training Equipment											
68	Other Training Equipment	A									U
Aviation Electronic Equipment											
69	Matcals	A									U
70	Ashore ATC Equipment	A		75,068		75,068			75,068		U
71	Afloat ATC Equipment	A		33,484		33,484			33,484		U
72	Shipboard Air Traffic Control	B									U

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Department of the Navy  
FY 2018 President's Budget Request  
Exhibit P-1 FY 2018 President's Budget Request  
Total Obligational Authority  
(Dollars in Thousands)

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Line No	Item Nomenclature	Ident Code	FY 2018 Base Quantity	Cost	FY 2018 OCO Quantity	Cost	FY 2018 Total Quantity	Cost	S e c
----	-----	-----	-----	----	-----	----	-----	----	-
	Submarine Surveillance Equipment								
57	Submarine Support Equipment Prog	A							U
	Other Ship Electronic Equipment								
58	Cooperative Engagement Capability	B		23,892			23,892		U
59	Trusted Information System (TIS)								U
60	Naval Tactical Command Support System (NTCSS)	A		10,741			10,741		U
61	ATDLS	A		38,016			38,016		U
62	Navy Command and Control System (NCCS)			4,512			4,512		U
63	Minesweeping System Replacement	A		31,531			31,531		U
64	Shallow Water MCM	B		8,796			8,796		U
65	Navstar GPS Receivers (SPACE)	A		15,923			15,923		U
66	American Forces Radio and TV Service	A		2,730			2,730		U
67	Strategic Platform Support Equip	A		6,889			6,889		U
	Training Equipment								
68	Other Training Equipment	A							U
	Aviation Electronic Equipment								
69	Matcals	A							U
70	Ashore ATC Equipment	A		71,882			71,882		U
71	Afloat ATC Equipment	A		44,611			44,611		U
72	Shipboard Air Traffic Control	B							U

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FY 2018 President's Budget Request  
Exhibit P-1 FY 2018 President's Budget Request  
Total Obligational Authority  
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2016 Base + OCO Quantity Cost	FY 2017 PB Request with CR Adj Base Quantity Cost	FY 2017 Total PB Requests* with CR Adj Base Quantity Cost	S e c
----	-----	-----	-----	-----	-----	----
73	Automatic Carrier Landing System	A	21,281			U
74	National Air Space System	B	25,621			U
75	Fleet Air Traffic Control Systems	A	8,249			U
76	Landing Systems	A	11,910			U
77	ID Systems	A	29,676	22,177	22,177	U
78	Naval Mission Planning Systems	A	13,737	14,273	14,273	U
	Other Shore Electronic Equipment					
79	Deployable Joint Command & Control	A	1,314			U
80	Tactical/Mobile C4I Systems	A	13,600	27,927	27,927	U
81	DCGS-N	A	31,809	12,676	12,676	U
82	CANES		274,641	212,030	212,030	U
83	RADIAC	A	6,768	8,092	8,092	U
84	CANES-Intell		28,695	36,013	36,013	U
85	GPETE	A	6,962	6,428	6,428	U
86	MASF		290			U
87	Integ Combat System Test Facility	A	13,614	8,376	8,376	U
88	EMI Control Instrumentation	A	4,175	3,971	3,971	U
89	Items Less Than \$5 Million	A	66,176	58,721	58,721	U
	Shipboard Communications					
90	Shipboard Tactical Communications	A	8,277	17,366	17,366	U

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Department of the Navy  
FY 2018 President's Budget Request  
Exhibit P-1 FY 2018 President's Budget Request  
Total Obligational Authority  
(Dollars in Thousands)

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Line No	Item Nomenclature	Ident Code	FY 2017 PB Request with CR Adj OCO Quantity	Cost	FY 2017 Total PB Requests* with CR Adj OCO Quantity	Cost	FY 2017 Less Enacted Div B P.L.114-254** OCO Quantity	Cost	FY 2017 Remaining Req with CR Adj OCO Quantity	Cost	S e c
----	-----	-----	-----	----	-----	----	-----	----	-----	----	-
73	Automatic Carrier Landing System	A									U
74	National Air Space System	B									U
75	Fleet Air Traffic Control Systems	A									U
76	Landing Systems	A									U
77	ID Systems	A									U
78	Naval Mission Planning Systems	A									U
	Other Shore Electronic Equipment										
79	Deployable Joint Command & Control	A									U
80	Tactical/Mobile C4I Systems	A									U
81	DCGS-N	A		12,000		12,000			12,000		U
82	CANES										U
83	RADIAC	A									U
84	CANES-Intell										U
85	GPETE	A									U
86	MASF										U
87	Integ Combat System Test Facility	A									U
88	EMI Control Instrumentation	A									U
89	Items Less Than \$5 Million	A									U
	Shipboard Communications										
90	Shipboard Tactical Communications	A									U

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Department of the Navy  
FY 2018 President's Budget Request  
Exhibit P-1 FY 2018 President's Budget Request  
Total Obligational Authority  
(Dollars in Thousands)

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Line No	Item Nomenclature	Ident Code	FY 2017 Total PB Requests** with CR Adj Base+OCO+SAA		FY 2017 Total PB Requests* with CR Adj Base + OCO		FY 2017 Less Enacted Div B P.L.114-254** OCO		FY 2017 Remaining Req with CR Adj Base + OCO		S e c
----	-----	-----	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	-
73	Automatic Carrier Landing System	A									U
74	National Air Space System	B									U
75	Fleet Air Traffic Control Systems	A									U
76	Landing Systems	A									U
77	ID Systems	A		22,177		22,177				22,177	U
78	Naval Mission Planning Systems	A		14,273		14,273				14,273	U
	Other Shore Electronic Equipment										
79	Deployable Joint Command & Control	A									U
80	Tactical/Mobile C4I Systems	A		27,927		27,927				27,927	U
81	DCGS-N	A		24,676		24,676				24,676	U
82	CANES			212,030		212,030				212,030	U
83	RADIAC	A		8,092		8,092				8,092	U
84	CANES-Intell			36,013		36,013				36,013	U
85	GPETE	A		6,428		6,428				6,428	U
86	MASF										U
87	Integ Combat System Test Facility	A		8,376		8,376				8,376	U
88	EMI Control Instrumentation	A		3,971		3,971				3,971	U
89	Items Less Than \$5 Million	A		58,721		58,721				58,721	U
	Shipboard Communications										
90	Shipboard Tactical Communications	A		17,366		17,366				17,366	U

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(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Base Quantity	Cost	FY 2018 OCO Quantity	Cost	FY 2018 Total Quantity	Cost	S e c
----	-----	-----	-----	----	-----	----	-----	----	-
73	Automatic Carrier Landing System	A							U
74	National Air Space System	B							U
75	Fleet Air Traffic Control Systems	A							U
76	Landing Systems	A							U
77	ID Systems	A		21,239			21,239		U
78	Naval Mission Planning Systems	A		11,976		2,550	14,526		U
	Other Shore Electronic Equipment								
79	Deployable Joint Command & Control	A							U
80	Tactical/Mobile C4I Systems	A		32,425		7,900	40,325		U
81	DCGS-N	A		13,790		6,392	20,182		U
82	CANES			322,754			322,754		U
83	RADIAC	A		10,718			10,718		U
84	CANES-Intell			48,028			48,028		U
85	GPETE	A		6,861			6,861		U
86	MASF			8,081			8,081		U
87	Integ Combat System Test Facility	A		5,019			5,019		U
88	EMI Control Instrumentation	A		4,188			4,188		U
89	Items Less Than \$5 Million	A		105,292			105,292		U
	Shipboard Communications								
90	Shipboard Tactical Communications	A		23,695			23,695		U

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Line No	Item Nomenclature	Ident Code	FY 2016 Base + OCO Quantity Cost	FY 2017 PB Request with CR Adj Base Quantity Cost	FY 2017 Total PB Requests* with CR Adj Base Quantity Cost	S e c
91	Ship Communications Automation	A	121,817	102,479	114,879	U
92	Communications Items Under \$5M	A	17,025	10,403	10,403	U
	Submarine Communications					
93	Submarine Broadcast Support	A	15,485	34,151	34,151	U
94	Submarine Communication Equipment	A	58,037	64,529	64,529	U
	Satellite Communications					
95	Satellite Communications Systems	A	30,892	14,414	14,414	U
96	Navy Multiband Terminal (NMT)		118,142	38,365	38,365	U
	Shore Communications					
97	Joint Communications Support Element (JCSE)	A	4,591	4,156	4,156	U
98	Electrical Power Systems	A	1,246			U
	Cryptographic Equipment					
99	Info Systems Security Program (ISSP)	A	126,237	85,694	85,694	U
100	MIO Intel Exploitation Team	A	970	920	920	U
	Cryptologic Equipment					
101	Cryptologic Communications Equip	A	11,433	21,098	21,098	U
	Other Electronic Support					
102	Navy METOC-2***	A	1,483			U
103	Navy METOC-3***	A	483			U
104	USMC METOC-2***	A	323			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 PB Request with CR Adj OCO Quantity	Cost	FY 2017 Total PB Requests* with CR Adj OCO Quantity	Cost	FY 2017 Less Enacted Div B P.L.114-254** OCO Quantity	Cost	FY 2017 Remaining Req with CR Adj OCO Quantity	Cost	S e c
91	Ship Communications Automation	A									U
92	Communications Items Under \$5M	A									U
	Submarine Communications										
93	Submarine Broadcast Support	A									U
94	Submarine Communication Equipment	A									U
	Satellite Communications										
95	Satellite Communications Systems	A									U
96	Navy Multiband Terminal (NMT)										U
	Shore Communications										
97	Joint Communications Support Element (JCSE)	A									U
98	Electrical Power Systems	A									U
	Cryptographic Equipment										
99	Info Systems Security Program (ISSP)	A									U
100	MIO Intel Exploitation Team	A									U
	Cryptologic Equipment										
101	Cryptologic Communications Equip	A									U
	Other Electronic Support										
102	Navy METOC-2***	A									U
103	Navy METOC-3***	A									U
104	USMC METOC-2***	A									U

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Department of the Navy  
FY 2018 President's Budget Request  
Exhibit P-1 FY 2018 President's Budget Request  
Total Obligational Authority  
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 Total PB Requests** with CR Adj Base+OCO+SAA Quantity Cost	FY 2017 Total PB Requests* with CR Adj Base + OCO Quantity Cost	FY 2017 Less Enacted Div B P.L.114-254** OCO Quantity Cost	FY 2017 Remaining Req with CR Adj Base + OCO Quantity Cost	S e c
91	Ship Communications Automation	A	102,479	114,879		114,879	U
92	Communications Items Under \$5M	A	10,403	10,403		10,403	U
	Submarine Communications						
93	Submarine Broadcast Support	A	34,151	34,151		34,151	U
94	Submarine Communication Equipment	A	64,529	64,529		64,529	U
	Satellite Communications						
95	Satellite Communications Systems	A	14,414	14,414		14,414	U
96	Navy Multiband Terminal (NMT)		38,365	38,365		38,365	U
	Shore Communications						
97	Joint Communications Support Element (JCSE)	A	4,156	4,156		4,156	U
98	Electrical Power Systems	A					U
	Cryptographic Equipment						
99	Info Systems Security Program (ISSP)	A	85,694	85,694		85,694	U
100	MIO Intel Exploitation Team	A	920	920		920	U
	Cryptologic Equipment						
101	Cryptologic Communications Equip	A	21,098	21,098		21,098	U
	Other Electronic Support						
102	Navy METOC-2***	A					U
103	Navy METOC-3***	A					U
104	USMC METOC-2***	A					U

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Department of the Navy  
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Exhibit P-1 FY 2018 President's Budget Request  
Total Obligational Authority  
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Base Quantity	Cost	FY 2018 OCO Quantity	Cost	FY 2018 Total Quantity	Cost	S e c
91	Ship Communications Automation	A		103,990			103,990		U
92	Communications Items Under \$5M	A		18,577			18,577		U
	Submarine Communications								
93	Submarine Broadcast Support	A		29,669			29,669		U
94	Submarine Communication Equipment	A		86,204			86,204		U
	Satellite Communications								
95	Satellite Communications Systems	A		14,654			14,654		U
96	Navy Multiband Terminal (NMT)			69,764			69,764		U
	Shore Communications								
97	Joint Communications Support Element (JCSE)	A		4,256			4,256		U
98	Electrical Power Systems	A							U
	Cryptographic Equipment								
99	Info Systems Security Program (ISSP)	A		89,663			89,663		U
100	MIO Intel Exploitation Team	A		961			961		U
	Cryptologic Equipment								
101	Cryptologic Communications Equip	A		11,287		2,280	13,567		U
	Other Electronic Support								
102	Navy METOC-2***	A							U
103	Navy METOC-3***	A							U
104	USMC METOC-2***	A							U

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Department of the Navy  
FY 2018 President's Budget Request  
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Total Obligational Authority  
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2016 Base + OCO Quantity Cost	FY 2017 PB Request with CR Adj Base Quantity Cost	FY 2017 Total PB Requests* with CR Adj Base Quantity Cost	S e c
105	USMC METOC-1***	A	323			U
106	Monitoring - Hub***	A	308			U
107	DON UAS Video 5***	A	3,000			U
108	DON Robotics***	A	9,100			U
109	DON ACTS***	A	1,544			U
110	Coast Guard Equipment	A	2,529	32,291	32,291	U
	Drug Interdiction Support					
111	Other Drug Interdiction Support	A	4,507			U
	Total Communications & Electronics Equip		2,347,567	2,122,908	2,184,808	
	Budget Activity 03: Aviation Support Equipment					
	Sonobuoys					
112	Sonobuoys - All Types	A	166,385	162,588	162,588	U
	Aircraft Support Equipment					
113	Weapons Range Support Equipment	A	46,979	58,116	58,116	U
114	Aircraft Support Equipment	A	127,774	120,324	120,324	U
115	Advanced Arresting Gear (AAG)	A				U
116	Meteorological Equipment	A	14,997	29,253	29,253	U
117	DCRS/DPL	A	638	632	632	U
118	Airborne Mine Countermeasures	A	14,098	29,097	29,097	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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Department of the Navy  
FY 2018 President's Budget Request  
Exhibit P-1 FY 2018 President's Budget Request  
Total Obligational Authority  
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 PB Request with CR Adj OCO Quantity	Cost	FY 2017 Total PB Requests* with CR Adj OCO Quantity	Cost	FY 2017 Less Enacted Div B P.L.114-254** OCO Quantity	Cost	FY 2017 Remaining Req with CR Adj OCO Quantity	Cost	S e c
105	USMC METOC-1***	A									U
106	Monitoring - Hub***	A									U
107	DON UAS Video 5***	A									U
108	DON Robotics***	A									U
109	DON ACTS***	A									U
110	Coast Guard Equipment	A									U
	Drug Interdiction Support										
111	Other Drug Interdiction Support	A									U
	Total Communications & Electronics Equip			12,000		12,000				12,000	
Budget Activity 03: Aviation Support Equipment											
-----											
	Sonobuoys										
112	Sonobuoys - All Types	A									U
	Aircraft Support Equipment										
113	Weapons Range Support Equipment	A									U
114	Aircraft Support Equipment	A									U
115	Advanced Arresting Gear (AAG)	A									U
116	Meteorological Equipment	A									U
117	DCRS/DPL	A									U
118	Airborne Mine Countermeasures	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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Total Obligational Authority  
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 Total PB Requests** with CR Adj Base+OCO+SAA Quantity Cost	FY 2017 Total PB Requests* with CR Adj Base + OCO Quantity Cost	FY 2017 Less Enacted Div B P.L.114-254** OCO Quantity Cost	FY 2017 Remaining Req with CR Adj Base + OCO Quantity Cost	S e c
105	USMC METOC-1***	A					U
106	Monitoring - Hub***	A					U
107	DON UAS Video 5***	A					U
108	DON Robotics***	A					U
109	DON ACTS***	A					U
110	Coast Guard Equipment	A	32,291	32,291		32,291	U
	Drug Interdiction Support						
111	Other Drug Interdiction Support	A					U
	Total Communications & Electronics Equip		2,134,908	2,196,808		2,196,808	
Budget Activity 03: Aviation Support Equipment							
-----							
	Sonobuoys						
112	Sonobuoys - All Types	A	162,588	162,588		162,588	U
	Aircraft Support Equipment						
113	Weapons Range Support Equipment	A	58,116	58,116		58,116	U
114	Aircraft Support Equipment	A	120,324	120,324		120,324	U
115	Advanced Arresting Gear (AAG)	A					U
116	Meteorological Equipment	A	29,253	29,253		29,253	U
117	DCRS/DPL	A	632	632		632	U
118	Airborne Mine Countermeasures	A	29,097	29,097		29,097	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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Total Obligational Authority  
(Dollars in Thousands)

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Line No	Item Nomenclature	Ident Code	FY 2018 Base Quantity	Cost	FY 2018 OCO Quantity	Cost	FY 2018 Total Quantity	Cost	S e c
105	USMC METOC-1***	A							U
106	Monitoring - Hub***	A							U
107	DON UAS Video 5***	A							U
108	DON Robotics***	A							U
109	DON ACTS***	A							U
110	Coast Guard Equipment	A		36,584			36,584		U
	Drug Interdiction Support								
111	Other Drug Interdiction Support	A							U
	Total Communications & Electronics Equip			2,565,260		62,622	2,627,882		
	Budget Activity 03: Aviation Support Equipment								
	Sonobuoys								
112	Sonobuoys - All Types	A		173,616			173,616		U
	Aircraft Support Equipment								
113	Weapons Range Support Equipment	A		72,110			72,110		U
114	Aircraft Support Equipment	A		108,482			108,482		U
115	Advanced Arresting Gear (AAG)	A		10,900			10,900		U
116	Meteorological Equipment	A		21,137			21,137		U
117	DCRS/DPL	A		660			660		U
118	Airborne Mine Countermeasures	A		20,605			20,605		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 2016 Base + OCO Quantity Cost	FY 2017 PB Request with CR Adj Base Quantity Cost	FY 2017 Total PB Requests* with CR Adj Base Quantity Cost	S e c
----	-----	-----	-----	-----	-----	----
119	Aviation Support Equipment	A	48,773	39,099	39,099	U
	Total Aviation Support Equipment		419,644	439,109	439,109	
Budget Activity 04: Ordnance Support Equipment						
-----						
Ship Gun System Equipment						
120	Ship Gun Systems Equipment	A	5,300	6,191	6,191	U
Ship Missile Systems Equipment						
121	Ship Missile Support Equipment	A	276,503	320,446	320,446	U
122	Tomahawk Support Equipment	A	71,245	71,046	95,546	U
FBM Support Equipment						
123	Strategic Missile Systems Equip	A	240,677	215,138	215,138	U
ASW Support Equipment						
124	SSN Combat Control Systems	A	96,040	130,715	144,715	U
125	ASW Support Equipment	A	30,189	26,431	36,431	U
Other Ordnance Support Equipment						
126	Explosive Ordnance Disposal Equip	B	22,623	11,821	11,821	U
127	Items Less Than \$5 Million	A	9,906	6,243	6,243	U
Other Expendable Ordnance						
128	Submarine Training Device Mods	A		48,020	48,020	U
129	Training Device Mods	A	99,707			U

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Line No	Item Nomenclature	Ident Code	FY 2017 PB Request with CR Adj OCO		FY 2017 Total PB Requests* with CR Adj OCO		FY 2017 Less Enacted Div B P.L.114-254** OCO		FY 2017 Remaining Req with CR Adj OCO		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	
119	Aviation Support Equipment	A									U
	Total Aviation Support Equipment										
	Budget Activity 04: Ordnance Support Equipment										
	Ship Gun System Equipment										
120	Ship Gun Systems Equipment	A									U
	Ship Missile Systems Equipment										
121	Ship Missile Support Equipment	A									U
122	Tomahawk Support Equipment	A									U
	FBM Support Equipment										
123	Strategic Missile Systems Equip	A									U
	ASW Support Equipment										
124	SSN Combat Control Systems	A									U
125	ASW Support Equipment	A									U
	Other Ordnance Support Equipment										
126	Explosive Ordnance Disposal Equip	B		99,329		104,829				104,829	U
127	Items Less Than \$5 Million	A									U
	Other Expendable Ordnance										
128	Submarine Training Device Mods	A									U
129	Training Device Mods	A									U

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Line No	Item Nomenclature	Ident Code	FY 2017 Total PB Requests** with CR Adj Base+OCO+SAA Quantity	Cost	FY 2017 Total PB Requests* with CR Adj Base + OCO Quantity	Cost	FY 2017 Less Enacted Div B P.L.114-254** OCO Quantity	Cost	FY 2017 Remaining Req with CR Adj Base + OCO Quantity	Cost	S e c
119	Aviation Support Equipment	A	39,099		39,099				39,099		U
	Total Aviation Support Equipment		439,109		439,109				439,109		
Budget Activity 04: Ordnance Support Equipment											
Ship Gun System Equipment											
120	Ship Gun Systems Equipment	A	6,191		6,191				6,191		U
Ship Missile Systems Equipment											
121	Ship Missile Support Equipment	A	320,446		320,446				320,446		U
122	Tomahawk Support Equipment	A	71,046		95,546				95,546		U
FBM Support Equipment											
123	Strategic Missile Systems Equip	A	215,138		215,138				215,138		U
ASW Support Equipment											
124	SSN Combat Control Systems	A	130,715		144,715				144,715		U
125	ASW Support Equipment	A	26,431		36,431				36,431		U
Other Ordnance Support Equipment											
126	Explosive Ordnance Disposal Equip	B	111,150		116,650				116,650		U
127	Items Less Than \$5 Million	A	6,243		6,243				6,243		U
Other Expendable Ordnance											
128	Submarine Training Device Mods	A	48,020		48,020				48,020		U
129	Training Device Mods	A									U

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Total Obligational Authority  
(Dollars in Thousands)

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Line No	Item Nomenclature	Ident Code	FY 2018 Base		FY 2018 OCO		FY 2018 Total		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	
----	-----	-----	-----	-----	-----	-----	-----	-----	-----
119	Aviation Support Equipment	A		34,032		29,245		63,277	U
				-----		-----		-----	
	Total Aviation Support Equipment			441,542		29,245		470,787	
Budget Activity 04: Ordnance Support Equipment									
-----									
Ship Gun System Equipment									
120	Ship Gun Systems Equipment	A		5,277				5,277	U
Ship Missile Systems Equipment									
121	Ship Missile Support Equipment	A		272,359		2,436		274,795	U
122	Tomahawk Support Equipment	A		73,184				73,184	U
FBM Support Equipment									
123	Strategic Missile Systems Equip	A		246,221				246,221	U
ASW Support Equipment									
124	SSN Combat Control Systems	A		129,972				129,972	U
125	ASW Support Equipment	A		23,209				23,209	U
Other Ordnance Support Equipment									
126	Explosive Ordnance Disposal Equip	B		15,596		31,970		47,566	U
127	Items Less Than \$5 Million	A		5,981				5,981	U
Other Expendable Ordnance									
128	Submarine Training Device Mods	A		74,550				74,550	U
129	Training Device Mods	A							U

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Line No	Item Nomenclature	Ident Code	FY 2016 Base + OCO		FY 2017 PB Request with CR Adj Base		FY 2017 Total PB Requests* with CR Adj Base		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	
130	Surface Training Equipment	A			97,514		97,514		U
	Total Ordnance Support Equipment			852,190	933,565		982,065		
Budget Activity 05: Civil Engineering Support Equip									
-----									
Civil Engineering Support Equipment									
131	Passenger Carrying Vehicles	A		2,438	8,853		8,853		U
132	General Purpose Trucks	A		2,493	4,928		4,928		U
133	Construction & Maintenance Equip	A		2,578	18,527		18,527		U
134	Fire Fighting Equipment	A		14,705	13,569		13,569		U
135	Tactical Vehicles	B		2,898	14,917		14,917		U
136	Amphibious Equipment	A		12,517	7,676		7,676		U
137	Pollution Control Equipment	A		3,018	2,321		2,321		U
138	Items Under \$5 Million	A		13,838	12,459		12,459		U
139	Physical Security Vehicles	A		1,186	1,095		1,095		U
	Total Civil Engineering Support Equip			55,671	84,345		84,345		
Budget Activity 06: Supply Support Equipment									
-----									
Supply Support Equipment									
140	Materials Handling Equipment	A		19,211					U
141	Supply Equipment	A			16,023		16,023		U
142	Other Supply Support Equipment	A		10,469					U

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(Dollars in Thousands)

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Line No	Item Nomenclature	Ident Code	FY 2017 PB Request with CR Adj OCO		FY 2017 Total PB Requests* with CR Adj OCO		FY 2017 Less Enacted Div B P.L.114-254** OCO		FY 2017 Remaining Req with CR Adj OCO		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	
130	Surface Training Equipment	A									U
	Total Ordnance Support Equipment			99,329		104,829				104,829	
Budget Activity 05: Civil Engineering Support Equip											
Civil Engineering Support Equipment											
131	Passenger Carrying Vehicles	A									U
132	General Purpose Trucks	A									U
133	Construction & Maintenance Equip	A									U
134	Fire Fighting Equipment	A		630		630				630	U
135	Tactical Vehicles	B									U
136	Amphibious Equipment	A									U
137	Pollution Control Equipment	A									U
138	Items Under \$5 Million	A									U
139	Physical Security Vehicles	A									U
	Total Civil Engineering Support Equip			630		630				630	
Budget Activity 06: Supply Support Equipment											
Supply Support Equipment											
140	Materials Handling Equipment	A									U
141	Supply Equipment	A									U
142	Other Supply Support Equipment	A									U

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Line No	Item Nomenclature	Ident Code	FY 2017 Total PB Requests** with CR Adj Base+OCO+SAA Quantity Cost	FY 2017 Total PB Requests* with CR Adj Base + OCO Quantity Cost	FY 2017 Less Enacted Div B P.L.114-254** OCO Quantity Cost	FY 2017 Remaining Req with CR Adj Base + OCO Quantity Cost	S e c
130	Surface Training Equipment	A	97,514	97,514		97,514	U
Total Ordnance Support Equipment			1,032,894	1,086,894		1,086,894	
Budget Activity 05: Civil Engineering Support Equip							
Civil Engineering Support Equipment							
131	Passenger Carrying Vehicles	A	8,853	8,853		8,853	U
132	General Purpose Trucks	A	4,928	4,928		4,928	U
133	Construction & Maintenance Equip	A	18,527	18,527		18,527	U
134	Fire Fighting Equipment	A	14,199	14,199		14,199	U
135	Tactical Vehicles	B	14,917	14,917		14,917	U
136	Amphibious Equipment	A	7,676	7,676		7,676	U
137	Pollution Control Equipment	A	2,321	2,321		2,321	U
138	Items Under \$5 Million	A	12,459	12,459		12,459	U
139	Physical Security Vehicles	A	1,095	1,095		1,095	U
Total Civil Engineering Support Equip			84,975	84,975		84,975	
Budget Activity 06: Supply Support Equipment							
Supply Support Equipment							
140	Materials Handling Equipment	A					U
141	Supply Equipment	A	16,023	16,023		16,023	U
142	Other Supply Support Equipment	A					U

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 (Dollars in Thousands)

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Line No	Item Nomenclature	Ident Code	FY 2018 Base		FY 2018 OCO		FY 2018 Total		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	
130	Surface Training Equipment	A		83,022				83,022	U
	Total Ordnance Support Equipment			929,371		34,406		963,777	
Budget Activity 05: Civil Engineering Support Equip									
Civil Engineering Support Equipment									
131	Passenger Carrying Vehicles	A		5,299				5,299	U
132	General Purpose Trucks	A		2,946		496		3,442	U
133	Construction & Maintenance Equip	A		34,970				34,970	U
134	Fire Fighting Equipment	A		2,541		2,304		4,845	U
135	Tactical Vehicles	B		19,699		2,336		22,035	U
136	Amphibious Equipment	A		12,162				12,162	U
137	Pollution Control Equipment	A		2,748				2,748	U
138	Items Under \$5 Million	A		18,084				18,084	U
139	Physical Security Vehicles	A		1,170				1,170	U
	Total Civil Engineering Support Equip			99,619		5,136		104,755	
Budget Activity 06: Supply Support Equipment									
Supply Support Equipment									
140	Materials Handling Equipment	A							U
141	Supply Equipment	A		21,797		164		21,961	U
142	Other Supply Support Equipment	A							U

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(Dollars in Thousands)

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Line No	Item Nomenclature	Ident Code	FY 2016 Base + OCO Quantity Cost	FY 2017 PB Request with CR Adj Base Quantity Cost	FY 2017 Total PB Requests* with CR Adj Base Quantity Cost	S e c
----	-----	-----	-----	-----	-----	----
143	First Destination Transportation	A	5,908	5,115	5,115	U
144	Special Purpose Supply Systems	A	211,714	295,471	295,471	U
	Total Supply Support Equipment		247,302	316,609	316,609	
Budget Activity 07: Personnel & Command Support Equip						
-----						
Training Devices						
145	Training Support Equipment	A	7,468			U
146	Training and Education Equipment	A		9,504	9,504	U
Command Support Equipment						
147	Command Support Equipment	A	29,745	37,180	44,680	U
148	Education Support Equipment	A	3,180			U
149	Medical Support Equipment	A	32,790	4,128	4,128	U
151	Naval MIP Support Equipment	A	4,608	1,925	1,925	U
152	Operating Forces Support Equipment	A	6,607	4,777	21,033	U
153	C4ISR Equipment	A	9,929	9,073	9,073	U
154	Environmental Support Equipment	A	23,009	21,107	21,107	U
155	Physical Security Equipment	A	93,478	100,906	110,203	U
156	Enterprise Information Technology	A	95,094	67,544	67,544	U
Other						
159	Cancelled Account Adjustments	A	17			U

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Department of the Navy  
FY 2018 President's Budget Request  
Exhibit P-1 FY 2018 President's Budget Request  
Total Obligational Authority  
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 PB Request with CR Adj OCO Quantity	Cost	FY 2017 Total PB Requests* with CR Adj OCO Quantity	Cost	FY 2017 Less Enacted Div B P.L.114-254** OCO Quantity	Cost	FY 2017 Remaining Req with CR Adj OCO Quantity	Cost	S e c
----	-----	-----	-----	----	-----	----	-----	----	-----	----	-
143	First Destination Transportation	A		25		25				25	U
144	Special Purpose Supply Systems	A									U
				-----		-----		-----		-----	
	Total Supply Support Equipment			25		25				25	
Budget Activity 07: Personnel & Command Support Equip -----											
Training Devices											
145	Training Support Equipment	A									U
146	Training and Education Equipment	A									U
Command Support Equipment											
147	Command Support Equipment	A		10,562		10,562				10,562	U
148	Education Support Equipment	A									U
149	Medical Support Equipment	A				5,000				5,000	U
151	Naval MIP Support Equipment	A									U
152	Operating Forces Support Equipment	A									U
153	C4ISR Equipment	A									U
154	Environmental Support Equipment	A									U
155	Physical Security Equipment	A									U
156	Enterprise Information Technology	A									U
Other											
159	Cancelled Account Adjustments	A									U

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Department of the Navy  
FY 2018 President's Budget Request  
Exhibit P-1 FY 2018 President's Budget Request  
Total Obligational Authority  
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 Total PB Requests** with CR Adj Base+OCO+SAA		FY 2017 Total PB Requests* with CR Adj Base + OCO		FY 2017 Less Enacted Div B P.L.114-254** OCO		FY 2017 Remaining Req with CR Adj Base + OCO		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	
143	First Destination Transportation	A		5,140		5,140				5,140	U
144	Special Purpose Supply Systems	A		295,471		295,471				295,471	U
	Total Supply Support Equipment			316,634		316,634				316,634	
Budget Activity 07: Personnel & Command Support Equip											
Training Devices											
145	Training Support Equipment	A									U
146	Training and Education Equipment	A		9,504		9,504				9,504	U
Command Support Equipment											
147	Command Support Equipment	A		47,742		55,242				55,242	U
148	Education Support Equipment	A									U
149	Medical Support Equipment	A		4,128		9,128				9,128	U
151	Naval MIP Support Equipment	A		1,925		1,925				1,925	U
152	Operating Forces Support Equipment	A		4,777		21,033				21,033	U
153	C4ISR Equipment	A		9,073		9,073				9,073	U
154	Environmental Support Equipment	A		21,107		21,107				21,107	U
155	Physical Security Equipment	A		100,906		110,203				110,203	U
156	Enterprise Information Technology	A		67,544		67,544				67,544	U
Other											
159	Cancelled Account Adjustments	A									U

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Department of the Navy  
FY 2018 President's Budget Request  
Exhibit P-1 FY 2018 President's Budget Request  
Total Obligational Authority  
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Base		FY 2018 OCO		FY 2018 Total		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	
143	First Destination Transportation	A		5,572		420		5,992	U
144	Special Purpose Supply Systems	A		482,916				482,916	U
	Total Supply Support Equipment			510,285		584		510,869	
Budget Activity 07: Personnel & Command Support Equip									
-----									
Training Devices									
145	Training Support Equipment	A							U
146	Training and Education Equipment	A		25,624				25,624	U
Command Support Equipment									
147	Command Support Equipment	A		59,076		21,650		80,726	U
148	Education Support Equipment	A							U
149	Medical Support Equipment	A		4,383				4,383	U
151	Naval MIP Support Equipment	A		2,030				2,030	U
152	Operating Forces Support Equipment	A		7,500		15,800		23,300	U
153	C4ISR Equipment	A		4,010				4,010	U
154	Environmental Support Equipment	A		23,644		1,000		24,644	U
155	Physical Security Equipment	A		101,982		15,890		117,872	U
156	Enterprise Information Technology	A		19,789				19,789	U
Other									
159	Cancelled Account Adjustments	A							U

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Department of the Navy  
 FY 2018 President's Budget Request  
 Exhibit P-1 FY 2018 President's Budget Request  
 Total Obligational Authority  
 (Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2016 Base + OCO Quantity Cost	FY 2017 PB Request with CR Adj Base Quantity Cost	FY 2017 Total PB Requests* with CR Adj Base Quantity Cost	S e c
----	-----	-----	-----	-----	-----	----
160	Next Generation Enterprise Service	A	104,642	98,216	98,216	U
999	Classified Programs		33,439	9,915	14,765	U
			-----	-----	-----	
	Total Personnel & Command Support Equip		444,006	364,275	402,178	
Budget Activity 08: Spares and Repair Parts						
-----						
Spares and Repair Parts						
161	Spares and Repair Parts	A	276,333	199,660	199,660	U
			-----	-----	-----	
	Total Spares and Repair Parts		276,333	199,660	199,660	
Budget Activity 20: Undistributed						
-----						
Undistributed						
162	Adj to Match Continuing Resolution	A		133,069	133,069	U
			-----	-----	-----	
	Total Undistributed			133,069	133,069	
			-----	-----	-----	
	Total Other Procurement, Navy		6,585,466	6,471,930	6,689,919	

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Department of the Navy  
FY 2018 President's Budget Request  
Exhibit P-1 FY 2018 President's Budget Request  
Total Obligational Authority  
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 PB Request with CR Adj OCO		FY 2017 Total PB Requests* with CR Adj OCO		FY 2017 Less Enacted Div B P.L.114-254** OCO		FY 2017 Remaining Req with CR Adj OCO		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	
160	Next Generation Enterprise Service	A									U
999	Classified Programs			1,660		1,660				1,660	U
				-----		-----		-----		-----	
	Total Personnel & Command Support Equip			12,222		17,222				17,222	
Budget Activity 08: Spares and Repair Parts											
-----											
Spares and Repair Parts											
161	Spares and Repair Parts	A									U
				-----		-----		-----		-----	
	Total Spares and Repair Parts										
Budget Activity 20: Undistributed											
-----											
Undistributed											
162	Adj to Match Continuing Resolution	A		-112,020		-112,020				-112,020	U
				-----		-----		-----		-----	
	Total Undistributed			-112,020		-112,020				-112,020	
				-----		-----		-----		-----	
	Total Other Procurement, Navy			12,186		22,686				22,686	

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Department of the Navy  
FY 2018 President's Budget Request  
Exhibit P-1 FY 2018 President's Budget Request  
Total Obligational Authority  
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 Total PB Requests** with CR Adj Base+OCO+SAA Quantity Cost	FY 2017 Total PB Requests* with CR Adj Base + OCO Quantity Cost	FY 2017 Less Enacted Div B P.L.114-254** OCO Quantity Cost	FY 2017 Remaining Req with CR Adj Base + OCO Quantity Cost	S e c
160	Next Generation Enterprise Service	A	98,216	98,216		98,216	U
999	Classified Programs		11,575	16,425		16,425	U
	Total Personnel & Command Support Equip		376,497	419,400		419,400	
Budget Activity 08: Spares and Repair Parts							
-----							
Spares and Repair Parts							
161	Spares and Repair Parts	A	199,660	199,660		199,660	U
	Total Spares and Repair Parts		199,660	199,660		199,660	
Budget Activity 20: Undistributed							
-----							
Undistributed							
162	Adj to Match Continuing Resolution	A	21,049	21,049		21,049	U
	Total Undistributed		21,049	21,049		21,049	
	Total Other Procurement, Navy		6,484,116	6,712,605		6,712,605	

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Department of the Navy  
FY 2018 President's Budget Request  
Exhibit P-1 FY 2018 President's Budget Request  
Total Obligational Authority  
(Dollars in Thousands)

Appropriation: 1810N Other Procurement, Navy

Line		Ident	FY 2018		FY 2018		FY 2018		S
No	Item Nomenclature	Code	Base	Cost	OCO	Cost	Total	Cost	e
----	-----	-----	Quantity	-----	Quantity	-----	Quantity	-----	-----
160	Next Generation Enterprise Service	A		104,584				104,584	U
999	Classified Programs			23,707		2,200		25,907	U
				-----		-----		-----	
	Total Personnel & Command Support Equip			376,329		56,540		432,869	
	Budget Activity 08: Spares and Repair Parts								
	-----								
	Spares and Repair Parts								
161	Spares and Repair Parts	A		278,565		1,178		279,743	U
				-----		-----		-----	
	Total Spares and Repair Parts			278,565		1,178		279,743	
	Budget Activity 20: Undistributed								
	-----								
	Undistributed								
162	Adj to Match Continuing Resolution	A		-----		-----		-----	U
				-----		-----		-----	
	Total Undistributed			-----		-----		-----	
	Total Other Procurement, Navy			8,277,789		220,059		8,497,848	

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4	01	01	0140	Hybrid Electric Drive (HED).....	Volume 1 - 17
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8	01	09	0840	Sub Periscope, Imaging and Supt Equip Prog.....	Volume 1 - 57
9	01	09	0900	DDG Mod.....	Volume 1 - 83
10	01	09	0910	Firefighting Equipment.....	Volume 1 - 133
11	01	09	0925	Command and Control Switchboard.....	Volume 1 - 135
12	01	09	0933	LHA/LHD Midlife.....	Volume 1 - 137
13	01	09	0934	LCC 19/20 Extended Service Life Program.....	Volume 1 - 151
14	01	09	0935	Pollution Control Equipment.....	Volume 1 - 153
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18	01	09	0945	Submarine Batteries.....	Volume 1 - 187
19	01	09	0946	LPD Class Support Equipment.....	Volume 1 - 189
20	01	09	0947	DDG 1000 Class Support Equipment.....	Volume 1 - 207
21	01	09	0950	Strategic Platform Support Equip.....	Volume 1 - 209
22	01	09	0955	Deep Subm Sys Proj (DSSP) Equip.....	Volume 1 - 211
23	01	09	0960	CG Modernization.....	Volume 1 - 213
24	01	09	0970	LCAC.....	Volume 1 - 237
25	01	09	0977	Underwater EOD Programs.....	Volume 1 - 239
26	01	09	0981	Items less than \$5 Million.....	Volume 1 - 253
27	01	09	0989	Chemical Warfare Detectors.....	Volume 1 - 279
28	01	09	0990	Submarine Life Support System.....	Volume 1 - 281
29	01	10	1010	Reactor Power Units.....	Volume 1 - 283
30	01	10	1020	Reactor Components.....	Volume 1 - 287
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40	01	15	1604	LCS In-Service Modernization.....	Volume 1 - 359
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53	02	03	2246	Maritime Patrol and Reconnaissance Force.....	Volume 2 - 103
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60	02	07	2611	Naval Tact Cmd Supt Sys (NTCSS).....	Volume 2 - 171
61	02	07	2614	Adv Tact Data Link Sys (ATDLS).....	Volume 2 - 173
62	02	07	2618	Navy Command and Control System (NCCS).....	Volume 2 - 187
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70	02	09	2820	Ashore ATC Equipment.....	Volume 2 - 213
71	02	09	2830	Afloat ATC Equipment.....	Volume 2 - 237
72	02	09	2831	Shipboard Air Traffic Control.....	Volume 2 - 253
73	02	09	2832	Automatic Carrier Landing System.....	Volume 2 - 255
74	02	09	2840	National Air Space System.....	Volume 2 - 257
75	02	09	2845	Fleet Air Traffic Control Systems.....	Volume 2 - 259
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77	02	09	2851	ID Systems.....	Volume 2 - 263
78	02	09	2876	Naval Mission Planning Systems.....	Volume 2 - 275
79	02	10	2804	Depl JT Cmd & Control (DJC2).....	Volume 2 - 277
80	02	10	2906	Tactical/Mobile C4I Systems.....	Volume 2 - 279
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89	02	10	2980	Items less than \$5 Million.....	Volume 2 - 331
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152	07	02	8118	Operating Forces Supt Equip.....	Volume 5 - 83
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Afloat ATC Equipment	2830	71	02	09.....	Volume 2 - 237
Aircraft Support Equipment	4213	114	03	03.....	Volume 3 - 23
Allison 501K Gas Turbine	0120	2	01	01.....	Volume 1 - 5
American Forces Radio and TV Service (AFRTS)	2666	66	02	07.....	Volume 2 - 205
Amphibious Equipment	6033	136	05	01.....	Volume 5 - 19
Ashore ATC Equipment	2820	70	02	09.....	Volume 2 - 213
Automatic Carrier Landing System	2832	73	02	09.....	Volume 2 - 255
Automatic Identification System (AIS)	2361	56	02	05.....	Volume 2 - 151
Aviation Mine Countermeasures	4248	118	03	03.....	Volume 3 - 63
Aviation Support Equipment	4268	119	03	03.....	Volume 3 - 73
C4ISR Equipment	8120	153	07	02.....	Volume 5 - 89
CANES	2915	82	02	10.....	Volume 2 - 299

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CG Modernization	0960	23	01	09.....	Volume 1 - 213
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Chemical Warfare Detectors	0989	27	01	09.....	Volume 1 - 279
Coast Guard Equipment	3620	110	02	17.....	Volume 2 - 473
Command Support Equipment	8106	147	07	02.....	Volume 5 - 59
Command and Control Switchboard	0925	11	01	09.....	Volume 1 - 135
Communications Items under \$5M	3057	92	02	11.....	Volume 2 - 379
Construction & Maint Equip	6024	133	05	01.....	Volume 5 - 5
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DCRS/DPL	4242	117	03	03.....	Volume 3 - 61
DDG 1000 Class Support Equipment	0947	20	01	09.....	Volume 1 - 207
DDG Mod	0900	9	01	09.....	Volume 1 - 83
Deep Subm Sys Proj (DSSP) Equip	0955	22	01	09.....	Volume 1 - 211
Depl JT Cmd & Control (DJC2)	2804	79	02	10.....	Volume 2 - 277
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EMI Control Instrumentation	2970	88	02	10.....	Volume 2 - 329
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Explosive Ordnance Disposal Equip	5509	126	04	06.....	Volume 4 - 79
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First Destination Transportation	7066	143	06	01.....	Volume 5 - 39
Fixed Surveillance System	2225	51	02	03.....	Volume 2 - 85
Fleet Air Traffic Control Systems	2845	75	02	09.....	Volume 2 - 259
Gen Purp Elec Test Equip (GPETE)	2940	85	02	10.....	Volume 2 - 323
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Hybrid Electric Drive (HED)	0140	4	01	01.....	Volume 1 - 17
ID Systems	2851	77	02	09.....	Volume 2 - 263
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Joint Communications Support Element (JCSE)	3302	97	02	14.....	Volume 2 - 437

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LCS ASW Mission Modules	1602	38	01	15.....	Volume 1 - 353
LCS Class Support Equipment	0944	17	01	09.....	Volume 1 - 181
LCS Common Mission Modules Equipment	1600	36	01	15.....	Volume 1 - 333
LCS In-Service Modernization	1604	40	01	15.....	Volume 1 - 359
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LHA/LHD Midlife	0933	12	01	09.....	Volume 1 - 137
LM-2500 Gas Turbine	0110	1	01	01.....	Volume 1 - 1
LPD Class Support Equipment	0946	19	01	09.....	Volume 1 - 189
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Landing Systems	2846	76	02	09.....	Volume 2 - 261
MATCALs	2815	69	02	09.....	Volume 2 - 211
MIO Intel Exploitation Team	3417	100	02	15.....	Volume 2 - 467
Maritime Patrol and Reconnaissance Force	2246	53	02	03.....	Volume 2 - 103
Materials Handling Equipment	7015	140	06	01.....	Volume 5 - 27
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Meteorological Equipment	4226	116	03	03.....	Volume 3 - 55
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National Air Space System	2840	74	02	09.....	Volume 2 - 257
Naval MIP Support Equipment	8114	151	07	02.....	Volume 5 - 81
Naval Mission Planning Systems	2876	78	02	09.....	Volume 2 - 275
Naval Tact Cmd Supt Sys (NTCSS)	2611	60	02	07.....	Volume 2 - 171
Navy Command and Control System (NCCS)	2618	62	02	07.....	Volume 2 - 187
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Network Tactical Common Data Link (CDL)	2950	86	02	10.....	Volume 2 - 325
Next Generation Enterprise Service	8164	160	07	05.....	Volume 5 - 115
Nuclear Alterations	1480	35	01	15.....	Volume 1 - 331
Operating Forces IPE	1445	34	01	14.....	Volume 1 - 309
Operating Forces Supt Equip	8118	152	07	02.....	Volume 5 - 83
Other Navigation Equipment	0670	6	01	06.....	Volume 1 - 29
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Other Supply Support Equipment	7050	142	06	01.....	Volume 5 - 37
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Passenger Carrying Vehicles	6003	131	05	01.....	Volume 5 - 1
Physical Security Equipment	8128	155	07	02.....	Volume 5 - 103
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Reactor Power Units	1010	29	01	10.....	Volume 1 - 283
Remote Minehunting System (RMS)	1605	41	01	15.....	Volume 1 - 363
SPQ-9B Radar	2026	43	02	02.....	Volume 2 - 1
SSN Acoustic Equipment	2150	46	02	02.....	Volume 2 - 37
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SSN Combat Control Systems	5420	124	04	05.....	Volume 4 - 51
SURTASS	2237	52	02	03.....	Volume 2 - 89
Satellite Communications Systems	3215	95	02	13.....	Volume 2 - 419
Shallow Water Mine CM Ship	2624	64	02	07.....	Volume 2 - 201
Ship Communications Automation	3050	91	02	11.....	Volume 2 - 359
Ship Gun Systems Equipment	5111	120	04	02.....	Volume 4 - 1
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Shipboard Air Traffic Control	2831	72	02	09.....	Volume 2 - 253
Shipboard IW Exploit	2360	55	02	05.....	Volume 2 - 127
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Strategic Platform Support Equip	2676	67	02	07.....	Volume 2 - 207
Sub Periscope, Imaging and Supt Equip Prog	0840	8	01	09.....	Volume 1 - 57
Sub Periscopes & Imaging Equip	0831	7	01	08.....	Volume 1 - 55
Submarine Acoustic Warfare System	2210	49	02	03.....	Volume 2 - 69
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Submarine Broadcast Support	3107	93	02	12.....	Volume 2 - 381
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Submarine Life Support System	0990	28	01	09.....	Volume 1 - 281
Submarine Support Equipment	0941	15	01	09.....	Volume 1 - 157
Submarine Supt Equip Prog	2560	57	02	06.....	Volume 2 - 153
Submarine Training Device Mods	5661	128	04	07.....	Volume 4 - 93
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Surface Power Equipment	0131	3	01	01.....	Volume 1 - 7
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Tactical/Mobile C4I Systems	2906	80	02	10.....	Volume 2 - 279
Tomahawk Support Equipment	5253	122	04	03.....	Volume 4 - 31
Training Device Mods	5662	129	04	07.....	Volume 4 - 103
Training Support Equipment	8081	145	07	01.....	Volume 5 - 45
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Trusted Information System (TIS)	2608	59	02	07.....	Volume 2 - 169
Undersea Warfare Support Equipment	2176	47	02	02.....	Volume 2 - 63
Underwater EOD Programs	0977	25	01	09.....	Volume 1 - 239
Virginia Class Support Equipment	0942	16	01	09.....	Volume 1 - 171
Weapons Range Support Equipment	4204	113	03	03.....	Volume 3 - 13

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy										<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars							<b>P-1 Line Item Number / Title:</b> 2026 / SPQ-9B Radar					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A				<b>Program Elements for Code B Items:</b> N/A				<b>Other Related Program Elements:</b> N/A				
<b>Line Item MDAP/MAIS Code:</b> N/A												
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>To Complete</b>	<b>Total</b>
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	171.723	19.841	14.363	30.086	0.000	30.086	23.823	29.708	28.364	28.930	752.443	1,099.281
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	171.723	19.841	14.363	30.086	0.000	30.086	23.823	29.708	28.364	28.930	752.443	1,099.281
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>171.723</b>	<b>19.841</b>	<b>14.363</b>	<b>30.086</b>	<b>0.000</b>	<b>30.086</b>	<b>23.823</b>	<b>29.708</b>	<b>28.364</b>	<b>28.930</b>	<b>752.443</b>	<b>1,099.281</b>
<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> )	-	0.503	0.550	0.287	-	0.287	1.026	1.012	0.156	0.138	Continuing	Continuing
Flyaway Unit Cost ( <i>\$ in Dollars</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ( <i>\$ in Dollars</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<p><b>Description:</b></p> <p>This program provides for procurement of AN/SPQ-9B Radars whose primary mission is to detect and track low flying Anti-Ship Missile targets in heavy clutter. The mission of the AN/SPQ-9B has been expanded to include the capability to detect and classify periscopes. The Periscope Detection and Discrimination (PDD) capability has been designed and incorporated to operate concurrently with the Anti-Ship Missile Defense (ASMD) capability.</p> <p>[BR5IN AN/SPQ-9B FMP INSTALLATIONS]: Provided funding to install AN/SPQ-9B Radar systems. AN/SPQ-9B systems are installed using Alteration Installation Teams (AITs) that require Planning Yard Design Services Allocation (DSA) funds one (1) and two (2) years prior to installation. Advanced Planning (AP) is required one (1) year prior to installation.</p> <p>[BR6IN AN/SPQ-9B NON FMP INSTALLATIONS]: Provided funding for the installation of equipment for Land Based Test Sites (LBTS).</p> <p>[P40A / BR040 TRANSMITTER UPGRADE FMP]: Funding was provided for installations of AN/SPQ-9B Transmitter Upgrades on LPD-17.</p> <p>[P40A / BR040 TRANSMITTER UPGRADE NON-FMP EQUIPMENT]: Funding provided for Transmitter Upgrade Processor installations at Surface Warfare Engineering Facility (SWEF) and Combat Systems Engineering Development Site (CSEDS) (both non-FMP).</p> <p>[P40A / BR042 AN/SPQ-9B ENGINEERING CHANGE PROPOSALS (ECP)]: Procures product improvements generated by Engineering Change Proposals (ECPs); corrects problems reported by Fleet units; upgrades unreliable components and replaces obsolete components and parts no longer in production for AN/SPQ-9B Radar; and addresses supportability concerns. Purchases and installs ECPs, including Antenna Shock Upgrade Kits, Antenna Radar Components, Digital Signal Processor (DSP) Kits, Periscope Detection and Discrimination (PDD) Kits and engineering change kit hardware components. Antenna Shock Upgrade Kits are installed during Antenna Restorations. DSP and PDD kits are installed conjunctively via Alteration Installation Team (AIT) and can be accomplished outside of a CNO Availability.</p> <p>[P40A / BR830 AN/SPQ-9B PRODUCTION SUPPORT]: Provides support for production of hardware and hardware components and is composed primarily of Warfare Center Activity support, Software Support Activity (SSA), Integrated Logistics Agent (ILA), Acquisition Engineering Agent (AEA), Technical Design Agent (TDA) and Professional Support Services (PSS). Also includes support for cybersecurity compliance and software certification.</p>												

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars		<b>P-1 Line Item Number / Title:</b> 2026 / SPQ-9B Radar
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A	<b>Program Elements for Code B Items:</b> N/A	<b>Other Related Program Elements:</b> N/A
<b>Line Item MDAP/MAIS Code:</b> N/A  [P3A / BR040 AN/SPQ-9B RADAR FMP EQUIPMENT]: Procures AN/SPQ-9B Radars to add Anti-Ship Missile Defense (ASMD) capability to Shipboard Combat Systems. Procures radars to support combat systems on the following ship classes: CG, LHA, DDG, CVN, LHD, LPD, U.S. Coast Guard National Security Cutter and a Training Unit. Systems procured for Cruisers/Destroyers (CRUDES) and Amphibious Ships in FY14 and beyond will also include the Periscope Detection and Discrimination (PDD) capability.		

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy								Date: May 2017		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars					P-1 Line Item Number / Title: 2026 / SPQ-9B Radar					
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A										
Exhibits Schedule					Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	SPQ-9B Radar				- / 112.390	- / 14.038	- / 5.062	- / 6.963	- / -	- / 6.963
P-3a	1 / BR040 AN/SPQ-9B RADAR FMP EQUIPMENT (TBD)				- / 59.333	- / 5.803	- / 9.301	- / 23.123	- / 0.000	- / 23.123
P-40	Total Gross/Weapon System Cost				- / 171.723	- / 19.841	- / 14.363	- / 30.086	- / 0.000	- / 30.086
*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: FY 2018 Navy															Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2								P-1 Line Item Number / Title: 2026 / SPQ-9B Radar							Aggregated Items Title: SPQ-9B Radar					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
1) BR040 AN/SPQ-9B RADAR																				
1.1) BR040 ANTENNA	A		2,529K	7	17.701	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.2) BR040 ANTENNA TEST STAND	A		1,025K	1	1.025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.3) BR040 TRANSMITTER UPGRADE FMP	A		-	-	12.961	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.4) BR040 TRANSMITTER UPGRADE NON-FMP EQUIPMENT	A		-	-	2.958	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) BR040 AN/SPQ-9B RADAR			-	-	34.645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2) BR042 AN/SPQ-9B ENGINEERING CHANGE PROPOSALS (ECP)																				
2.1) BR042 MISCELLANEOUS ECPs <sup>(1)</sup>	A		-	-	21.264	-	-	5.341	-	-	3.034	-	-	2.777	-	-	-	-	-	2.777
2.2) BR042 ANTENNA SHOCK UPGRADE KITS	A		527,428.57	7	3.692	637,000.00	2	1.274	-	-	-	-	-	-	-	-	-	-	-	-
2.3) BR042 DIGITAL SIGNAL PROCESSOR KITS - PROCUREMENTS	A		315,400.00	10	3.154	254,500.00	2	0.509	-	-	-	264,500.00	2	0.529	-	-	-	264,500.00	2	0.529
2.4) BR042 DIGITAL SIGNAL PROCESSOR KITS - INSTALLS	A		56,000.00	5	0.280	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.5) BR042 PDD KITS - PROCUREMENT	A		730,928.57	14	10.233	785,666.67	6	4.714	-	-	-	819,500.00	2	1.639	-	-	-	819,500.00	2	1.639
2.6) BR042 PDD KITS - INSTALLS <sup>(2)</sup>	A		240,000.00	9	2.160	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 2) BR042 AN/SPQ-9B ENGINEERING CHANGE PROPOSALS (ECP)			-	-	40.783	-	-	11.838	-	-	3.034	-	-	4.945	-	-	-	-	-	4.945
3) BR830 AN/SPQ-9B PRODUCTION SUPPORT																				
3.1) BR830 AN/SPQ-9B PRODUCTION SUPPORT <sup>(3)</sup>	A		-	-	15.335	-	-	2.200	-	-	2.028	-	-	2.018	-	-	-	-	-	2.018
Subtotal: 3) BR830 AN/SPQ-9B PRODUCTION SUPPORT			-	-	15.335	-	-	2.200	-	-	2.028	-	-	2.018	-	-	-	-	-	2.018
4) BRCA1 AN/SPQ-9B RADAR COMPONENTS																				



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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy															Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2							P-1 Line Item Number / Title: 2026 / SPQ-9B Radar								Aggregated Items Title: SPQ-9B Radar					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
4.1) BRCA1 AN/SPQ-9B RADAR COMPONENTS	A		7,400K	2	14.800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 4) BRCA1 AN/SPQ-9B RADAR COMPONENTS			-	-	14.800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5) BRCA2 AN/SPQ-9B RADAR COMPONENTS																				
5.1) BRCA2 AN/SPQ-9B RADAR COMPONENTS	A		6,800K	1	6.800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 5) BRCA2 AN/SPQ-9B RADAR COMPONENTS			-	-	6.800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6) WAXXX ACQUISITION WORKFORCE FUND																				
6.1) WAXXX ACQUISITION WORKFORCE FUND-2009	A		-	-	0.027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 6) WAXXX ACQUISITION WORKFORCE FUND			-	-	0.027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total			-	-	112.390	-	-	14.038	-	-	5.062	-	-	6.963	-	-	-	-	-	6.963

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

**Footnotes:**

- (1) Miscellaneous ECPs primarily funds product improvements, corrects problems reported by Fleet units, upgrades unreliable components, replaces obsolete components/parts no longer in production, and addresses supportability concerns. The increases in FY16 and FY17 are attributable to the development, verification, and certification of technology refresh 2014 (TR14) hardware components which address obsolete components and parts no longer in production. The increases in FY18 and FY19 are attributable to the analysis, verification, and certification of integration and software changes related to the implementation of Advanced Capability Build (ACB) 16 for the AEGIS combat system.
- (2) Digital Signal Processor (DSP) and Periscope Detection and Discrimination (PDD) Kits procured in FY16 will be installed starting in 2019 due to FY18 funding reductions.
- (3) AN/SPQ-9B Production Support provides support for production of hardware and production hardware components and is composed primarily of Warfare Center Activity support, Software Support Activity (SSA), Integrated Logistics Agent (ILA), Acquisition Engineering Agent (AEA), Technical Design Agent (TDA) and Professional Support Services (PSS). Also includes support for cybersecurity compliance packages in the enterprise mission assurance support service (eMASS), element, and combat system certifications.

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 2			<b>P-1 Line Item Number / Title:</b> 2026 / SPQ-9B Radar		<b>Modification Number / Title:</b> 1 / BR040 AN/SPQ-9B RADAR FMP EQUIPMENT	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	59.333	5.803	9.301	23.123	0.000	23.123
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	59.333	5.803	9.301	23.123	0.000	23.123
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>59.333</b>	<b>5.803</b>	<b>9.301</b>	<b>23.123</b>	<b>0.000</b>	<b>23.123</b>
<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> )	-	-	-	-	-	-
<p><b>Description:</b>            [BR040 AN/SPQ-9B RADAR FMP EQUIPMENT] Procures AN/SPQ-9B Radars to add Anti-Ship Missile Defense (ASMD) capability to Shipboard Combat Systems. Procures radars to support combat systems on the following ship classes: CG, LHA, DDG, CVN, LHD, LPD, U.S. Coast Guard National Security Cutter and a Training Unit. Systems procured for Cruisers/Destroyer(CRUDES) and Amphibious Ships in FY14 and beyond will also include the Periscope Detection and Discrimination (PDD) capability.</p> <p>Notes: BR040 AN/SPQ-9B RADAR FMP EQUIPMENT:</p> <p>1) The follow-on contract was awarded in December 2015. This contract includes a total of twelve (12) FY14, FY15 and FY16 funded SPQ-9B radars being procured across several appropriations (OPN, SCN, FMS). The first radar will be delivered 22 months after award. All follow-on radars will be delivered at a rate of one every other month. Due to delayed contract award, the unit procured with FY14 funds will replace a system previously procured under Cruiser Modernization for CG61 which was diverted to meet the installation schedule requirements for LHD 2 in FY16. The installation on LHD 2 was fully funded in FY14.</p> <p>2) The FY18 installations on the DDG 79, DDG 80 and LHD 6 were forward funded with surplus FY15 installation funds for Design Services Allocation (DSA)/Advance Planning (AP), and therefore no FY16 installation funds are required.</p> <p>3) SPQ-9B was moved from BLI 5110 to BLI 2026 in FY2004. Prior to 2004, the procurement of the first five (5) AN/SPQ-9B systems was funded under the Mk 86 program under BLI 5110. The installation costs for four (4) out of five (5) of these installs were included in the 2026 budget. This explains the difference of 81 installations and only 77 procurements in this budget (delta 4).</p>						

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 2		<b>P-1 Line Item Number / Title:</b> 2026 / SPQ-9B Radar			<b>Modification Number / Title:</b> 1 / BR040 AN/SPQ-9B RADAR FMP EQUIPMENT		
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>			
<b>Models of Systems Affected:</b> AN/SPQ-9B RADAR FMP EQUIPMENT		<b>Modification Type:</b> TBD			<b>Related RDT&amp;E PEs:</b> 0604501N		
<b>Financial Plan</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
<b>Procurement</b>							
<b>Modification Item 1 of 1:</b> BR040 AN/SPQ-9B RADAR FMP EQUIPMENT							
B Kits							
Recurring							
1.1.1) BR040 AN/SPQ-9B RADAR FMP EQUIPMENT - NonOrganic <sup>(4)</sup>		6 / 38.387	1 / 5.803	1 / 5.912	3 / 18.083	- / -	3 / 18.083
1.1.2) BR040 AN/SPQ-9B NON-RECURRING (TDP) - Organic		- / 1.888	- / -	- / -	- / -	- / -	- / -
<b>Subtotal: Recurring</b>		- / 40.275	- / 5.803	- / 5.912	- / 18.083	- / -	- / 18.083
<b>Subtotal: BR040 AN/SPQ-9B RADAR FMP EQUIPMENT</b>		6 / 40.275	1 / 5.803	1 / 5.912	3 / 18.083	- / -	3 / 18.083
<b>Subtotal: Procurement, All Modification Items</b>		- / 40.275	- / 5.803	- / 5.912	- / 18.083	- / -	- / 18.083
<b>Installation</b>							
<b>Modification Item 1 of 1:</b> BR040 AN/SPQ-9B RADAR FMP EQUIPMENT		- / 19.058	- / 0.000	- / 3.389	- / 5.040	- / 0.000	- / 5.040
<b>Subtotal: Installation</b>		- / 19.058	- / -	- / 3.389	- / 5.040	- / -	- / 5.040
<b>Total</b>							
<b>Total Cost (Procurement + Support + Installation)</b>		<b>59.333</b>	<b>5.803</b>	<b>9.301</b>	<b>23.123</b>	<b>0.000</b>	<b>23.123</b>

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy						<b>Date:</b> May 2017							
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 2				<b>P-1 Line Item Number / Title:</b> 2026 / SPQ-9B Radar				<b>Modification Number / Title:</b> 1 / BR040 AN/SPQ-9B RADAR FMP EQUIPMENT					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :						<b>MDAP/MAIS Code:</b>							
<b>Modification Item 1 of 1:</b> BR040 AN/SPQ-9B RADAR FMP EQUIPMENT													
<b>Manufacturer Information</b>													
Manufacturer Name: NORTHROP GRUMMAN						Manufacturer Location: BALTIMORE, MD							
Administrative Leadtime (in Months): 0						Production Leadtime (in Months): 18							
<b>Dates</b>		<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
Contract Dates		Dec 2015				May 2018				May 2018			
Delivery Dates		Apr 2018				Nov 2019				Jan 2020			
<b>Installation Information</b>													
<b>Method of Implementation:</b> [none specified]:: Installation Name: BR040 AN/SPQ-9B RADAR FMP EQUIPMENT													
<b>Installation Cost</b>		<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>	
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total 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 / 18.364		- / -		0 / 1.450		2 / 1.484		0 / 0.000		2 / 1.484	
FY 2016		0 / 0.694		- / -		0 / 1.400		1 / 0.700		0 / 0.000		1 / 0.700	
FY 2017		- / -		- / -		0 / 0.539		0 / 1.216		0 / 0.000		0 / 1.216	
FY 2018		- / -		- / -		- / -		0 / 1.640		0 / 0.000		0 / 1.640	
Total		8 / 19.058		- / -		0 / 3.389		3 / 5.040		0 / 0.000		3 / 5.040	
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	8	-	-	-	-	-	-	-	-	-	1	1	1
Out	7	-	-	1	-	-	-	-	-	-	-	1	1
<b>Footnotes:</b>													
<p>(4) 1) The follow-on contract was awarded in December 2015. This contract includes a total of twelve (12) FY14, FY15 and FY16 funded SPQ-9B radars being procured across several appropriations (OPN, SCN, FMS). The first radar will be delivered 22 months after award. All follow-on radars will be delivered at a rate of one every other month. Due to delayed contract award, the unit procured with FY14 funds will replace a system previously procured under Cruiser Modernization for CG61 which was diverted to meet the installation schedule requirements for LHD 2 in FY16. The installation on LHD 2 was fully funded in FY14. 2) The FY18 installations on the DDG 79, DDG 80 and LHD 6 were forward funded with surplus FY15 installation funds for Design Services Allocation (DSA)/Advance Planning (AP), and therefore no FY16 installation funds are required. 3) SPQ-9B was moved from BLI 5110 to BLI 2026 in FY2004. Prior to 2004, the procurement of the first five (5) AN/SPQ-9B systems was funded under the Mk 86 program under BLI 5110. The installation costs for four (4) out of five (5) of these installs were included in the 2026 budget. This explains the difference of 81 installations and only 77 procurements in this budget (delta 4). 4) Due to the shipyard requirement to fully fund the DDG 84 installation prior to start of the availability in January 2019, funding for the installation of the FY17 radar on DDG 84 is in FY19 despite the planned radar delivery of November 2019. The DDG 84 availability starts in January 2019 and ends in April 2020.</p>													

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy								Date: May 2017				
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars						P-1 Line Item Number / Title: 2136 / AN/SQQ-89 Surf ASW Cmbt Sys						
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A					Other Related Program Elements: 0205620N, 0603553N				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	1,685.813	103.241	90.029	102.222	0.000	102.222	123.433	124.567	127.598	135.209	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	1,685.813	103.241	90.029	102.222	0.000	102.222	123.433	124.567	127.598	135.209	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	1,685.813	103.241	90.029	102.222	0.000	102.222	123.433	124.567	127.598	135.209	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	2.927	2.058	0.869	-	0.869	3.173	1.667	1.191	1.051	Continuing	Continuing
Flyaway Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Description:												
Anti-Submarine Warfare (ASW) remains a Navy core competency in a dynamic and uncertain maritime environment. U.S. adversaries continue to develop asymmetric capabilities and capacities to deter, disrupt, or delay the entry of U.S. and allied naval forces, and pose a constant challenge as the Maritime Strategy is implemented. Evolving submarine technologies offer enhanced stealth, speed, endurance, weapons, and operational proficiency, trends foretelling that the adversary submarine of the future will have a significantly larger sphere of influence, while presenting less vulnerability to ASW forces. The effective offensive engagement range of the adversary submarine of the future will continue to match or outrange individual U.S. and multinational platform sensors and weapons in many tactical environments. Submarines are an increasing threat to all Naval and Allied ships, particularly modern diesel subs and faster torpedoes. Not only can the presence of potential hostile submarines delay naval combatant action until they are located and neutralized, submarines can also disrupt all seaborne logistics supply for any ground campaign as well as maritime commerce. ASW forces must be effective in all operating environments, ranging from the deep open ocean to the littorals, and are key to countering adversarial anti-access and area denial strategies.												
The AN/SQQ-89(V) Surface Ship ASW Combat System provides integrated Undersea Warfare (USW) combat management, fire control, command and control, and on-board training to enable surface combatants to engage USW targets in both open ocean and littoral environments. The AN/SQQ-89(V) is a system comprised of many subsystems, which integrate the helo and its sensors, the ship's own organic sensors, weapons, torpedo detection, and a high fidelity Surface ASW Synthetic Trainer (SAST). Variants of the AN/SQQ-89(V) are currently in operation on practically all in-service CG47 and DDG51 Class Surface Combatants.												
AN/SQQ-89A(V)15 Surface Ship USW Combat System Upgrade - Detailed Description: A major upgrade to the AN/SQQ-89(V) legacy system, the AN/SQQ-89A(V)15 upgrade significantly decreases ship vulnerability to torpedo attack, improves surface ship USW shallow water warfighting capability in the littoral, and mitigates Commercial-Off-The-Shelf (COTS) obsolescence and supportability issues. The AN/SQQ-89A(V)15 upgrade was reported as a critical need for surface ASW operations by SECNAV. A Fleet Forces Command (FFC) Urgent Operational Needs (UON) report identified the Fleet need for AN/SQQ-89A(V)15 upgrades. The need for the AN/SQQ-89A(V)15 is also articulated in the U.S. Pacific Command (PACOM) Integrated Priorities List (IPL); in Office of the Chief of Naval Operations (OPNAV) 'Surface ASW Capabilities Build' funding priorities letters; in a 7th Fleet Bottom Up review report; and in the U.S. Fleet Forces Command (USFFC) ASW Integrated Prioritized Capabilities List (IPCL).												
The AN/SQQ-89A(V)15 upgrade is programmed for backfit on: Select CG47 Class Baseline 3 and 4 (CG59-73) ships via OP,N BLI 0960 (Cruiser Modernization); DDG51 Class Flight I/II (DDG51-78) ships via OP,N BLI 0900 (DDG Modernization) and OP,N BLI 2136 (represented here); and DDG51 Class Flight IIA and follow (DDG79+) ships via OP,N BLI 2136 (represented here).												

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars		<b>P-1 Line Item Number / Title:</b> 2136 / AN/SQQ-89 Surf ASW Cmbt Sys
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A	<b>Program Elements for Code B Items:</b> N/A	<b>Other Related Program Elements:</b> 0205620N, 0603553N
<b>Line Item MDAP/MAIS Code:</b> N/A		
<p>The AN/SQQ-89A(V)15 upgrade, developed under RDT&amp;E,N PE 0205620N, capitalizes on previously fielded AN/SQQ-89(V)15 systems. The AN/SQQ-89A(V)15 is comprised of a tactical towed array sensor, the Multi-Function Towed Array (MFTA), and will replace standard, militarized, legacy components with Commercial-Off-The-Shelf (COTS) hardware to provide an ASW combat system with the capability for mid-frequency bistatic and multi-static sonar operations. The AN/SQQ-89A(V)15 features a mid-frequency bistatic hull/towed Sonar Echo Tracker Classifier (ETC); hull/towed Sonar with Acoustic Intercept (ACI) fused data for significantly improved torpedo defense; Handling &amp; Stowage Group (H&amp;SG) for MFTA operation; Torpedo Setting Panel (TSP); passive towed array processing; common sub/surface sensor performance and prediction; common NAVAIR/Surface Light Airborne Multi-Purpose System (LAMPS) processing; portable software; integrated supportability; and on-board training via the Surface ASW Synthetic Trainer (SAST). The AN/SQQ-89A(V)15 will be interoperable with AEGIS Weapons System (AWS) baselines; is Open Architecture (OA) compliant (meeting OA Level 3 requirements); provides significant reductions in weight, space, cooling, and power requirements over legacy AN/SQQ-89(V) systems; is Grade A shock qualified; supports Digital Fire Control Integration (DFCI) capability; and is integrated with the Battle Force Tactical Trainer (BFTT).</p> <p>Additionally, to be effective against increasingly stealthy threats in an often ambiguous undersea environment, future sensors must be environmentally adaptive, have very low false alarm rates, and exploit the full range of current and future submarine detection vulnerabilities. Via the Advanced Capability Build (ACB) process under RDT&amp;E,N PE 0205620N (ACB-13, ACB-15, ACB-17, etc.), these types of maturing/proven USW technologies will be folded into the AN/SQQ-89A(V)15 production and future technology refresh programs (fielded starting in FY 2016). Leveraging the submarine community's Acoustic Rapid Commercial-off-the-Shelf (COTS) Insertion (ARCI) process, the AN/SQQ-89A(V)15 Tech Refresh program procures upgraded software/hardware technology for all CG47/DDG51 Class surface combatant platforms with a previously fielded AN/SQQ-89A(V)15. This process has proven to manage obsolescence, take advantage of commercial development efforts, and continue to pace the threat to ensure systems remain effective well into the 21st century. Studies of the submarine and surface ASW technology show that system upgrades are most critical 6-9 years after initial installation of the AN/SQQ-89A(V)15, as failure rates within this period begin to rise. Establishing a stable technology refresh program will ensure the Fleet maintains critical Undersea Warfare capability (threat-pacing improvements) and productivity (Increased Operational Availability (Ao)) while reducing the Total Ownership Cost (TOC) to the Navy.</p> <p><b>YEAR TO YEAR FUNDING PROFILE FROM PROCUREMENT TO INSTALL:</b>  1st Year - Procurement of Equipment  2nd Year - Ordering of incidental installation material and perform mandatory planning yard design tasks and ship checks  3rd Year - Installation of Equipment</p> <p>The majority of AN/SQQ-89A(V)15 shipset, shore site, and trainer equipment is procured via the prime vendor (currently Lockheed Martin based out of NY and VA, with subcontract to Advanced Acoustic Concepts (AAC), based out of NY and PA), while other Contractor Furnished Equipment (CFE), such as the MFTA, OK-410 H&amp;SG, SAST, Static Automated Bus Transfer System (SABTS), TSP, Calibrated Reference Hydrophone (CRH) Junction Box, Portable Towed Array Test Set (PTATS), On Board Repair Parts (OBRPs), Maintenance Assist Modules (MAMS), Installation Checkout (INCO) Spares, and Special Tools and Test Equipment (STTE), is procured via other, separate, contract/funding vehicles.</p> <p>An average, aggregate AN/SQQ-89A(V)15 shipset unit cost is indicated on the applicable budget exhibits, however, it should be noted that this unit cost is comprised of multiple contract/funding vehicles as mentioned above. Additionally, the subdivision of these unit costs to a specific ship can vary as they are dependent on the pre-existing legacy AN/SQQ-89(V) configuration of each ship.</p> <p>AN/SQQ-89A(V)15 production shipset delivery time is 18 months after contract award. Each subsequent system procured in an FY is delivered one month later than the previous system. Delivery of equipment to the shipyard is preferably no later than 30-90 days prior to a CONUS (Continental U.S.) installation start date, and no later than 120 days prior to a non-CONUS installation start date. Installations are assigned to specific ships as per Fleet priorities/requirements, and based on ship availabilities. Fleet availability periods to support a major upgrade such as the AN/SQQ-89A(V)15 normally occur only once every two years in a ship's schedule.</p> <p>FY 2018 and follow AN/SQQ-89A(V)15 installation unit cost increases since the President's Budget 2017 submit reflect projections for when the shipyards transition from Multi-Ship/Multi-Option (MS/MO) to a Firm-Fixed Price (FFP) contracting strategy, as directed by the Fleet Forces Command Naval Message, dated March FY 2016.</p> <p>[P40A / DB400 - DDG51 CLASS SYSTEM COMPONENTS - SQQ-89A(V)15]: DB400 Cost Elements/Descriptions as Follows:</p>		

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars		P-1 Line Item Number / Title: 2136 / AN/SQQ-89 Surf ASW Cmbt Sys
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0205620N, 0603553N
Line Item MDAP/MAIS Code: N/A		
<p>[P40A / SYSTEM UPDATES (NON RECURRING ENGINEERING)]: 1.1 Consists of the NRE efforts associated with the technology refresh/replacement of legacy AN/SQQ-89(V) equipment with updated Commercial-Off-The-Shelf (COTS) processors, including material procurement, fabrication, and integration of Government Furnished Property (GFP), as performed by the prime contractor. Hardware reviews will be conducted on an annual basis to determine if hardware changes are warranted based on Commercial-Off-The-Shelf (COTS) obsolescence and to identify applicable state-of-the-practice hardware components. This line also includes start-up/transition funding required for the AN/SQQ-89(V) prime in the first year of each new production/design agent contract.</p>		
<p>[P40A / EC'S (ENGINEERING CHANGES)]: 1.2 Consists of Engineering Change Proposals (ECPs) and hardware/software changes/upgrades to previously fielded and in-production AN/SQQ-89A(V)15 systems. Funding will be used to support non-recurring first article test efforts associated with the changing Commercial-Off-The-Shelf (COTS) environment as well as Reliability, Maintainability, and Availability (RM&amp;A) modifications requested by the Fleet; correct deficiencies identified through Fleet use; upgrade unreliable components; replace obsolete components; and correct design errors found during testing.</p>		
<p>Note: This line includes a major FY 2018 (\$4.707M) and FY 2019 (\$10.118M) Multi-Function Towed Array (MFTA) Engineering Change (EC) which is required to address and resolve deficiencies in the current MFTA TB-37 version's reliability (by changing from a Towed Array Integrated Product Team (TAIPT) telemetry to a more reliable telemetry), as well as address and resolve parts obsolescence issues. In FY 2018, funding (\$4.707M of the EC's \$6.448M budget) is required to complete the shipboard towed array receiver EC. In FY 2019, funding (\$10.118M of the EC's \$11.731M budget) is required to assemble the array and towed array receiver, conduct array and receiver acceptance test &amp; evaluation efforts to certify they meet current AN/SQQ-89A(V)15 USW Combat System performance envelope specifications, and implement the EC in production. The MFTA TB-37 is the towed array version that is currently in production and employed by the AN/SQQ-89A(V)15 USW Combat System.</p>		
<p>[P40A / ILS (INTEGRATED LOGISTICS SUPPORT)]: 1.3 Funding is provided for all ILS planning and coordination elements associated with every AN/SQQ-89A(V)15 modification/procurement/installation, including: configuration management and control of the hardware and software associated with each modification such as Maintenance and Material Management (3M); planned and corrective maintenance procedures and drawings; supporting the procurement of upgrades to Technical Training Equipment (TTE) for shore training sites; changes to maintenance concepts and associated updates to technical documentation, such as technical manuals; development of revisions to both operator and maintenance training materials as part of the initial training curriculum development; revisions to the Navy Training System Plan; initial conduct of instructor training (train-the-trainer) until such time that the training community assumes the responsibility; modifications to supply support related provisioning data and identification of related changes to Allowance Parts Lists (APLs) and Program Support Data (PSD) spares procurement lists; and Packaging, Handling, Storage and Transportation (PHST) support during the procurement, Installation and Checkout (INCO), and testing stages of the AN/SQQ-89A(V)15 to meet evolving capabilities.</p>		
<p>[P40A / AIE (AEGIS INTEGRATION EVENTS)]: 1.4 Recurring engineering support services associated with AN/SQQ-89A(V)15 equipment at the Surface Combatant Systems Center (SCSC) Wallops Island, VA test facility to support land-based testing, external interface testing, and AEGIS Integration Event (AIE) production systems testing for interoperability risk reduction analysis purposes as necessary to certify that each incremental AN/SQQ-89A(V)15 hardware/software build is compatible with multiple AEGIS Weapons System (AWS) baselines prior to installation.</p>		
<p>[P40A / CSSQT (COMBAT SYSTEMS SHIP QUALIFICATION TRIALS)]: 1.5 CSSQTs are required per Naval Sea Systems Instruction 90963.1C for all ships undergoing significant conversion/modernization availabilities. CSSQTs consist of a series of at-sea exercises and tests to verify/certify the AN/SQQ-89A(V)15 or AN/SQQ-89A(V)15 Technology Refresh system has been installed properly and can be operated and maintained safely and effectively. CSSQTs follow every AN/SQQ-89A(V)15 FLT I/II/IIA first-of-its-kind or AN/SQQ-89A(V)15 Technology Refresh installation.</p>		
<p>Note: CSSQT costs are dependent on the number, scope and complexity of CSSQTs planned per Fiscal Year (FY). CSSQTs planned for AN/SQQ-89A(V)15 FLT I/II/IIA installs are higher in cost, scope and complexity than those for AN/SQQ-89A(V)15 Technology Refreshes. In FY 2016 (\$4.344M), five (5) CSSQTs are planned (three for AN/SQQ-89A(V)15 FLT IIA installs and two for AN/SQQ-89A(V)15 Technology Refresh installs). In FY 2017 (\$4.206M), five (5) CSSQTs are planned (two for AN/SQQ-89A(V)15 FLT IIA installs and three for AN/SQQ-89A(V)15 Technology Refresh installs). In FY 2018 (\$6.686M), seven (7) CSSQTs are planned (four for AN/SQQ-89A(V)15 FLT I/II/IIA installs and three for AN/SQQ-89A(V)15 Technology Refresh installs).</p>		
<p>[P40A / FOT&amp;E (FOLLOW-ON OPERATIONAL TEST &amp; EVALUATION)]: 1.6 Represents the final independent test of each new increment of the AN/SQQ-89A(V)15 production baseline (i.e. ACB-13, ACB-15, ACB-17, etc.) conducted in support of the Director, Operational Test and Evaluation Title X review and report to the Congress. Follow-On Operational Test &amp; Evaluation events are conducted to ensure each increment meets the operational effectiveness and suitability requirements for each incremental AN/SQQ-89 ACB production baseline, along with its readiness and performance goals. Each test cycle is planned the year after initial ACB baseline fielding to allow time for installation and to verify performance prior to conducting the FOT&amp;E.</p>		

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars		P-1 Line Item Number / Title: 2136 / AN/SQQ-89 Surf ASW Cmbt Sys
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0205620N, 0603553N
Line Item MDAP/MAIS Code: N/A		
<p>Note: FOT&amp;E costs are primarily biennial driven, and dependent on the scope and complexity of the next new AN/SQQ-89 Advanced Capability Build (ACB) production baseline release being tested. There is no requirement to conduct an FOT&amp;E event in FY 2016. In FY 2017 (\$1.542M), funding is required to conduct an FOT&amp;E event on the next new AN/SQQ-89 ACB production baseline release.</p> <p>[P40A / FLTASWTRACEN (FLEET ASW TRAINING CENTER)]: 1.7 Upgrade of AN/SQQ-89A(V)15 training equipment for the Fleet ASW Training Center, San Diego, CA. Training system improvements are a critical factor in achieving warfighter competencies and mission readiness. Equipment must be upgraded periodically to ensure continued support of the latest backfit Advanced Capability Build (ACB) and AEGIS Weapon System (AWS) baselines and to implement Fleet prioritized warfighting training improvements to meet evolving capabilities.</p> <p>Note: FLTASWTRACEN costs are primarily biennial driven, and dependent on the scope and complexity of training equipment to be upgraded to ensure continued support of the latest AN/SQQ-89A(V)15 backfit Advanced Capability Build (ACB) and AEGIS Weapon System (AWS) baselines. In FY 2016 (\$0.647M), funding is required to upgrade the equipment at FLTASWTRACEN. There is no requirement to upgrade equipment at the FLTASWTRACEN in FY 2017. In FY 2018 (\$1.257M), funding is required to upgrade the equipment at FLTASWTRACEN.</p> <p>[P40A / SSES (SURFACE SHIP ENGINEERING SITE)]: 1.8 Procurement of AN/SQQ-89A(V)15 equipment for land-based sites, including the SSES at the prime vendor's facility, to support production system integration and interoperability testing. Equipment includes simulation hardware, test tools, fabrication and test of mod kits (hardware and operational software), and laboratory equipment. Equipment must be upgraded periodically to ensure continued support of the latest backfit AN/SQQ-89A(V)15 Advanced Capability Build (ACB) and AEGIS Weapon System (AWS) baselines.</p> <p>Note: SSES costs are primarily biennial driven, and dependent on the scope and complexity of shore site equipment to be upgraded to ensure continued support of the latest AN/SQQ-89A(V)15 backfit Advanced Capability Build (ACB) and AEGIS Weapon System (AWS) baselines. In FY 2016 (\$3.267M), funding is required to upgrade the equipment at the SSES land-based site. There is no requirement to upgrade equipment at the SSES land-based site in FY 2017. In FY 2018 (\$2.580M), funding is required to upgrade the equipment at the SSES land-based site.</p> <p>[P40A / SCSC (SURFACE COMBATANT SYSTEMS CENTER)]: 1.9 Procurement of AN/SQQ-89A(V)15 equipment for land-based sites including the Surface Combatant Systems Center (SCSC) at Wallops Island, VA, to support production system integration and interoperability testing. Equipment includes simulation hardware, test tools, fabrication and test of mod kits (hardware and operational software), and laboratory equipment. Equipment must be upgraded periodically to ensure continued support of the latest backfit Advanced Capability Build (ACB) and AEGIS Weapon System (AWS) baselines.</p> <p>Note: SCSC Wallops costs are primarily biennial driven, and dependent on the scope and complexity of shore site equipment to be upgraded to ensure continued support of the latest AN/SQQ-89A(V)15 backfit Advanced Capability Build (ACB) and AEGIS Weapon System (AWS) baselines. There is no requirement to upgrade equipment at the SCSC Wallops land-based site in FY 2016. In FY 2017 (\$1.957M), funding is required to upgrade the equipment at the SCSC Wallops land-based site. There is no requirement to upgrade equipment at the SCSC Wallops land-based site in FY 2018.</p> <p>[P40A / MFTA (MULTI-FUNCTION TOWED ARRAY) MAJOR EQUIPMENT]: 1.10 Procurement of MFTA full module sets required for expeditious replacement in the event of major damage (the TB-37 MFTA component is considered a principle item). The MFTA is a key component of the AN/SQQ-89A(V)15 USW Combat System upgrade on Surface Combatants and enables ships to have active bi-statics, Continuous Active Sonar (CAS), adaptive beamforming, passive bellringers, and the use of new sensors for advanced torpedo detection. Prior year MFTA procurements were of the TB-37 version. FY 2020 and forward MFTA procurements are of the TB-37X version.</p> <p>[P40A / DB830 - PRODUCTION ENGINEERING - SQQ-89A(V)15]: DB830 Cost Element/Description as Follows:</p> <p>[P40A / PRODUCTION ENGINEERING]: 2.1 Funding is for AN/SQQ-89A(V)15 program In-Service Engineering Agent (ISEA), Software Support Activity (SSA), Acquisition Engineering Agent (AEA), and Technical Design Agent (TDA) efforts in performing the following functions: writing of contracts; review and evaluation of production design data, documentation and Contract Data Requirements Lists (CDRLs); letting of production contract awards; on-site engineering support at the prime integrator's facility; production configuration control and quality assurance (Production Inspection Test (PIT) and Production Reliability Acceptance Test (PRAT)); witnessing of segment/system integration tests and preparation of reports; conduct of first article and factory acceptance tests; collection of performance metrics; generation/assessment of Software Problem Reports (SPRs) and coordination with vendors; value and maintenance engineering; coordination with AEGIS regarding interface definition and ship integration; support safety review and AEGIS Integration Events (AIE); provide plans, procedures and inputs to support Information Assurance (IA) mandates; provide status reports and technical briefings; support meetings with program office; and all other production support efforts directly related to delivery of AN/SQQ-89A(V)15 software and hardware.</p>		



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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars		P-1 Line Item Number / Title: 2136 / AN/SQQ-89 Surf ASW Cmbt Sys
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0205620N, 0603553N
Line Item MDAP/MAIS Code: N/A		
[P40A / DB900 - CONSULTING SERVICES - SQQ-89A(V)15]: DB900 Cost Element/Description as Follows:		
[P40A / CONSULTING SERVICES]: 3.1 Funding to provide assistance in the following areas: program and financial management; system specification validation; production planning; business case and market analyses; vendor cost, schedule, performance, production, and contract deliverable monitoring; installation planning and coordination; Integrated Logistics Support (ILS) asset management, planning, documentation, and coordination; and evaluation of Engineering Change Proposals (ECPs).		
[P3A / AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE]: See the following:		
AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE - COST CODE DB400 PROCUREMENT: Procurement of AN/SQQ-89A(V)15 equipment for subsequent backfit installation on all DDG79-112 Flight IIA ships. An average, aggregate AN/SQQ-89A(V)15 unit cost is indicated, however, it should be noted that this cost is comprised of multiple contract/funding vehicles. Additionally, the subdivision of these unit costs to a specific ship can vary as they are dependent on the pre-existing configuration of each ship.		
AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE - COST CODE DB6IN INSTALLATION: Funding is for the full-up physical installation of the major AN/SQQ-89A(V)15 upgrade, the ordering of incidental installation material in the year prior to the actual installation, and Design Services Allocation (DSA) required for mandatory planning yard design tasks and ship checks that must be completed within the one year period leading up to the actual installation in the shipyard.		
Note: FY 2018 and follow AN/SQQ-89A(V)15 installation unit cost increases since the President's Budget 2017 submit reflect projections for when the shipyards transition from Multi-Ship/Multi-Option (MS/MO) to a Firm-Fixed Price (FFP) contracting strategy, as directed by the Fleet Forces Command Naval Message, dated March FY 2016.		
[P3A / AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE]: See the following:		
AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE - COST CODE DB400 PROCUREMENT: Procurement of AN/SQQ-89A(V)15 equipment for subsequent backfit installation on select DDG51-78 FLT I/II ships. An average, aggregate AN/SQQ-89A(V)15 unit cost is indicated, however, it should be noted that this cost is comprised of multiple contract/funding vehicles. Additionally, the subdivision of these unit costs to a specific ship can vary as they are dependent on the pre-existing configuration of each ship.		
AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE - COST CODE DB6IN INSTALLATION: Funding is for the full-up physical installation of the major AN/SQQ-89A(V)15 upgrade, the ordering of incidental installation material in the year prior to the actual installation, and Design Services Allocation (DSA) required for mandatory planning yard design tasks and ship checks that must be completed within the one year period leading up to the actual installation in the shipyard.		
Note: FY 2018 and follow AN/SQQ-89A(V)15 installation unit cost increases since the President's Budget 2017 submit reflect projections for when the shipyards transition from Multi-Ship/Multi-Option (MS/MO) to a Firm-Fixed Price (FFP) contracting strategy, as directed by the Fleet Forces Command Naval Message, dated March FY 2016.		
[P3A - 3 / AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE]: See the following:		
AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE - COST CODE DB400 PROCUREMENT: Procurement of a subset of AN/SQQ-89A(V)15 equipment, specifically the Multi-Function Towed Array (MFTA) and Handling & Stowage Group (H&SG), for subsequent installation on all DDG113 and follow ships during their Post Delivery Availability (PDA) or Post Shakedown Availability (PSA) periods, to upgrade the ASW sonar suite from an AN/SQQ-89(V)15 configuration to the AN/SQQ-89A(V)15 configuration.		
AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE - COST CODE DB6IN INSTALLATION: Physical installation of the H&SG and MFTA on DDG113 and follow ships during their PDA or PSA period which includes the installation of an egress, under-deck stiffeners, cables, bulkheads, opening and closing of the transom, the winch, levelwind, fairlead and control station, decking, painting, and final system testing, the ordering of incidental installation material in the year prior to the actual installation, and Design Services Allocation (DSA) required for mandatory planning yard design tasks and ship checks that must be completed within the one year period leading up to the actual installation in the shipyard.		

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars		P-1 Line Item Number / Title: 2136 / AN/SQQ-89 Surf ASW Cmbt Sys
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0205620N, 0603553N
Line Item MDAP/MAIS Code: N/A		
<p>Note: FY 2018 and follow AN/SQQ-89A(V)15 installation unit cost increases since the President's Budget 2017 submit reflect projections for when the shipyards transition from Multi-Ship/Multi-Option (MS/MO) to a Firm-Fixed Price (FFP) contracting strategy, as directed by the Fleet Forces Command Naval Message, dated March FY 2016.</p> <p>[P3A - 4 / AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH]: See the following:</p> <p>AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH - COST CODE DB400 PROCUREMENT: Procurement of software/hardware technology upgrades for all CG47/DDG51 Class surface combatant platforms with a previously fielded AN/SQQ-89A(V)15, as necessary to manage obsolescence, take advantage of commercial development efforts, and continue to pace the threat and ensure the system remains effective well into the 21st century. Updating the hardware and software will ensure the Fleet maintains critical Undersea Warfare capability while reducing obsolescence. Establishing a technology refresh program provides a method for rapid response to meet Fleet Anti-Submarine Warfare (ASW) requirements.</p> <p>Note: Since the submission of the FY 2017 President's Budget, one (1) AN/SQQ-89A(V)15 Technology Insertion/Refresh buy was cut in FY 2017, as necessary to offset increases to AN/SQQ-89A(V)15 installation costs.</p> <p>AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH - COST CODE DB6IN INSTALLATION: Funding is for the physical installation of the AN/SQQ-89A(V)15 Technology Refresh upgrade, the ordering of incidental installation material in the year prior to the actual installation, and Design Services Allocation (DSA) required for mandatory planning yard design tasks and ship checks that must be completed within the one year period leading up to the actual installation in the shipyard.</p> <p>Note 1: FY 2018 and follow AN/SQQ-89A(V)15 installation unit cost increases since the President's Budget 2017 submit reflect projections for when the shipyards transition from Multi-Ship/Multi-Option (MS/MO) to a Firm-Fixed Price (FFP) contracting strategy, as directed by the Fleet Forces Command Naval Message, dated March FY 2016.</p> <p>Note 2: AN/SQQ-89A(V)15 Technology Insertion/Refresh shipset buys were reduced by 1 in FY 2018 and 2 in FY 2019, in order for the program to fund a major Engineering Change (EC) to the Multi-Function Towed Array (MFTA), which is critically required to address and resolve deficiencies in the current MFTA TB-37 version's reliability (by changing from a Towed Array Integrated Product Team (TAIPT) telemetry to a more reliable telemetry), as well as address and resolve parts obsolescence issues.</p>		

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy								<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars						<b>P-1 Line Item Number / Title:</b> 2136 / AN/SQQ-89 Surf ASW Cmbt Sys				
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A			<b>Program Elements for Code B Items:</b> N/A			<b>Other Related Program Elements:</b> 0205620N, 0603553N				
<b>Line Item MDAP/MAIS Code:</b> N/A										
Exhibits Schedule					Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	AN/SQQ-89(V) SURFACE ASW COMBAT SYSTEM				- / 1,279.051	- / 21.531	- / 21.853	- / 29.114	- / -	- / 29.114
P-3a	1 / AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE (Warfighting Capability)				- / 368.623	- / 36.743	- / 21.966	- / 23.437	- / 0.000	- / 23.437
P-3a	2 / AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE (Warfighting Capability)				- / 0.000	- / 18.905	- / 11.720	- / 10.068	- / 0.000	- / 10.068
P-3a	3 / AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE (Warfighting Capability)				- / 16.177	- / 7.482	- / 13.255	- / 16.205	- / 0.000	- / 16.205
P-3a	4 / AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH (Warfighting Capability)				- / 21.962	- / 18.580	- / 21.235	- / 23.398	- / 0.000	- / 23.398
<b>P-40</b>	<b>Total Gross/Weapon System Cost</b>				<b>- / 1,685.813</b>	<b>- / 103.241</b>	<b>- / 90.029</b>	<b>- / 102.222</b>	<b>- / 0.000</b>	<b>- / 102.222</b>
<p>*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.</p> <p>Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.</p>										
<p><b>Justification:</b>            The OP,N BLI 2136 budget primarily supports the upgrade of legacy, in-service AN/SQQ-89(V) systems to the superior AN/SQQ-89A(V)15 USW Combat System baseline. Additionally, the OP,N BLI 2136 budget will be responsible for periodic technology refresh initiatives in conjunction with previously fielded AN/SQQ-89A(V)15 systems across all CG47 and DDG51 Class platforms (software/hardware technology upgrades/insertions) to pace the threat and remain effective well into the 21st century.</p>										

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy															Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2								P-1 Line Item Number / Title: 2136 / AN/SQQ-89 Surf ASW Cmbt Sys							Aggregated Items Title: AN/SQQ-89(V) SURFACE ASW COMBAT SYSTEM					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
1) DB400 - DDG51 CLASS SYSTEM COMPONENTS - SQQ-89A(V)15																				
1.1) SYSTEM UPDATES (NON RECURRING ENGINEERING)			-	-	13.878	-	-	1.785	-	-	1.809	-	-	1.848	-	-	-	-	-	1.848
1.2) EC'S (ENGINEERING CHANGES) <sup>(1)</sup>			-	-	1,092.249	-	-	1.681	-	-	1.705	-	-	6.448	-	-	-	-	-	6.448
1.3) ILS (INTEGRATED LOGISTICS SUPPORT)			-	-	33.558	-	-	3.174	-	-	3.219	-	-	3.086	-	-	-	-	-	3.086
1.4) AIE (AEGIS INTEGRATION EVENTS)			-	-	18.394	-	-	1.921	-	-	2.640	-	-	2.562	-	-	-	-	-	2.562
1.5) CSSQT (COMBAT SYSTEMS SHIP QUALIFICATION TRIALS) <sup>(2)</sup>			-	-	22.799	-	-	4.344	-	-	4.206	-	-	6.686	-	-	-	-	-	6.686
1.6) FOT&E (FOLLOW-ON OPERATIONAL TEST & EVALUATION) <sup>(3)</sup>			-	-	4.943	-	-	-	-	-	1.542	-	-	-	-	-	-	-	-	-
1.7) FLTASWTRACEN (FLEET ASW TRAINING CENTER) <sup>(4)</sup>			-	-	2.825	-	-	0.647	-	-	-	-	-	1.257	-	-	-	-	-	1.257
1.8) SSES (SURFACE SHIP ENGINEERING SITE) <sup>(5)</sup>			-	-	8.898	-	-	3.267	-	-	-	-	-	2.580	-	-	-	-	-	2.580
1.9) SCSC (SURFACE COMBATANT SYSTEMS CENTER) <sup>(6)</sup>			-	-	2.301	-	-	-	-	-	1.957	-	-	-	-	-	-	-	-	-
1.10) MFTA (MULTI-FUNCTION TOWED ARRAY) MAJOR EQUIPMENT	A		2,762K	8	22.099	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) DB400 - DDG51 CLASS SYSTEM COMPONENTS - SQQ-89A(V)15			-	-	1,221.944	-	-	16.819	-	-	17.078	-	-	24.467	-	-	-	-	-	24.467

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy																Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2									P-1 Line Item Number / Title: 2136 / AN/SQQ-89 Surf ASW Cmbt Sys							Aggregated Items Title: AN/SQQ-89(V) SURFACE ASW COMBAT SYSTEM					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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) DB830 - PRODUCTION ENGINEERING - SQQ-89A(V)15																					
2.1) PRODUCTION ENGINEERING				-	-	40.784	-	-	3.272	-	-	3.309	-	-	3.205	-	-	-	-	-	3.205
Subtotal: 2) DB830 - PRODUCTION ENGINEERING - SQQ-89A(V)15				-	-	40.784	-	-	3.272	-	-	3.309	-	-	3.205	-	-	-	-	-	3.205
3) DB900 - CONSULTING SERVICES - SQQ-89A(V)15																					
3.1) CONSULTING SERVICES				-	-	16.323	-	-	1.440	-	-	1.466	-	-	1.442	-	-	-	-	-	1.442
Subtotal: 3) DB900 - CONSULTING SERVICES - SQQ-89A(V)15				-	-	16.323	-	-	1.440	-	-	1.466	-	-	1.442	-	-	-	-	-	1.442
Total				-	-	1,279.051	-	-	21.531	-	-	21.853	-	-	29.114	-	-	-	-	-	29.114
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																					
Footnotes:																					
(1) 1.2 EC'S (ENGINEERING CHANGES): The FY 2017 (\$1.705M) to FY 2018 (\$6.448M) to FY 2019 (\$11.731M) increases are driven by a major FY 2018-2019 Multi-Function Towed Array (MFTA) Engineering Change (EC) which is required to address and resolve deficiencies in the current MFTA TB-37 version's reliability (by changing from a Towed Array Integrated Product Team (TAIPT) telemetry to a more reliable telemetry), as well as address and resolve parts obsolescence issues. In FY 2018, funding (\$4.707M of the EC's \$6.448M budget) is required to complete the shipboard towed array receiver EC. In FY 2019, funding (\$10.118M of the EC's \$11.731M budget) is required to assemble the array and towed array receiver, conduct array and receiver acceptance test & evaluation efforts to certify they meet current AN/SQQ-89A(V)15 USW Combat System performance envelope specifications, and implement the EC in production. The MFTA TB-37 is the towed array version that is currently in production and employed by the AN/SQQ-89A(V)15 USW Combat System.																					
(2) 1.5 CSSQT (Combat Systems Qualification Trials): CSSQT costs are dependent on the number, scope and complexity of CSSQTs planned per Fiscal Year (FY). CSSQTs planned for AN/SQQ-89A(V)15 FLT I/II/IIA installs are higher in cost, scope and complexity than those for AN/SQQ-89A(V)15 Technology Refreshes. In FY 2016 (\$4.344M), five (5) CSSQTs are planned (three for AN/SQQ-89A(V)15 FLT IIA installs and two for AN/SQQ-89A(V)15 Technology Refresh installs). In FY 2017 (\$4.206M), five (5) CSSQTs are planned (two for AN/SQQ-89A(V)15 FLT IIA installs and three for AN/SQQ-89A(V)15 Technology Refresh installs). In FY 2018 (\$6.686M), seven (7) CSSQTs are planned (four for AN/SQQ-89A(V)15 FLT I/II/IIA installs and three for AN/SQQ-89A(V)15 Technology Refresh installs).																					
(3) 1.6 FOT&E (Follow-On Operational Test & Evaluation): FOT&E costs are primarily biennial driven, and dependent on the scope and complexity of the next new AN/SQQ-89 Advanced Capability Build (ACB) production baseline release being tested. There is no requirement to conduct an FOT&E event in FY 2016. In FY 2017 (\$1.542M), funding is required to conduct an FOT&E event on the next new AN/SQQ-89 ACB production baseline release.																					
(4) 1.7 FLTASWTRACEN (Fleet ASW Training Center, San Diego, CA): FLTASWTRACEN costs are primarily biennial driven, and dependent on the scope and complexity of training equipment to be upgraded to ensure continued support of the latest AN/SQQ-89A(V)15 backfit Advanced Capability Build (ACB) and AEGIS Weapon System (AWS) baselines. In FY 2016 (\$0.647M), funding is required to upgrade the equipment at FLTASWTRACEN. There is no requirement to upgrade equipment at the FLTASWTRACEN in FY 2017. In FY 2018 (\$1.257M), funding is required to upgrade the equipment at FLTASWTRACEN.																					
(5) 1.8 SSES (Surface Ship Engineering Site, Prime Vendor's Facility): SSES costs are primarily biennial driven, and dependent on the scope and complexity of shore site equipment to be upgraded to ensure continued support of the latest AN/SQQ-89A(V)15 backfit Advanced Capability Build (ACB) and AEGIS Weapon System (AWS) baselines. In FY 2016 (\$3.267M), funding is required to upgrade the equipment at the SSES land-based site. There is no requirement to upgrade equipment at the SSES land-based site in FY 2017. In FY 2018 (\$2.580M), funding is required to upgrade the equipment at the SSES land-based site.																					
(6) 1.9 SCSC (Surface Combatant Systems Center, Wallops Island, VA): SCSC Wallops costs are primarily biennial driven, and dependent on the scope and complexity of shore site equipment to be upgraded to ensure continued support of the latest AN/SQQ-89A(V)15 backfit Advanced Capability Build (ACB) and AEGIS Weapon System (AWS) baselines. There is no requirement to upgrade equipment at the SCSC Wallops land-based site in FY 2016. In FY 2017 (\$1.957M), funding is required to upgrade the equipment at the SCSC Wallops land-based site. There is no requirement to upgrade equipment at the SCSC Wallops land-based site in FY 2018.																					

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Exhibit P-3a, Individual Modification: FY 2018 Navy					Date: May 2017		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2		P-1 Line Item Number / Title: 2136 / AN/SQQ-89 Surf ASW Cmbt Sys			Modification Number / Title: 1 / AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE		
ID Code (A=Service Ready, B=Not Service Ready) :				MDAP/MAIS Code:			
Resource Summary		Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Procurement Quantity (Units in Each)		-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)		368.623	36.743	21.966	23.437	0.000	23.437
Less PY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)		368.623	36.743	21.966	23.437	0.000	23.437
Plus CY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)		368.623	36.743	21.966	23.437	0.000	23.437
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)							
Initial Spares (\$ in Millions)		-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)		-	-	-	-	-	-
Description: [AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE] See the following:  YEAR TO YEAR FUNDING PROFILE FROM PROCUREMENT TO INSTALL: 1st Year - Procurement of Equipment 2nd Year - Ordering of incidental installation material and perform mandatory planning yard design tasks and ship checks. This is shown as a quantity of "0" with requested funds in the year before the installation of equipment. 3rd Year - Installation of Equipment  AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE - COST CODE DB400 PROCUREMENT: Procurement of AN/SQQ-89A(V)15 equipment for subsequent backfit installation on all DDG79-112 Flight IIA ships. An average, aggregate AN/SQQ-89A(V)15 unit cost is indicated, however, it should be noted that this cost is comprised of multiple contract/funding vehicles. Additionally, the subdivision of these unit costs to a specific ship can vary as they are dependent on the pre-existing configuration of each ship.  AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE - COST CODE DB6IN INSTALLATION: Funding is for the full-up physical installation of the major AN/SQQ-89A(V)15 upgrade, the ordering of incidental installation material in the year prior to the actual installation, and Design Services Allocation (DSA) required for mandatory planning yard design tasks and ship checks that must be completed within the one year period leading up to the actual installation in the shipyard.  Note: FY 2018 and follow AN/SQQ-89A(V)15 installation unit cost increases since the President's Budget 2017 submit reflect projections for when the shipyards transition from Multi-Ship/Multi-Option (MS/MO) to a Firm-Fixed Price (FFP) contracting strategy, as directed by the Fleet Forces Command Naval Message, dated March FY 2016.  The AN/SQQ-89A(V)15 requires a CNO (Chief of Naval Operations) availability period. The installation is accomplished by Alteration Installation Team (AIT) and shipyard personnel together. The AIT personnel are responsible for the removal of all AN/SQQ-89(V) legacy equipment, addition and modification of foundations, and installation, connectorization, and test of all new AN/SQQ-89A(V)15 equipment. The shipyard personnel are responsible for all rigging activities, hull access cuts, and installation of the Handling & Stowage Gear (H&SG) on non-tailed (i.e. no towed array) DDG51 Class Flight IIA hulls, which is required for the operation of the tactical towed sonar, the Multi-Function Towed Array (MFTA).  AN/SQQ-89A(V)15 production shipset delivery time is 18 months after contract award. Each subsequent system procured in an FY is delivered one month later than the previous system. Delivery of equipment to the shipyard is preferably no later than 30-90 days prior to a CONUS (Continental U.S.) installation start date and no later than 120 days prior to a non-CONUS installation start date. Installations are assigned							

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 2	<b>P-1 Line Item Number / Title:</b> 2136 / AN/SQQ-89 Surf ASW Cmbt Sys	<b>Modification Number / Title:</b> 1 / AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :		<b>MDAP/MAIS Code:</b>
to specific ships as per Fleet priorities/requirements, and based on ship availabilities, as identified in the Fleet Modernization Program Management Information System (FMPMIS). Significant maintenance availability periods to support a major upgrade such as the AN/SQQ-89A(V)15 normally occur only once every two years in a ship's schedule.		

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy						<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 2			<b>P-1 Line Item Number / Title:</b> 2136 / AN/SQQ-89 Surf ASW Cmbt Sys			<b>Modification Number / Title:</b> 1 / AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :					<b>MDAP/MAIS Code:</b>		
<b>Models of Systems Affected:</b> Upgrade of legacy AN/SQQ-89(V) systems on all DDG79-112 ships to AN/SQQ-89A(V)15 configuration			<b>Modification Type:</b> Warfighting Capability		<b>Related RDT&amp;E PEs:</b> 0205620N		
<b>Financial Plan</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
<b>Procurement</b>							
<b>Modification Item 1 of 1:</b> AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE							
B Kits							
Recurring							
1.1.1) AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE - NonOrganic <sup>(7)</sup>	28 / 253.734	2 / 21.861	1 / 11.127	1 / 11.328	- / -	1 / 11.328	
<b>Subtotal: Recurring</b>	- / 253.734	- / 21.861	- / 11.127	- / 11.328	- / -	- / 11.328	
<b>Subtotal: AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE</b>	28 / 253.734	2 / 21.861	1 / 11.127	1 / 11.328	- / -	1 / 11.328	
<b>Subtotal: Procurement, All Modification Items</b>	- / 253.734	- / 21.861	- / 11.127	- / 11.328	- / -	- / 11.328	
<b>Installation</b>							
<b>Modification Item 1 of 1:</b> AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE							
	- / 114.889	- / 14.882	- / 10.839	- / 12.109	- / 0.000	- / 12.109	
<b>Subtotal: Installation</b>	- / 114.889	- / 14.882	- / 10.839	- / 12.109	- / -	- / 12.109	
<b>Total</b>							
<b>Total Cost (Procurement + Support + Installation)</b>	<b>368.623</b>	<b>36.743</b>	<b>21.966</b>	<b>23.437</b>	<b>0.000</b>	<b>23.437</b>	



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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy						<b>Date:</b> May 2017							
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 2				<b>P-1 Line Item Number / Title:</b> 2136 / AN/SQQ-89 Surf ASW Cmbt Sys				<b>Modification Number / Title:</b> 1 / AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :						<b>MDAP/MAIS Code:</b>							
<b>Modification Item 1 of 1:</b> AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE													
<b>Manufacturer Information</b>													
Manufacturer Name: Lockheed Martin						Manufacturer Location: Manassas, VA							
Administrative Leadtime (in Months): 3						Production Leadtime (in Months): 18							
<b>Dates</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018</b>							
Contract Dates		Mar 2016		Mar 2017		Mar 2018							
Delivery Dates		Sep 2017		Sep 2018		Sep 2019							
Manufacturer Name: TBD (Competitive Procurement)						Manufacturer Location: TBD (Competitive Procurement)							
Administrative Leadtime (in Months): 3						Production Leadtime (in Months): 18							
<b>Dates</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018</b>							
Contract Dates													
Delivery Dates													
<b>Installation Information</b>													
<b>Method of Implementation:</b> AIT and SHIPYARD:: Installation Name: AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE													
<b>Installation Cost</b>		<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>	
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)	
Prior Years		23 / 114.889		3 / 14.882		2 / 8.624		- / -		- / -		- / -	
FY 2016		- / -		- / -		0 / 2.215		2 / 10.982		0 / 0.000		2 / 10.982	
FY 2017		- / -		- / -		- / -		0 / 1.127		0 / 0.000		0 / 1.127	
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -	
Total		23 / 114.889		3 / 14.882		2 / 10.839		2 / 12.109		0 / 0.000		2 / 12.109	
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	23	-	1	1	1	-	1	1	-	-	1	1	-
Out	23	-	-	1	1	1	-	1	1	-	-	1	1
<b>Footnotes:</b>													
<sup>(7)</sup> AN/SQQ-89A(V)15 production shipset delivery time is 18 months after contract award. Each subsequent system procured in an FY is delivered one month later than the previous system. Delivery of equipment to the shipyard is preferably no later than 30-90 days prior to a CONUS (Continental U.S.) installation start date and no later than 120 days prior to a non-CONUS installation start date. Installations are assigned to specific ships as per Fleet priorities/requirements, and based on ship availabilities, as identified in the Fleet Modernization Program Management Information System (FMPMIS). Significant													

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 2	<b>P-1 Line Item Number / Title:</b> 2136 / AN/SQQ-89 Surf ASW Cmbt Sys	<b>Modification Number / Title:</b> 1 / AN/SQQ-89A(V)15 - DDG79-112 FLT IIA UPGRADE
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :		<b>MDAP/MAIS Code:</b>
<p>maintenance availability periods to support a major upgrade such as the AN/SQQ-89A(V)15 normally occur only once every two years in a ship's schedule. Note: FY 2018 and follow AN/SQQ-89A(V)15 installation unit cost increases since the President's Budget 2017 submit reflect projections for when the shipyards transition from Multi-Ship/Multi-Option (MS/MO) to a Firm-Fixed Price (FFP) contracting strategy, as directed by the Fleet Forces Command Naval Message, dated March FY 2016.</p>		

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 2			<b>P-1 Line Item Number / Title:</b> 2136 / AN/SQQ-89 Surf ASW Cmbt Sys		<b>Modification Number / Title:</b> 2 / AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	0.000	18.905	11.720	10.068	0.000	10.068
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	0.000	18.905	11.720	10.068	0.000	10.068
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
<b>Total Obligation Authority</b> <i>(\$ in Millions)</i>	<b>0.000</b>	<b>18.905</b>	<b>11.720</b>	<b>10.068</b>	<b>0.000</b>	<b>10.068</b>
<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>	-	-	-	-	-	-
<p><b>Description:</b> [AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE] See the following:</p> <p>YEAR TO YEAR FUNDING PROFILE FROM PROCUREMENT TO INSTALL:  1st Year - Procurement of Equipment  2nd Year - Ordering of incidental installation material and perform mandatory planning yard design tasks and ship checks. This is shown as a quantity of "0" with requested funds in the year before the installation of equipment.  3rd Year - Installation of Equipment</p> <p>AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE - COST CODE DB400 PROCUREMENT: Procurement of AN/SQQ-89A(V)15 equipment for subsequent backfit installation on select DDG51-78 FLT I/II ships. An average, aggregate AN/SQQ-89A(V)15 unit cost is indicated, however, it should be noted that this cost is comprised of multiple contract/funding vehicles. Additionally, the subdivision of these unit costs to a specific ship can vary as they are dependent on the pre-existing configuration of each ship. NOTE: Procurement of an AN/SQQ-89A(V)15 for DDG51 Class FLT I/II ships does not require the OK-410 Handling &amp; Stowage Group (H&amp;SG) subsystem as needed with DDG51 Class FLT IIA ships.</p> <p>AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE - COST CODE DB6IN INSTALLATION: Funding is for the full-up physical installation of the major AN/SQQ-89A(V)15 upgrade, the ordering of incidental installation material in the year prior to the actual installation, and Design Services Allocation (DSA) required for mandatory planning yard design tasks and ship checks that must be completed within the one year period leading up to the actual installation in the shipyard.</p> <p>Note: FY 2018 and follow AN/SQQ-89A(V)15 installation unit cost increases since the President's Budget 2017 submit reflect projections for when the shipyards transition from Multi-Ship/Multi-Option (MS/MO) to a Firm-Fixed Price (FFP) contracting strategy, as directed by the Fleet Forces Command Naval Message, dated March FY 2016.</p> <p>The AN/SQQ-89A(V)15 requires a CNO (Chief of Naval Operations) availability period. The installation is accomplished by Alteration Installation Team (AIT) and shipyard personnel together. The AIT personnel are responsible for the removal of all AN/SQQ-89(V) legacy equipment, addition and modification of foundations, and installation, connectorization, and test of all new AN/SQQ-89A(V)15 equipment. The shipyard personnel are responsible for all rigging activities and hull access cuts.</p> <p>AN/SQQ-89A(V)15 production shipset delivery time is 18 months after contract award. Each subsequent system procured in an FY is delivered one month later than the previous system. Delivery of equipment to the shipyard is preferably no later than 30-90 days prior to a CONUS (Continental U.S.) installation start date and no later than 120 days prior to a non-CONUS installation start date. Installations are assigned</p>						

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 2	<b>P-1 Line Item Number / Title:</b> 2136 / AN/SQQ-89 Surf ASW Cmbt Sys	<b>Modification Number / Title:</b> 2 / AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :		<b>MDAP/MAIS Code:</b>
to specific ships as per Fleet priorities/requirements, and based on ship availabilities, as identified in the Fleet Modernization Program Management Information System (FMPMIS). Significant maintenance availability periods to support a major upgrade such as the AN/SQQ-89A(V)15 normally occur only once every two years in a ship's schedule.		

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy						<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 2			<b>P-1 Line Item Number / Title:</b> 2136 / AN/SQQ-89 Surf ASW Cmbt Sys			<b>Modification Number / Title:</b> 2 / AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :					<b>MDAP/MAIS Code:</b>		
<b>Models of Systems Affected:</b> Upgrade of legacy AN/SQQ-89(V) systems on select DDG51-78 ships to AN/SQQ-89A(V)15 configuration			<b>Modification Type:</b> Warfighting Capability		<b>Related RDT&amp;E PEs:</b> 0205620N		
<b>Financial Plan</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
<b>Procurement</b>							
<b>Modification Item 1 of 1:</b> AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE							
B Kits							
Recurring							
1.1.1) AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE - NonOrganic <sup>(8)</sup>	- / -	2 / 18.905	1 / 9.515	- / -	- / -	align="right">- / -	
<b>Subtotal: Recurring</b>	<b>- / 0.000</b>	<b>- / 18.905</b>	<b>- / 9.515</b>	<b>- / -</b>	<b>- / -</b>	<b>- / -</b>	
<b>Subtotal: AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE</b>	<b>- / -</b>	<b>2 / 18.905</b>	<b>1 / 9.515</b>	<b>- / -</b>	<b>- / -</b>	<b>- / -</b>	
<b>Subtotal: Procurement, All Modification Items</b>	<b>- / 0.000</b>	<b>- / 18.905</b>	<b>- / 9.515</b>	<b>- / -</b>	<b>- / -</b>	<b>- / -</b>	
<b>Installation</b>							
<b>Modification Item 1 of 1:</b> AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE	- / 0.000	- / 0.000	- / 2.205	- / 10.068	- / 0.000	align="right">- / 10.068	
<b>Subtotal: Installation</b>	<b>- / 0.000</b>	<b>- / -</b>	<b>- / 2.205</b>	<b>- / 10.068</b>	<b>- / -</b>	<b>- / 10.068</b>	
<b>Total</b>							
<b>Total Cost (Procurement + Support + Installation)</b>	<b>0.000</b>	<b>18.905</b>	<b>11.720</b>	<b>10.068</b>	<b>0.000</b>	<b>10.068</b>	

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy						<b>Date:</b> May 2017							
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 2				<b>P-1 Line Item Number / Title:</b> 2136 / AN/SQQ-89 Surf ASW Cmbt Sys				<b>Modification Number / Title:</b> 2 / AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :						<b>MDAP/MAIS Code:</b>							
<b>Modification Item 1 of 1:</b> AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE													
<b>Manufacturer Information</b>													
Manufacturer Name: Lockheed Martin						Manufacturer Location: Manassas, VA							
Administrative Leadtime (in Months): 3						Production Leadtime (in Months): 18							
<b>Dates</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018</b>							
Contract Dates		Mar 2016		Mar 2017									
Delivery Dates		Sep 2017		Sep 2018									
Manufacturer Name: TBD (Competitive Procurement)						Manufacturer Location: TBD (Competitive Procurement)							
Administrative Leadtime (in Months): 3						Production Leadtime (in Months): 18							
<b>Dates</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018</b>							
Contract Dates													
Delivery Dates													
<b>Installation Information</b>													
<b>Method of Implementation:</b> AIT and SHIPYARD:: Installation Name: AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE													
<b>Installation Cost</b>		<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>	
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total 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 2016		- / -		- / -		0 / 2.205		2 / 8.946		0 / 0.000		2 / 8.946	
FY 2017		- / -		- / -		- / -		0 / 1.122		0 / 0.000		0 / 1.122	
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -	
Total		- / -		- / -		0 / 2.205		2 / 10.068		0 / 0.000		2 / 10.068	
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	-	-	-	-	-	-	-	-	-	-	1	1	-
Out	-	-	-	-	-	-	-	-	-	-	-	1	1
<b>Footnotes:</b>													
(8) AN/SQQ-89A(V)15 production shipset delivery time is 18 months after contract award. Each subsequent system procured in an FY is delivered one month later than the previous system. Delivery of equipment to the shipyard is preferably no later than 30-90 days prior to a CONUS (Continental U.S.) installation start date and no later than 120 days prior to a non-CONUS installation start date. Installations are assigned to specific ships as per Fleet priorities/requirements, and based on ship availabilities, as identified in the Fleet Modernization Program Management Information System (FMPMIS). Significant													

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 2	<b>P-1 Line Item Number / Title:</b> 2136 / AN/SQQ-89 Surf ASW Cmbt Sys	<b>Modification Number / Title:</b> 2 / AN/SQQ-89A(V)15 - DDG51-78 (SELECT) FLT I/II UPGRADE
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :		<b>MDAP/MAIS Code:</b>
maintenance availability periods to support a major upgrade such as the AN/SQQ-89A(V)15 normally occur only once every two years in a ship's schedule. Note: FY 2018 and follow AN/SQQ-89A(V)15 installation unit cost increases since the President's Budget 2017 submit reflect projections for when the shipyards transition from Multi-Ship/Multi-Option (MS/MO) to a Firm-Fixed Price (FFP) contracting strategy, as directed by the Fleet Forces Command Naval Message, dated March FY 2016.		

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 2			<b>P-1 Line Item Number / Title:</b> 2136 / AN/SQQ-89 Surf ASW Cmbt Sys		<b>Modification Number / Title:</b> 3 / AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	16.177	7.482	13.255	16.205	0.000	16.205
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	16.177	7.482	13.255	16.205	0.000	16.205
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
<b>Total Obligation Authority</b> <i>(\$ in Millions)</i>	<b>16.177</b>	<b>7.482</b>	<b>13.255</b>	<b>16.205</b>	<b>0.000</b>	<b>16.205</b>
<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>	-	-	-	-	-	-
<p><b>Description:</b>  [AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE] See the following:</p> <p>YEAR TO YEAR FUNDING PROFILE FROM PROCUREMENT TO INSTALL:  1st Year - Procurement of Equipment  2nd Year - Ordering of incidental installation material and perform mandatory planning yard design tasks and ship checks. This is shown as a quantity of "0" with requested funds in the year before the installation of equipment.  3rd Year - Installation of Equipment</p> <p>AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE - COST CODE DB400 PROCUREMENT: Procurement of a subset of AN/SQQ-89A(V)15 equipment, specifically the Multi-Function Towed Array (MFTA) and Handling &amp; Stowage Group (H&amp;SG), for subsequent installation on all DDG113 and follow ships during their Post Delivery Availability (PDA) or Post Shakedown Availability (PSA) periods, to upgrade the ASW sonar suite from an AN/SQQ-89(V)15 configuration to the AN/SQQ-89A(V)15 configuration.</p> <p>AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE - COST CODE DB6IN INSTALLATION: Physical installation of the H&amp;SG and MFTA on DDG113 and follow ships during their PDA or PSA period which includes the installation of an egress, under-deck stiffeners, cables, bulkheads, opening and closing of the transom, the winch, levelwind, fairlead and control station, decking, painting, and final system testing, the ordering of incidental installation material in the year prior to the actual installation, and Design Services Allocation (DSA) required for mandatory planning yard design tasks and ship checks that must be completed within the one year period leading up to the actual installation in the shipyard.</p> <p>Note: FY 2018 and follow AN/SQQ-89A(V)15 installation unit cost increases since the President's Budget 2017 submit reflect projections for when the shipyards transition from Multi-Ship/Multi-Option (MS/MO) to a Firm-Fixed Price (FFP) contracting strategy, as directed by the Fleet Forces Command Naval Message, dated March FY 2016.</p>						



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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy						<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 2			<b>P-1 Line Item Number / Title:</b> 2136 / AN/SQQ-89 Surf ASW Cmbt Sys			<b>Modification Number / Title:</b> 3 / AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :					<b>MDAP/MAIS Code:</b>		
<b>Models of Systems Affected:</b> Upgrade of in-line AN/SQQ-89(V)15 on all DDG113 and follow ships to AN/SQQ-89A(V)15 configuration			<b>Modification Type:</b> Warfighting Capability			<b>Related RDT&amp;E PEs:</b> 0205620N	
<b>Financial Plan</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
<b>Procurement</b>							
<b>Modification Item 1 of 1:</b> AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE							
B Kits							
Recurring							
1.1.1) AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE - NonOrganic <sup>(9)</sup>	3 / 16.177	1 / 5.285	2 / 11.014	2 / 11.157	- / -	2 / 11.157	
<b>Subtotal: Recurring</b>	- / 16.177	- / 5.285	- / 11.014	- / 11.157	- / -	- / 11.157	
<b>Subtotal: AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE</b>	3 / 16.177	1 / 5.285	2 / 11.014	2 / 11.157	- / -	2 / 11.157	
<b>Subtotal: Procurement, All Modification Items</b>	- / 16.177	- / 5.285	- / 11.014	- / 11.157	- / -	- / 11.157	
<b>Installation</b>							
<b>Modification Item 1 of 1:</b> AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE	- / 0.000	- / 2.197	- / 2.241	- / 5.048	- / 0.000	- / 5.048	
<b>Subtotal: Installation</b>	- / 0.000	- / 2.197	- / 2.241	- / 5.048	- / -	- / 5.048	
<b>Total</b>							
<b>Total Cost (Procurement + Support + Installation)</b>	<b>16.177</b>	<b>7.482</b>	<b>13.255</b>	<b>16.205</b>	<b>0.000</b>	<b>16.205</b>	

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy						<b>Date:</b> May 2017							
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 2				<b>P-1 Line Item Number / Title:</b> 2136 / AN/SQQ-89 Surf ASW Cmbt Sys				<b>Modification Number / Title:</b> 3 / AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :						<b>MDAP/MAIS Code:</b>							
<b>Modification Item 1 of 1:</b> AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE													
<b>Manufacturer Information</b>													
Manufacturer Name: Lockheed Martin						Manufacturer Location: Syracuse, NY							
Administrative Leadtime (in Months): 3						Production Leadtime (in Months): 18							
<b>Dates</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018</b>							
Contract Dates		Mar 2016		Mar 2017		Mar 2018							
Delivery Dates		Sep 2017		Sep 2018		Sep 2019							
Manufacturer Name: TBD (Competitive Procurement)						Manufacturer Location: TBD (Competitive Procurement)							
Administrative Leadtime (in Months): 3						Production Leadtime (in Months): 18							
<b>Dates</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018</b>							
Contract Dates													
Delivery Dates													
<b>Installation Information</b>													
<b>Method of Implementation:</b> AIT and SHIPYARD:: Installation Name: AN/SQQ-89A(V)15 - DDG113 AND FOLLOW MFTA/HANDLER UPGRADE													
<b>Installation Cost</b>		<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>	
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total 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 / 2.197		1 / 2.026		1 / 2.305		0 / 0.000		1 / 2.305	
FY 2016		- / -		- / -		0 / 0.215		1 / 2.305		0 / 0.000		1 / 2.305	
FY 2017		- / -		- / -		- / -		0 / 0.438		0 / 0.000		0 / 0.438	
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -	
Total		- / -		1 / 2.197		1 / 2.241		2 / 5.048		0 / 0.000		2 / 5.048	
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	-	-	-	-	1	-	1	-	-	-	2	-	-
Out	-	-	-	-	1	-	1	-	-	-	2	-	-
<b>Footnotes:</b> (9) Note: FY 2018 and follow AN/SQQ-89A(V)15 installation unit cost increases since the President's Budget 2017 submit reflect projections for when the shipyards transition from Multi-Ship/Multi-Option (MS/MO) to a Firm-Fixed Price (FFP) contracting strategy, as directed by the Fleet Forces Command Naval Message, dated March FY 2016.													

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 2			<b>P-1 Line Item Number / Title:</b> 2136 / AN/SQQ-89 Surf ASW Cmbt Sys		<b>Modification Number / Title:</b> 4 / AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH		
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>			
<b>Resource Summary</b>		<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
Procurement Quantity <i>(Units in Each)</i>		-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>		21.962	18.580	21.235	23.398	0.000	23.398
Less PY Advance Procurement <i>(\$ in Millions)</i>		-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>		21.962	18.580	21.235	23.398	0.000	23.398
Plus CY Advance Procurement <i>(\$ in Millions)</i>		-	-	-	-	-	-
<b>Total Obligation Authority</b> <i>(\$ in Millions)</i>		<b>21.962</b>	<b>18.580</b>	<b>21.235</b>	<b>23.398</b>	<b>0.000</b>	<b>23.398</b>
<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>		-	-	-	-	-	-
<p><b>Description:</b>  [AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH] See the following:</p> <p>YEAR TO YEAR FUNDING PROFILE FROM PROCUREMENT TO INSTALL:  1st Year - Procurement of Equipment  2nd Year - Ordering of incidental installation material and perform mandatory planning yard design tasks and ship checks. This is shown as a quantity of "0" with requested funds in the year before the installation of equipment.  3rd Year - Installation of Equipment</p> <p>AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH - COST CODE DB400 PROCUREMENT: Leveraging the submarine community's Acoustic Rapid Commercial-off-the-Shelf (COTS) Insertion (ARCI) process, the AN/SQQ-89A(V)15 Tech Refresh program procures upgraded software/hardware technology for all CG47/DDG51 Class surface combatant platforms with a previously fielded AN/SQQ-89A(V)15. This process has proven to manage obsolescence, take advantage of commercial development efforts, and continue to pace the threat to ensure systems remain effective well into the 21st century. Studies of the submarine and surface ASW technology show that system upgrades are most critical 6-9 years after initial installation of the AN/SQQ-89A(V)15, as failure rates within this period begin to rise. Establishing a stable technology refresh program will ensure the Fleet maintains critical Undersea Warfare capability (threat-pacing improvements) and productivity (Increased Operational Availability (Ao)) while reducing the Total Ownership Cost (TOC) to the Navy.</p> <p>AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH - COST CODE DB6IN INSTALLATION: Funding is for the physical installation of the AN/SQQ-89A(V)15 Technology Refresh upgrade, the ordering of incidental installation material in the year prior to the actual installation, and Design Services Allocation (DSA) required for mandatory planning yard design tasks and ship checks that must be completed within the one year period leading up to the actual installation in the shipyard.</p> <p>Note 1: FY 2018 and follow AN/SQQ-89A(V)15 installation unit cost increases since the President's Budget 2017 submit reflect projections for when the shipyards transition from Multi-Ship/Multi-Option (MS/MO) to a Firm-Fixed Price (FFP) contracting strategy, as directed by the Fleet Forces Command Naval Message, dated March FY 2016.</p> <p>Note 2: AN/SQQ-89A(V)15 Technology Insertion/Refresh shipset buys were reduced by 1 in FY 2018 and 2 in FY 2019, in order for the program to fund a major Engineering Change (EC) to the Multi-Function Towed Array (MFTA), which is critically required to address and resolve deficiencies in the current MFTA TB-37 version's reliability (by changing from a Towed Array Integrated Product Team (TAIPT) telemetry to a more reliable telemetry), as well as address and resolve parts obsolescence issues.</p>							

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy						<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 2			<b>P-1 Line Item Number / Title:</b> 2136 / AN/SQQ-89 Surf ASW Cmbt Sys			<b>Modification Number / Title:</b> 4 / AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :					<b>MDAP/MAIS Code:</b>		
<b>Models of Systems Affected:</b> Technology refresh of previously fielded AN/SQQ-89A(V)15 USW Combat Systems			<b>Modification Type:</b> Warfighting Capability			<b>Related RDT&amp;E PEs:</b> 0205620N	
<b>Financial Plan</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
<b>Procurement</b>							
<b>Modification Item 1 of 1:</b> AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH							
B Kits							
Recurring							
1.1.1) AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH - NonOrganic <sup>(10)</sup>	5 / 21.508	3 / 13.388	3 / 13.628	3 / 13.874	- / -	3 / 13.874	
<b>Subtotal: Recurring</b>	- / 21.508	- / 13.388	- / 13.628	- / 13.874	- / -	- / 13.874	
<b>Subtotal: AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH</b>	5 / 21.508	3 / 13.388	3 / 13.628	3 / 13.874	- / -	3 / 13.874	
<b>Subtotal: Procurement, All Modification Items</b>	- / 21.508	- / 13.388	- / 13.628	- / 13.874	- / -	- / 13.874	
<b>Installation</b>							
<b>Modification Item 1 of 1:</b> AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH							
<b>Subtotal: Installation</b>	- / 0.454	- / 5.192	- / 7.607	- / 9.524	- / 0.000	- / 9.524	
<b>Total</b>							
<b>Total Cost (Procurement + Support + Installation)</b>	<b>21.962</b>	<b>18.580</b>	<b>21.235</b>	<b>23.398</b>	<b>0.000</b>	<b>23.398</b>	

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy						<b>Date:</b> May 2017							
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 2				<b>P-1 Line Item Number / Title:</b> 2136 / AN/SQQ-89 Surf ASW Cmbt Sys				<b>Modification Number / Title:</b> 4 / AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :								<b>MDAP/MAIS Code:</b>					
<b>Modification Item 1 of 1:</b> AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH													
<b>Manufacturer Information</b>													
Manufacturer Name: Lockheed Martin						Manufacturer Location: Manassas, VA							
Administrative Leadtime <i>(in Months)</i> : 3						Production Leadtime <i>(in Months)</i> : 17							
<b>Dates</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018</b>							
Contract Dates		Mar 2016		Mar 2017		Mar 2018							
Delivery Dates		Aug 2017		Aug 2018		Aug 2019							
Manufacturer Name: TBD (Competitive Procurement)						Manufacturer Location: TBD (Competitive Procurement)							
Administrative Leadtime <i>(in Months)</i> : 3						Production Leadtime <i>(in Months)</i> : 17							
<b>Dates</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018</b>							
Contract Dates													
Delivery Dates													
<b>Installation Information</b>													
<b>Method of Implementation:</b> AIT:: Installation Name: AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH													
<b>Installation Cost</b>		<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>	
		Qty <i>(Each)</i> / Total Cost (\$ M)		Qty <i>(Each)</i> / Total Cost (\$ M)		Qty <i>(Each)</i> / Total Cost (\$ M)		Qty <i>(Each)</i> / Total Cost (\$ M)		Qty <i>(Each)</i> / Total Cost (\$ M)		Qty <i>(Each)</i> / Total Cost (\$ M)	
Prior Years		0 / 0.454		2 / 5.192		3 / 6.963		- / -		- / -		- / -	
FY 2016		- / -		- / -		0 / 0.644		3 / 8.869		0 / 0.000		3 / 8.869	
FY 2017		- / -		- / -		- / -		0 / 0.655		0 / 0.000		0 / 0.655	
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -	
Total		0 / 0.454		2 / 5.192		3 / 7.607		3 / 9.524		0 / 0.000		3 / 9.524	
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	-	-	1	1	-	-	-	2	1	-	2	1	-
Out	-	-	1	1	-	-	-	2	1	-	2	1	-
<b>Footnotes:</b>													
<sup>(10)</sup> Note 1: FY 2018 and follow AN/SQQ-89A(V)15 installation unit cost increases since the President's Budget 2017 submit reflect projections for when the shipyards transition from Multi-Ship/Multi-Option (MS/MO) to a Firm-Fixed Price (FFP) contracting strategy, as directed by the Fleet Forces Command Naval Message, dated March FY 2016. Note 2: AN/SQQ-89A(V)15 Technology Insertion/Refresh shipset buys were reduced by 1 in FY 2018 and 2 in FY 2019, in order for the program to fund a major Engineering Change (EC) to the Multi-Function Towed Array (MFTA), which is critically required to address and													

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 2	<b>P-1 Line Item Number / Title:</b> 2136 / AN/SQQ-89 Surf ASW Cmbt Sys	<b>Modification Number / Title:</b> 4 / AN/SQQ-89A(V)15 - TECHNOLOGY INSERTION/REFRESH
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :		<b>MDAP/MAIS Code:</b>
resolve deficiencies in the current MFTA TB-37 version's reliability (by changing from a Towed Array Integrated Product Team (TAIPT) telemetry to a more reliable telemetry), as well as address and resolve parts obsolescence issues.		

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy								Date: May 2017				
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars						P-1 Line Item Number / Title: 2147 / SSN Acoustics						
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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	1,324.130	232.134	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	1,556.264
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	1,324.130	232.134	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	1,556.264
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	1,324.130	232.134	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	1,556.264
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	15.391	-	-	-	-	-	-	-	-	-	15.391
Flyaway Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Description:												
*Note - In FY17 and out, BLI's 2147 and 2181 have been consolidated into BLI 2150. BLI 2147 reflects the FY16 procurements (costs and quantities) for the associated FY17 installations shown in the BLI 2150 exhibit.												
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program procures submarine systems and equipment for installation on all classes of submarines to maintain clear acoustical, tactical, and operational superiority over submarine and surface combatants in all scenarios through detection, classification, localization, and contact following. All future acoustic upgrades of Acoustic Rapid COTS Insertion (A-RCI) equipment are incorporated into this budget item. Future procurements, detailed below, are focused on supporting Littoral Warfare, Regional Sea Denial, Strike Group Support, Diesel Submarine Detection, Surveillance, and Peacetime Engagement. A-RCI is a multi-phased, evolutionary development effort geared toward addressing acoustic superiority issues through the rapid introduction of interim products applicable to SSN 688, 688I Flight, SSN21, SSGN, VA Class, and SSBN 726 Class Submarines. A-RCI Phase II provided towed array processing improvements; A-RCI Phase III provides spherical array processing improvements, and A-RCI Phase IV provides AN/BSY-1 High Frequency Upgrades for SSN 688I, SSGN, and Seawolf Classes. As part of Navy's plan to maintain acoustic superiority for in-service submarines, reduce obsolescence, and provide increased capability, the A-RCI program will modernize and sustain approximately 8-12 SSNs and 2-3 SSBNs per year through executing bi-annual software Advanced Processing Builds (APBs) and bi-annual hardware Technical Insertions (TIs).												
Towed system procurements of TB-29X and TB-34X provide reliability improvements to maintain acoustic superiority, increase the service life, reduce failures, and maintain the inventory of arrays available for fleet use. Towed Array Refurbishment & Reliability Upgrades sustain current in-service TB-16/34 fat line and TB-23/29A thin line towed arrays. Towed System procurements provide upgrade/support for OK-276, OK-634, OK-542 and OA-9070 Series Towed Array Handlers installed on SSN688, SSN 688I, SSN21, SSGN, VA Class, and SSBN 726 Class Submarines.												
Procurement of Low Cost Conformal Array (LCCA) provides enhanced situational awareness and collision avoidance capability in high contact density environments experienced in the littorals. Procurement of VA Unique Sensors sustains unique hull sensor systems for the VA platforms under the Critical Transducer Program as VA Class submarines transition into fleet service.												
Installation funds are for actual hardware installations during shipyard and pier-side availabilities. Procurements support a 12-15 month lead time for installations.												
[P40A / SA102 TOWED SYSTEMS]: Procures TB-34X Fatline and TB-29X Thinline Arrays to provide increase acoustic capability and reliability to the fleet. The program supports N8's response to the Fleet Forces Command's Urgent Operational Needs Statement message (dated 15 June 2009) which requests that a reliable Thinline Towed Array is critically needed to support submarine operations in the												

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars		<b>P-1 Line Item Number / Title:</b> 2147 / SSN Acoustics
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): B	<b>Program Elements for Code B Items:</b> N/A	<b>Other Related Program Elements:</b> N/A
<b>Line Item MDAP/MAIS Code:</b> N/A		
<p>Western Pacific Area of Operations, refurbishment/upgrades reliability improvements to TB-16 series, TB-23, TB-29A to maintain in-service Towed Array inventory and increased array availability. Reliability improvements include new telemetry, hose material, improved internal connectors, hydrophones, tow cables, and Vibration Isolation Modules (VIMS), and Heading Sensors.</p> <p>[P40A / SA105 SONAR SUPPORT EQUIPMENT]: Funds provided to procure BQN-17(A) and associated equipment.</p> <p>[P40A / SA106 HULL SENSORS]: Procurement of Low Cost Conformal Array (LCCA) provides enhanced situational awareness and collision avoidance capability, and VA Unique Sensors required to sustain unique hull sensor systems for the VA platforms under the Critical Transducer Program.</p> <p>[P40A / SA201 BLOCK CHANGES]: Minor Engineering Change Proposals (ECP's) and hardware changes affecting all classes of submarines are procured through this line. Funding will be used to support non-recurring first article test efforts associated with the changing COTS environment as well as Reliability, Maintainability, and Availability modifications requested by the Fleet. This line also supports the procurement of hardware necessary to implement the ECP's into the System or end item being procured.</p> <p>[P40A / SA202 PRODUCTION/ENGINEERING SUPPORT]: Funding supports the procurement of Acoustics Upgrades equipment and Towed System hardware.</p> <p>[P40A / SA203 TOWED ARRAY UNIQUE TEST EQUIPMENT]: Funding procures various towed array test equipment simulators and handling system/stowage tube inspection test equipment.</p> <p>[P40A / SA302 OP TRAINER UPGRADES]: Funding procures hardware upgrades and production engineering for Acoustic Upgrades operational trainer sites.</p> <p>[P40A / SA303 COTS SUPPORTABILITY UPGRADES]: Provides for Technology Refresh/Insertion for A-RCI kits. Tech Refresh provides for Software and Hardware updates to accommodate shifts in technology to the execution procurement years' "current state-of-the-practice" hardware. A-RCI has already undergone several technology insertion phases to accommodate integrating Advanced Processing Builds (APBs). Updates are necessary for signal and display processing hardware as APBs are introduced or as commercial support for the hardware is phased out. Tech Insertion procures the hardware necessary to upgrade and back fit the A-RCI kits. When A-RCI systems are being upgraded to subsequent phases of A-RCI, signal processing and display hardware will be procured from this line to accommodate common technology consistent with the APB being implemented in the year of introduction. In future years, requirements include additional equipment in technology insertion to prevent COTS hardware from becoming unsupportable/obsolete. Funding also supports the procurement and engineering for COTS Underwater Comms.</p> <p>[P40A / SA401 INITIAL TRAINING]: Provides for initial training curriculum development, training management materials, exercise control group development, pilot services, and services to the Fleet.</p> <p>[P40A / SA900 CONSULTING SERVICES]: Includes specification validation, contract deliverable monitoring, prime contractor monitoring for cost, schedule, and performance slips, ILS planning, and coordination of GFI. Additional support will include production planning, business case analysis, technical refresh and insertion planning and market analysis to review implementation strategies for procurement of current year "state of the practice" hardware in Acoustics programs. Consulting services will also provide production monitoring, installation planning and coordination support.</p>		



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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy									Date: May 2017			
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars							P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment					
ID Code (A=Service Ready, B=Not Service Ready): B			Program Elements for Code B Items: N/A					Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	0.000	0.000	288.265	287.553	43.500	331.053	309.028	381.340	457.061	508.078	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	0.000	0.000	288.265	287.553	43.500	331.053	309.028	381.340	457.061	508.078	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	0.000	0.000	288.265	287.553	43.500	331.053	309.028	381.340	457.061	508.078	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	8.178	22.381	-	22.381	23.469	22.722	19.994	17.659	Continuing	Continuing
Flyaway Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Description:												
*Note - In FY17 and out, BLI's 2147 and 2181 have been consolidated into BLI 2150. BLI 2147 reflects the FY16 procurements (costs and quantities) for the associated FY17 installations shown in this exhibit.												
MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program procures submarine systems and equipment for installation on all classes of submarines to maintain clear acoustical, tactical, and operational superiority over submarine and surface combatants in all scenarios through detection, classification, localization, and contact following. All future acoustic upgrades of Acoustic Rapid COTS Insertion (A-RCI) equipment are incorporated into this budget item. Future procurements, detailed below, are focused on supporting Littoral Warfare, Regional Sea Denial, Strike Group Support, Diesel Submarine Detection, Surveillance, and Peacetime Engagement. A-RCI is a multi-phased, evolutionary development effort geared toward addressing acoustic superiority issues through the rapid introduction of interim products applicable to SSN 688, 688I Flight, SSN21, SSGN, VA Class, and SSBN 726 Class Submarines. A-RCI Phase II provided towed array processing improvements; A-RCI Phase III provides spherical array processing improvements, and A-RCI Phase IV provides AN/BSY-1 High Frequency Upgrades for SSN 688I, SSGN, and Seawolf Classes. As part of Navy's plan to maintain acoustic superiority for in-service submarines, reduce obsolescence, and provide increased capability, the A-RCI program will modernize and sustain approximately 8-12 SSNs and 2-3 SSBNs per year through executing bi-annual software Advanced Processing Builds (APBs) and bi-annual hardware Technical Insertions (TIs).												
Towed system procurements of TB-29X and TB-34X provide reliability improvements to maintain acoustic superiority, increase the service life, reduce failures, and maintain the inventory of arrays available for fleet use. Towed Array Refurbishment & Reliability Upgrades sustain current in-service TB-16/34 fat line and TB-23/29A thin line towed arrays. Towed System procurements provide upgrade/support for OK-276, OK-634, OK-542 and OA-9070 Series Towed Array Handlers installed on SSN688, SSN 688I, SSN21, SSGN, VA Class, and SSBN 726 Class Submarines.												
Procurement of Low Cost Conformal Array (LCCA) provides enhanced situational awareness and collision avoidance capability in high contact density environments experienced in the littorals. Procurement of VA Unique Sensors sustains unique hull sensor systems for the VA platforms under the Critical Transducer Program as VA Class submarines transition into fleet service.												
Procurement of the OHIO Class Large Vertical Array (LVA) provides improved detection and enhanced tactical situational awareness capability for tracking targets of interest, and supports acoustic superiority objectives for the OHIO class submarines. SSBN systems will be approximately half the width of their SSN counterparts. This variance reflects the difference in mission, expected environment, and requirements.												

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars		P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>Procurement of the VIRGINIA Class Large Vertical Array (LVA) provides improved detection and enhanced tactical situational awareness capability for tracking targets of interest, and supports acoustic superiority objectives for the VIRGINIA class submarines. SSN systems will be approximately twice the width of their SSBN counterparts. This variance reflects the difference in mission, expected environment, and requirements.</p> <p>Procurement of the High Frequency Sail Array (HFSA) provides high frequency active and passive capability supporting ASW and ASUW for SSNs, and contact avoidance for SSNs and SSBNs. This capability enables close in situational awareness with high bearing accuracy. HFSA improves situational awareness and tactical control in high density contact areas, of particular importance for Pacific Fleet SSBNs based at Bangor WA inside the Puget Sound with three major commercial shipping ports.</p> <p>Procurement of hydrophones, transducers, cables, associated Out-Board Electronics bottles (OBE), and acoustic windows for In-Service Undersea Warfare Sonars on all classes of submarines are required to support units in the fleet on a replacement basis, at regularly scheduled ship overhauls, and at interim availabilities when units are defective, and for upgrades.</p> <p>Installation funds are for actual hardware installations during shipyard and pier-side availabilities. Procurements support a 12-24 month lead time for installations.</p> <p>[P40A / SA102 TOWED SYSTEMS]: Procures TB-34X Fatline and TB-29X Thinline Arrays to provide increase acoustic capability and reliability to the fleet. The program supports N8's response to the Fleet Forces Command's Urgent Operational Needs Statement message (dated 15 June 2009) which requests that a reliable Thinline Towed Array is critically needed to support submarine operations in the Western Pacific Area of Operations, refurbishment/upgrades reliability improvements to TB-16 series, TB-23, TB-29A to maintain in-service Towed Array inventory and increased array availability. Reliability improvements include new telemetry, hose material, improved internal connectors, hydrophones, tow cables, Vibration Isolation Modules (VIMS), and Heading Sensors.</p> <p>[P40A / SA105 SONAR SUPPORT EQUIPMENT]: Funds provided to procure BQN-17(A) and associated equipment.</p> <p>[P40A / SA106 HULL SENSORS]: Procurement of Low Cost Conformal Array (LCCA) provides enhanced situational awareness and collision avoidance capability, and VA Unique Sensors required to sustain unique hull sensor systems for the VA platforms under the Critical Transducer Program.</p> <p>[P40A / SA201 BLOCK CHANGES]: Minor Engineering Change Proposals (ECP's) and hardware changes affecting all classes of submarines are procured through this line. Funding will be used to support non-recurring first article test efforts associated with the changing COTS environment as well as Reliability, Maintainability, and Availability modifications requested by the Fleet. This line also supports the procurement of hardware necessary to implement the ECP's into the System or end item being procured.</p> <p>[P40A / SA202 PRODUCTION/ENGINEERING SUPPORT]: Funding supports the procurement of Acoustics Upgrades equipment, Towed Systems hardware, and Large Vertical Array equipment.</p> <p>[P40A / SA203 TOWED ARRAY UNIQUE TEST EQUIPMENT]: Funding procures various towed array test equipment simulators and handling system/stowage tube inspection test equipment.</p> <p>[P40A / SA302 OP TRAINER UPGRADES]: Funding procures hardware upgrades and production engineering for Acoustic Upgrades operational trainer sites.</p> <p>[P40A / SA303 COTS SUPPORTABILITY UPGRADES]: Provides for Technology Refresh/Insertion for A-RCI kits. Tech Refresh provides for Software and Hardware updates to accommodate shifts in technology to the execution procurement years' "current state-of-the-practice" hardware. A-RCI has already undergone several technology insertion phases to accommodate integrating Advanced Processing Builds (APBs). Updates are necessary for signal and display processing hardware as APBs are introduced or as commercial support for the hardware is phased out. Tech Insertion procures the hardware necessary to upgrade and back fit the A-RCI kits. When A-RCI systems are being upgraded to subsequent phases of A-RCI, signal processing and display hardware will be procured from this line to accommodate common technology consistent with the APB being implemented in the year of introduction. In future years, requirements include additional equipment in technology insertion to prevent COTS hardware from becoming unsupportable/obsolete. Funding also supports the procurement and engineering for COTS Underwater Comms.</p> <p>[P40A / SA401 INITIAL TRAINING]: Provides for initial training curriculum development, training management materials, exercise control group development, pilot services, and services to the Fleet.</p>		

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars		<b>P-1 Line Item Number / Title:</b> 2150 / SSN Acoustic Equipment
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): B	<b>Program Elements for Code B Items:</b> N/A	<b>Other Related Program Elements:</b> N/A
<b>Line Item MDAP/MAIS Code:</b> N/A		
<p>[P40A / SA900 CONSULTING SERVICES]: Includes specification validation, contract deliverable monitoring, prime contractor monitoring for cost, schedule, and performance slips, ILS planning, and coordination of GFI. Additional support will include production planning, business case analysis, technical refresh and insertion planning and market analysis to review implementation strategies for procurement of current year "state of the practice" hardware in Acoustics programs. Consulting services will also provide production monitoring, installation planning and coordination support.</p> <p>[P40A - 2 / PU100 SONAR SWITCHES AND TRANSDUCERS]: Included in this line are procurements of transducers, hydrophones, windows, cables, Out-Board Electronics (OBE), domes and their associated mounting hardware, and other support equipment and materials for the following Undersea Warfare Sonars: BSY-1, BSY-2, BQQ-5, BQQ-6, BQQ-10, BQG-5, BQS-15, BQS-14A, WQC-2, WLR-9/12, BQN-13, BQN-17, BQA-8, BQH-1 and BQS-25.</p> <p>[P40A - 2 / PU200 ENGINEERING CHANGES]: Funds ECPs, Value Engineering awards, and hardware changes affecting the SSN 688, 688I, SEAWOLF, SSBN 726 (TRIDENT), SSGN/SSBN, and VA Class submarines.</p> <p>[P40A - 2 / PU300 PROGRAM SUPPORT]: Supports the procurement of equipment of sonar hydrophones, transducers, cables, Out-Board Electronics (OBEs), and acoustic windows for In-Service Undersea Warfare Sonars.</p>		

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy								<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars						<b>P-1 Line Item Number / Title:</b> 2150 / SSN Acoustic Equipment				
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): B			<b>Program Elements for Code B Items:</b> N/A			<b>Other Related Program Elements:</b> N/A				
<b>Line Item MDAP/MAIS Code:</b> N/A										
Exhibits Schedule					Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	SSN Acoustics				- / 0.000	- / -	- / 135.585	- / 123.879	- / 43.500	- / 167.379
P-40a	Sonar Switches and Transducers				- / 0.000	- / -	- / 11.592	- / 12.012	- / -	- / 12.012
P-40a	SA101 ACOUSTIC UPGRADES SSN 21 LEGACY REPLACEMENT				- / 0.000	- / 0.000	- / 2.182	- / 0.000	- / 0.000	- / 0.000
P-40a	SA106 HIGH FREQUENCY SAIL ARRAY				- / 0.000	- / 0.000	- / 3.846	- / 6.117	- / 0.000	- / 6.117
P-40a	SA303 VIRGINIA CLASS TECHNICAL INSERTION W/CONVERSION KITS (SWFTS)				- / 0.000	- / 0.000	- / 16.957	- / 3.348	- / 0.000	- / 3.348
P-3a	2 / SA106 LOW COST CONFORMAL ARRAY KITS (SHIPALT)				- / 0.000	- / 0.000	- / 12.974	- / 13.234	- / 0.000	- / 13.234
P-3a	6 / SA303 688/688I TECHNOLOGY INSERTION KITS (SWFTS) (SHIPALT)				- / 0.000	- / 0.000	- / 13.274	- / 47.836	- / 0.000	- / 47.836
P-3a	8 / SA303 SSN 21 TECHNICAL INSERTION KITS (SWFTS) (SHIPALT)				- / 0.000	- / 0.000	- / 12.037	- / 12.278	- / 0.000	- / 12.278
P-3a	10 / SA303 VIRGINIA CLASS TECHNICAL INSERTION KITS (SWFTS) (SHIPALT)				- / 0.000	- / 0.000	- / 55.810	- / 40.182	- / 0.000	- / 40.182
P-3a	11 / SA303 SSBN TECHNICAL INSERTION CONVERSION (SWFTS) (SHIPALT)				- / 0.000	- / 0.000	- / 24.008	- / 28.667	- / 0.000	- / 28.667
<b>P-40</b>	<b>Total Gross/Weapon System Cost</b>				<b>- / 0.000</b>	<b>- / 0.000</b>	<b>- / 288.265</b>	<b>- / 287.553</b>	<b>- / 43.500</b>	<b>- / 331.053</b>
<p>*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.</p> <p>Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.</p>										
<p><b>Justification:</b> OCO: FY 2018 OCO funds procure additional TB-34X Fatline (7) and TB-29X Thinline (8) arrays in support of the United States European Command (USEUCOM) European Reassurance Initiative (ERI) Strategy and Prioritized Requirements. These arrays provide increased acoustic capability, readiness, and reliability to fleet operations in-theater.</p>										

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy															Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2								P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment							Aggregated Items Title: SSN Acoustics					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
1) SA102 TOWED SYSTEMS <sup>(1)</sup>																				
1.1) TB-34X FATLINE TOWED ARRAYS	B		-	-	-	-	-	-	1,248K	9	11.236	1,273K	5	6.367	1,273K	7	8.914	1,273K	12	15.281
1.2) TB-29X THIN LINE TOWED ARRAYS	B		-	-	-	-	-	-	4,200K	7	29.400	4,284K	4	17.136	4,284K	8	34.272	4,284K	12	51.408
1.3) TOWED ARRAY REFURBISHMENT & UPGRADES	A		-	-	-	-	-	-	-	-	29.219	-	-	33.334	-	-	0.314	-	-	33.648
1.4) TOWED ARRAY HANDLER SYSTEM UPGRADE	A		-	-	-	-	-	-	-	-	7.408	-	-	7.556	-	-	-	-	-	7.556
Subtotal: 1) SA102 TOWED SYSTEMS			-	-	0.000	-	-	-	-	-	77.263	-	-	64.393	-	-	43.500	-	-	107.893
2) SA105 SONAR SUPPORT EQUIPMENT																				
2.1) BQN-17	A		-	-	-	-	-	-	-	-	0.887	-	-	0.905	-	-	-	-	-	0.905
Subtotal: 2) SA105 SONAR SUPPORT EQUIPMENT			-	-	0.000	-	-	-	-	-	0.887	-	-	0.905	-	-	-	-	-	0.905
3) SA106 HULL SENSORS																				
3.1) VA UNIQUE SENSOR	A		-	-	-	-	-	-	-	-	5.405	-	-	5.513	-	-	-	-	-	5.513
Subtotal: 3) SA106 HULL SENSORS			-	-	0.000	-	-	-	-	-	5.405	-	-	5.513	-	-	-	-	-	5.513
4) SA201 BLOCK CHANGES																				
4.1) TOWED SYSTEMS ECP'S	A		-	-	-	-	-	-	-	-	1.701	-	-	1.735	-	-	-	-	-	1.735
4.2) ACOUSTICS	A		-	-	-	-	-	-	-	-	3.022	-	-	3.083	-	-	-	-	-	3.083
Subtotal: 4) SA201 BLOCK CHANGES			-	-	0.000	-	-	-	-	-	4.723	-	-	4.818	-	-	-	-	-	4.818
5) SA202 PRODUCTION/ENGINEERING SUPPORT																				
5.1) ACOUSTICS	A		-	-	-	-	-	-	-	-	3.168	-	-	3.231	-	-	-	-	-	3.231
5.2) TOWED ARRAYS/HANDLING EQUIPMENT	A		-	-	-	-	-	-	-	-	3.111	-	-	3.173	-	-	-	-	-	3.173
Subtotal: 5) SA202 PRODUCTION/ENGINEERING SUPPORT			-	-	0.000	-	-	-	-	-	6.279	-	-	6.404	-	-	-	-	-	6.404
6) SA203 TOWED ARRAY UNIQUE TEST EQUIPMENT																				
6.1) TOWED ARRAY UNIQUE TEST EQUIPMENT	A		-	-	-	-	-	-	-	-	1.259	-	-	1.284	-	-	-	-	-	1.284
Subtotal: 6) SA203 TOWED ARRAY UNIQUE TEST EQUIPMENT			-	-	0.000	-	-	-	-	-	1.259	-	-	1.284	-	-	-	-	-	1.284
7) SA302 OP TRAINER UPGRADES																				

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy															Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2						P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment									Aggregated Items Title: SSN Acoustics					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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) OP TRAINER GFE	A		-	-	-	-	-	-	-	-	1.112	-	-	1.134	-	-	-	-	-	1.134
Subtotal: 7) SA302 OP TRAINER UPGRADES			-	-	0.000	-	-	-	-	-	1.112	-	-	1.134	-	-	-	-	-	1.134
8) SA303 COTS SUPPORTABILITY UPGRADES																				
8.1) INSTALL SUPPORT	A		-	-	-	-	-	-	-	-	1.534	-	-	1.565	-	-	-	-	-	1.565
8.2) AEMP	A		-	-	-	-	-	-	-	-	5.559	-	-	5.670	-	-	-	-	-	5.670
8.3) COTS UWC ENGINEERING SUPPORT	A		-	-	-	-	-	-	-	-	1.764	-	-	1.799	-	-	-	-	-	1.799
8.4) COTS TECH INSERTION	A		-	-	-	-	-	-	-	-	19.521	-	-	19.911	-	-	-	-	-	19.911
8.5) SHIPYARD INSTALLATION INDUSTRIAL SUPPORT	A		-	-	-	-	-	-	-	-	5.713	-	-	5.827	-	-	-	-	-	5.827
Subtotal: 8) SA303 COTS SUPPORTABILITY UPGRADES			-	-	0.000	-	-	-	-	-	34.091	-	-	34.772	-	-	-	-	-	34.772
9) SA401 INITIAL TRAINING																				
9.1) ACOUSTICS	A		-	-	-	-	-	-	-	-	1.777	-	-	1.812	-	-	-	-	-	1.812
9.2) TOWED ARRAY	A		-	-	-	-	-	-	-	-	0.667	-	-	0.680	-	-	-	-	-	0.680
Subtotal: 9) SA401 INITIAL TRAINING			-	-	0.000	-	-	-	-	-	2.444	-	-	2.492	-	-	-	-	-	2.492
10) SA900 CONSULTING SERVICES																				
10.1) ACOUSTICS	A		-	-	-	-	-	-	-	-	1.419	-	-	1.447	-	-	-	-	-	1.447
10.2) TOWED SYSTEMS	A		-	-	-	-	-	-	-	-	0.703	-	-	0.717	-	-	-	-	-	0.717
Subtotal: 10) SA900 CONSULTING SERVICES			-	-	0.000	-	-	-	-	-	2.122	-	-	2.164	-	-	-	-	-	2.164
Total			-	-	0.000	-	-	-	-	-	135.585	-	-	123.879	-	-	43.500	-	-	167.379
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
Footnotes:																				
(1) Refurbishment & Upgrades are variable year-to-year based on projected Towed Array inventory requirements necessary to support submarine deployment schedules.																				

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

**Footnotes:**

<sup>(1)</sup> Refurbishment & Upgrades are variable year-to-year based on projected Towed Array inventory requirements necessary to support submarine deployment schedules.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy															Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2								P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment							Aggregated Items Title: Sonar Switches and Transducers					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
1) PU100 SONAR SWITCHES AND TRANSDUCERS <sup>(2)</sup>																				
1.1) TR-353	A		-	-	-	-	-	-	-	-	-	6,367.25	100	0.637	-	-	-	6,367.25	100	0.637
1.2) CW-1147 DOME	A		-	-	-	-	-	-	18,727.20	10	0.187	19,101.74	10	0.191	-	-	-	19,101.74	10	0.191
1.3) CW-1181E DOME	A		-	-	-	-	-	-	5,202.00	15	0.078	5,306.04	18	0.096	-	-	-	5,306.04	18	0.096
1.4) DT-574 100FT	A		-	-	-	-	-	-	2,080.80	100	0.208	2,122.42	100	0.212	-	-	-	2,122.42	100	0.212
1.5) MX-12309 SSGN HFSA WINDOW	A		-	-	-	-	-	-	-	-	-	188,213.00	1	0.188	-	-	-	188,213.00	1	0.188
1.6) CABLES	A		-	-	-	-	-	-	-	-	0.710	-	-	0.550	-	-	-	-	-	0.550
1.7) DT-574 50FT	A		-	-	-	-	-	-	572.70	300	0.172	584.15	300	0.175	-	-	-	584.15	300	0.175
1.8) CW-1181C	A		-	-	-	-	-	-	5,202.00	20	0.104	5,306.04	20	0.106	-	-	-	5,306.04	20	0.106
1.9) MX-10624 Window	A		-	-	-	-	-	-	13,941.36	10	0.139	14,220.19	10	0.142	-	-	-	14,220.19	10	0.142
1.10) DT-5740 LSA OBE	A		-	-	-	-	-	-	17,006.53	20	0.340	17,346.67	20	0.347	-	-	-	17,346.67	20	0.347
1.11) DT-511 Hydrophone	A		-	-	-	-	-	-	29,408.64	15	0.441	29,996.82	15	0.450	-	-	-	29,996.82	15	0.450
1.12) DT-592 Hydrophone	A		-	-	-	-	-	-	41,346.54	18	0.744	42,173.47	18	0.759	-	-	-	42,173.47	18	0.759
1.13) TR-233 Transducer	A		-	-	-	-	-	-	10,404.00	20	0.208	10,612.08	20	0.212	-	-	-	10,612.08	20	0.212
1.14) TR-282 Transducer	A		-	-	-	-	-	-	28,469.13	7	0.199	29,038.51	7	0.203	-	-	-	29,038.51	7	0.203
1.15) TR-302 Transducer	A		-	-	-	-	-	-	-	-	-	23,801.38	18	0.428	-	-	-	23,801.38	18	0.428
1.16) TR-302 Window	A		-	-	-	-	-	-	1,040.40	10	0.010	1,061.21	10	0.011	-	-	-	1,061.21	10	0.011
1.17) TR-321 Transducer	A		-	-	-	-	-	-	17,000.00	9	0.153	17,340.00	9	0.156	-	-	-	17,340.00	9	0.156
1.18) TR-321 V CTD	A		-	-	-	-	-	-	19,058.23	20	0.381	19,439.40	20	0.389	-	-	-	19,439.40	20	0.389
1.19) TR-338 Transducer	A		-	-	-	-	-	-	24,000.00	15	0.360	24,480.00	15	0.367	-	-	-	24,480.00	15	0.367
1.20) TR-341 Transducer	A		-	-	-	-	-	-	18,360.00	20	0.367	18,727.20	20	0.375	-	-	-	18,727.20	20	0.375
1.21) WAA OBE	A		-	-	-	-	-	-	12,484.80	50	0.624	12,734.50	50	0.637	-	-	-	12,734.50	50	0.637
1.22) NCC CONNECTORS	A		-	-	-	-	-	-	1,040.40	52	0.054	1,061.21	52	0.055	-	-	-	1,061.21	52	0.055
1.23) DT-699 HFSA RECEIVE	A		-	-	-	-	-	-	73,868.40	6	0.443	75,345.77	6	0.452	-	-	-	75,345.77	6	0.452
1.24) TR-364 HFSP XMIT	A		-	-	-	-	-	-	161,807.14	1	0.162	165,043.28	1	0.165	-	-	-	165,043.28	1	0.165
1.25) TR-317	A		-	-	-	-	-	-	-	-	-	4,244.83	650	2.759	-	-	-	4,244.83	650	2.759
1.26) TR-281	A		-	-	-	-	-	-	23,327.62	6	0.140	23,794.18	6	0.143	-	-	-	23,794.18	6	0.143

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<b>Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy</b>															<b>Date:</b> May 2017				
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 2								<b>P-1 Line Item Number / Title:</b> 2150 / SSN Acoustic Equipment							<b>Aggregated Items Title:</b> Sonar Switches and Transducers				

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
1.27) TR-302 Transducer First Article	A		-	-	-	-	-	-	150,000.00	2	0.300	-	-	-	-	-	-	-	-	-
1.28) TR-317 FIRST ARTICLE	A		-	-	-	-	-	-	81,640.00	20	1.633	-	-	-	-	-	-	-	-	-
1.29) TR-353 FIRST ARTICLE	A		-	-	-	-	-	-	81,640.00	20	1.633	-	-	-	-	-	-	-	-	-
1.30) DT-513 Hydrophone	A		-	-	-	-	-	-	4,373.17	82	0.359	4,460.63	75	0.335	-	-	-	4,460.63	75	0.335
1.31) DT-100 HFSA RECEIVE	A		-	-	-	-	-	-	78,030.00	2	0.156	79,590.60	2	0.159	-	-	-	79,590.60	2	0.159
<b>Subtotal: 1) PU100 SONAR SWITCHES AND TRANSDUCERS</b>			-	-	0.000	-	-	-	-	-	10.305	-	-	10.699	-	-	-	-	-	10.699
<b>2) PU200 ENGINEERING CHANGES</b>																				
2.1) ENGINEERING CHANGES	A		-	-	-	-	-	-	-	-	0.214	-	-	0.219	-	-	-	-	-	0.219
<b>Subtotal: 2) PU200 ENGINEERING CHANGES</b>			-	-	0.000	-	-	-	-	-	0.214	-	-	0.219	-	-	-	-	-	0.219
<b>3) PU300 PROGRAM SUPPORT</b>																				
3.1) PROGRAM SUPPORT	A		-	-	-	-	-	-	-	-	1.073	-	-	1.094	-	-	-	-	-	1.094
<b>Subtotal: 3) PU300 PROGRAM SUPPORT</b>			-	-	0.000	-	-	-	-	-	1.073	-	-	1.094	-	-	-	-	-	1.094
<b>Total</b>			-	-	0.000	-	-	-	-	-	11.592	-	-	12.012	-	-	-	-	-	12.012

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

**Footnotes:**

<sup>(2)</sup> Due to Fleet usage requirements to maintain submarines in an operational status, adjustments are made to quantities throughout the FYDP. Items not procured in a single year do not impact the production line.



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<b>Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy</b>															<b>Date:</b> May 2017				
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 2								<b>P-1 Line Item Number / Title:</b> 2150 / SSN Acoustic Equipment							<b>Aggregated Items Title:</b> SA101 ACOUSTIC UPGRADES SSN 21 LEGACY REPLACEMENT				

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring																				
SA101 ACOUSTIC UPGRADES SSN 21 LEGACY REPLACEMENT -- Installation	A		-	-	-	-	-	-	-	-	2.182	-	-	-	-	-	-	-	-	-
Subtotal: B Kits/Recurring			-	-	0.000	-	-	-	-	-	2.182	-	-	-	-	-	-	-	-	-
Total			-	-	0.000	-	-	0.000	-	-	2.182	-	-	0.000	-	-	0.000	-	-	0.000

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

**Remarks:**

Models of Systems Affected: SSN ACOUSTICS

Type Modification: SHIPALT

Funding supports Technology Insertion, HF Active Components, and Transmit Group.

Funding supports Technology Insertion, HF Active Components, and Transmit Group.

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<b>Exhibit P-40a, Budget Item Justification For Aggregated Items:</b> FY 2018 Navy																<b>Date:</b> May 2017				
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 2									<b>P-1 Line Item Number / Title:</b> 2150 / SSN Acoustic Equipment							<b>Aggregated Items Title:</b> SA106 HIGH FREQUENCY SAIL ARRAY				
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
<b>B Kits/Recurring</b>																				
SA106 HIGH FREQUENCY SAIL ARRAY -- Procurement	A		-	-	-	-	-	-	1,923K	2	3.846	1,961K	1	1.961	-	-	-	1,961K	1	1.961
SA106 HIGH FREQUENCY SAIL ARRAY -- Installation	A		-	-	-	-	-	-	-	-	-	-	-	4.156	-	-	-	-	-	4.156
<b>Subtotal: B Kits/Recurring</b>			-	-	0.000	-	-	-	-	-	3.846	-	-	6.117	-	-	-	-	-	6.117
<b>Total</b>			-	-	0.000	-	-	0.000	-	-	3.846	-	-	6.117	-	-	0.000	-	-	6.117

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

**Remarks:**  
The High Frequency Sail Array (HFSA) provides high frequency active and passive capability supporting ASW and ASUW for SSNs, and contact avoidance for SSNs and SSBNs.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy																Date: May 2017							
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 2									P-1 Line Item Number / Title: 2150 / SSN Acoustic Equipment									Aggregated Items Title: SA303 VIRGINIA CLASS TECHNICAL INSERTION W/CONVERSION KITS (SWFTS)					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)			
B Kits/Recurring																							
SA303 VIRGINIA CLASS TECHNICAL INSERTION W/ CONVERSION KITS (SWFTS) -- Procurement <sup>(3)</sup>	A		-	-	-	0.00	1	0.000	13,675K	1	13.675	-	-	-	-	-	-	-	-	-			
SA303 VIRGINIA CLASS TECHNICAL INSERTION W/ CONVERSION KITS (SWFTS) -- Installation	A		-	-	-	-	-	-	-	-	3.282	-	-	3.348	-	-	-	-	-	3.348			
Subtotal: B Kits/Recurring			-	-	0.000	-	-	-	-	-	16.957	-	-	3.348	-	-	-	-	-	3.348			
Total			-	-	0.000	-	-	0.000	-	-	16.957	-	-	3.348	-	-	0.000	-	-	3.348			
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																							
<b>Remarks:</b> Models of Systems Affected: SSN ACOUSTICS Type Modification: SHIPALT  Provides initial technology insertion upgrade for A-RCI installed systems on the VA Class, providing the latest and most current capability. Provides initial technology insertion upgrade for A-RCI installed systems on the VA Class, providing the latest and most current capability.																							
<b>Footnotes:</b> <sup>(3)</sup> Due to BLI 2147 and BLI 2181 merging into BLI 2150, FY16 procurements are reflected in the BLI 2147 exhibit with the associated FY17 installation reflected in this BLI 2150 exhibit.																							

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 2		<b>P-1 Line Item Number / Title:</b> 2150 / SSN Acoustic Equipment			<b>Modification Number / Title:</b> 2 / SA106 LOW COST CONFORMAL ARRAY KITS	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	0.000	0.000	12.974	13.234	0.000	13.234
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	0.000	0.000	12.974	13.234	0.000	13.234
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
<b>Total Obligation Authority</b> <i>(\$ in Millions)</i>	<b>0.000</b>	<b>0.000</b>	<b>12.974</b>	<b>13.234</b>	<b>0.000</b>	<b>13.234</b>
<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>	-	-	-	-	-	-
<b>Description:</b> Procurement of Low Cost Conformal Array (LCCA) to provide enhanced situational awareness and collision avoidance capability.						

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 2			<b>P-1 Line Item Number / Title:</b> 2150 / SSN Acoustic Equipment		<b>Modification Number / Title:</b> 2 / SA106 LOW COST CONFORMAL ARRAY KITS	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Models of Systems Affected:</b> SSN ACOUSTICS		<b>Modification Type:</b> SHIPALT			<b>Related RDT&amp;E PEs:</b>	
<b>Financial Plan</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
<b>Procurement</b>						
<b>Modification Item 1 of 1:</b> SA106 LOW COST CONFORMAL ARRAY KITS						
B Kits						
Recurring						
1.1.1) SA106 HULL SENSORS LOW COST CONFORMAL ARRAY KITS - NonOrganic <sup>(4)</sup>	- / -	2 / 0.000	2 / 9.437	2 / 9.626	- / -	2 / 9.626
<b>Subtotal: Recurring</b>	- / 0.000	- / -	- / 9.437	- / 9.626	- / -	- / 9.626
<b>Subtotal: SA106 LOW COST CONFORMAL ARRAY KITS</b>	- / -	2 / 0.000	2 / 9.437	2 / 9.626	- / -	2 / 9.626
<b>Subtotal: Procurement, All Modification Items</b>	- / 0.000	- / -	- / 9.437	- / 9.626	- / -	- / 9.626
<b>Installation</b>						
<b>Modification Item 1 of 1:</b> SA106 LOW COST CONFORMAL ARRAY KITS						
<b>Subtotal: Installation</b>	- / 0.000	- / -	- / 3.537	- / 3.608	- / 0.000	- / 3.608
<b>Total</b>						
<b>Total Cost (Procurement + Support + Installation)</b>	<b>0.000</b>	<b>0.000</b>	<b>12.974</b>	<b>13.234</b>	<b>0.000</b>	<b>13.234</b>

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy						<b>Date:</b> May 2017							
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 2				<b>P-1 Line Item Number / Title:</b> 2150 / SSN Acoustic Equipment				<b>Modification Number / Title:</b> 2 / SA106 LOW COST CONFORMAL ARRAY KITS					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :						<b>MDAP/MAIS Code:</b>							
<b>Modification Item 1 of 1:</b> SA106 LOW COST CONFORMAL ARRAY KITS													
<b>Manufacturer Information</b>													
Manufacturer Name: LOCKHEED MARTIN						Manufacturer Location: SYRACUSE, NY							
Administrative Leadtime <i>(in Months)</i> : 6						Production Leadtime <i>(in Months)</i> : 12							
<b>Dates</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018</b>							
Contract Dates		Apr 2016		Apr 2017		Apr 2018							
Delivery Dates		Apr 2017		Apr 2018		Apr 2019							
<b>Installation Information</b>													
<b>Method of Implementation:</b> SHIPALT:: Installation Name: SA106 HULL SENSORS LOW COST CONFORMAL ARRAY KITS													
<b>Installation Cost</b>		<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>	
		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		- / -		- / -		- / -		- / -		- / -		- / -	
FY 2016		- / -		- / -		2 / 3.537		- / -		- / -		- / -	
FY 2017		- / -		- / -		- / -		2 / 3.608		0 / 0.000		2 / 3.608	
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -	
Total		- / -		- / -		2 / 3.537		2 / 3.608		0 / 0.000		2 / 3.608	
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	-	-	-	-	-	-	-	2	-	-	-	2	-
Out	-	-	-	-	-	-	-	2	-	-	-	2	-
<b>Footnotes:</b>													
(4) Due to BLI 2147 and BLI 2181 merging into BLI 2150, FY16 procurements are reflected in the BLI 2147 exhibit with the associated FY17 installation reflected in this BLI 2150 exhibit.													

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 2		<b>P-1 Line Item Number / Title:</b> 2150 / SSN Acoustic Equipment			<b>Modification Number / Title:</b> 6 / SA303 688/688I TECHNOLOGY INSERTION KITS (SWFTS)	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	0.000	0.000	13.274	47.836	0.000	47.836
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	0.000	0.000	13.274	47.836	0.000	47.836
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
<b>Total Obligation Authority</b> <i>(\$ in Millions)</i>	<b>0.000</b>	<b>0.000</b>	<b>13.274</b>	<b>47.836</b>	<b>0.000</b>	<b>47.836</b>
<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>	-	-	-	-	-	-
<b>Description:</b> Provides technology insertion upgrade kits to previously installed A-RCI systems, providing the latest and most current capability and includes tech insertion to Legacy Replacement components.						

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 2		<b>P-1 Line Item Number / Title:</b> 2150 / SSN Acoustic Equipment			<b>Modification Number / Title:</b> 6 / SA303 688/688I TECHNOLOGY INSERTION KITS (SWFTS)	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Models of Systems Affected:</b> SSN		<b>Modification Type:</b> SHIPALT			<b>Related RDT&amp;E PEs:</b>	
<b>Financial Plan</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
<b>Procurement</b>						
<b>Modification Item 1 of 1:</b> SA303 688/688I TECHNOLOGY INSERTION KITS (SWFTS)						
B Kits						
Non-Recurring						
1.1.1) SA303 688i TECHNOLOGY INSERTION KITS (SWFTS) - NonOrganic <sup>(6)</sup>	- / -	6 / 0.000	- / -	6 / 47.836	- / -	6 / 47.836
<i>Subtotal: Non-Recurring</i>	<i>- / 0.000</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 47.836</i>	<i>- / -</i>	<i>- / 47.836</i>
<i>Subtotal: SA303 688/688I TECHNOLOGY INSERTION KITS (SWFTS)</i>	<i>- / -</i>	<i>6 / 0.000</i>	<i>- / -</i>	<i>6 / 47.836</i>	<i>- / -</i>	<i>6 / 47.836</i>
<i>Subtotal: Procurement, All Modification Items</i>	<i>- / 0.000</i>	<i>- / -</i>	<i>- / -</i>	<i>- / 47.836</i>	<i>- / -</i>	<i>- / 47.836</i>
<b>Installation</b>						
<b>Modification Item 1 of 1:</b> SA303 688/688I TECHNOLOGY INSERTION KITS (SWFTS)	- / 0.000	- / 0.000	- / 13.274	- / 0.000	- / 0.000	- / 0.000
<i>Subtotal: Installation</i>	<i>- / 0.000</i>	<i>- / -</i>	<i>- / 13.274</i>	<i>- / -</i>	<i>- / -</i>	<i>- / -</i>
<b>Total</b>						
<b>Total Cost (Procurement + Support + Installation)</b>	<b>0.000</b>	<b>0.000</b>	<b>13.274</b>	<b>47.836</b>	<b>0.000</b>	<b>47.836</b>



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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy						<b>Date:</b> May 2017							
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 2				<b>P-1 Line Item Number / Title:</b> 2150 / SSN Acoustic Equipment				<b>Modification Number / Title:</b> 6 / SA303 688/688I TECHNOLOGY INSERTION KITS (SWFTS)					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :								<b>MDAP/MAIS Code:</b>					
<b>Modification Item 1 of 1:</b> SA303 688/688I TECHNOLOGY INSERTION KITS (SWFTS)													
<b>Manufacturer Information</b>													
Manufacturer Name: Lockheed Martin						Manufacturer Location: VA							
Administrative Leadtime <i>(in Months)</i> : 3						Production Leadtime <i>(in Months)</i> : 12							
<b>Dates</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018</b>							
Contract Dates		Apr 2016				Apr 2018							
Delivery Dates		Apr 2017				Apr 2019							
<b>Installation Information</b>													
<b>Method of Implementation:</b> SHIPALT:: Installation Name: SA303 688i TECHNOLOGY INSERTION KITS (SWFTS)													
<b>Installation Cost</b>		<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>	
		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		- / -		- / -		- / -		- / -		- / -		- / -	
FY 2016		- / -		- / -		6 / 13.274		- / -		- / -		- / -	
FY 2017		- / -		- / -		- / -		- / -		- / -		- / -	
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -	
Total		- / -		- / -		6 / 13.274		- / -		- / -		- / -	
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	-	-	-	-	-	-	-	6	-	-	-	-	-
Out	-	-	-	-	-	-	-	6	-	-	-	-	-
<b>Footnotes:</b>													
<sup>(5)</sup> Due to BLI 2147 and BLI 2181 merging into BLI 2150, FY16 procurements are reflected in the BLI 2147 exhibit with the associated FY17 installation reflected in this BLI 2150 exhibit.													

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 2		<b>P-1 Line Item Number / Title:</b> 2150 / SSN Acoustic Equipment			<b>Modification Number / Title:</b> 8 / SA303 SSN 21 TECHNICAL INSERTION KITS (SWFTS)	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	0.000	0.000	12.037	12.278	0.000	12.278
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	0.000	0.000	12.037	12.278	0.000	12.278
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
<b>Total Obligation Authority</b> <i>(\$ in Millions)</i>	<b>0.000</b>	<b>0.000</b>	<b>12.037</b>	<b>12.278</b>	<b>0.000</b>	<b>12.278</b>
<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>	-	-	-	-	-	-
<b>Description:</b> Inserts Tech Insertions onto Seawolf Class Submarines.						

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 2		<b>P-1 Line Item Number / Title:</b> 2150 / SSN Acoustic Equipment			<b>Modification Number / Title:</b> 8 / SA303 SSN 21 TECHNICAL INSERTION KITS (SWFTS)	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Models of Systems Affected:</b> SSN ACOUSTICS		<b>Modification Type:</b> SHIPALT			<b>Related RDT&amp;E PEs:</b>	
<b>Financial Plan</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
<b>Procurement</b>						
<i>Modification Item 1 of 1:</i> SA303 SSN 21 TECHNICAL INSERTION KITS (SWFTS)						
B Kits						
Recurring						
1.1.1) SA303 SSN 21 TECHNICAL INSERTION KITS (SWFTS) - NonOrganic <sup>(6)</sup>	- / -	1 / 0.000	1 / 8.755	1 / 8.930	- / -	1 / 8.930
<i>Subtotal: Recurring</i>	<i>- / 0.000</i>	<i>- / -</i>	<i>- / 8.755</i>	<i>- / 8.930</i>	<i>- / -</i>	<i>- / 8.930</i>
<i>Subtotal: SA303 SSN 21 TECHNICAL INSERTION KITS (SWFTS)</i>	<i>- / -</i>	<i>1 / 0.000</i>	<i>1 / 8.755</i>	<i>1 / 8.930</i>	<i>- / -</i>	<i>1 / 8.930</i>
<i>Subtotal: Procurement, All Modification Items</i>	<i>- / 0.000</i>	<i>- / -</i>	<i>- / 8.755</i>	<i>- / 8.930</i>	<i>- / -</i>	<i>- / 8.930</i>
<b>Installation</b>						
<i>Modification Item 1 of 1:</i> SA303 SSN 21 TECHNICAL INSERTION KITS (SWFTS)						
<i>Subtotal: Installation</i>	<i>- / 0.000</i>	<i>- / 0.000</i>	<i>- / 3.282</i>	<i>- / 3.348</i>	<i>- / 0.000</i>	<i>- / 3.348</i>
<b>Total</b>						
<b>Total Cost (Procurement + Support + Installation)</b>	<b>0.000</b>	<b>0.000</b>	<b>12.037</b>	<b>12.278</b>	<b>0.000</b>	<b>12.278</b>

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy						<b>Date:</b> May 2017							
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 2				<b>P-1 Line Item Number / Title:</b> 2150 / SSN Acoustic Equipment				<b>Modification Number / Title:</b> 8 / SA303 SSN 21 TECHNICAL INSERTION KITS (SWFTS)					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :						<b>MDAP/MAIS Code:</b>							
<b>Modification Item 1 of 1:</b> SA303 SSN 21 TECHNICAL INSERTION KITS (SWFTS)													
<b>Manufacturer Information</b>													
Manufacturer Name: Lockheed Martin						Manufacturer Location: VA							
Administrative Leadtime <i>(in Months)</i> : 3						Production Leadtime <i>(in Months)</i> : 12							
<b>Dates</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018</b>							
Contract Dates		Apr 2016		Apr 2017		Apr 2018							
Delivery Dates		Apr 2017		Apr 2018		Apr 2019							
<b>Installation Information</b>													
<b>Method of Implementation:</b> SHIPALT:: Installation Name: SA303 SSN 21 TECHNICAL INSERTION KITS (SWFTS)													
<b>Installation Cost</b>		<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>	
		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		- / -		- / -		- / -		- / -		- / -		- / -	
FY 2016		- / -		- / -		1 / 3.282		- / -		- / -		- / -	
FY 2017		- / -		- / -		- / -		1 / 3.348		0 / 0.000		1 / 3.348	
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -	
Total		- / -		- / -		1 / 3.282		1 / 3.348		0 / 0.000		1 / 3.348	
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	-	-	-	-	-	-	-	1	-	-	-	1	-
Out	-	-	-	-	-	-	-	1	-	-	-	1	-
<b>Footnotes:</b>													
(6) Due to BLI 2147 and BLI 2181 merging into BLI 2150, FY16 procurements are reflected in the BLI 2147 exhibit with the associated FY17 installation reflected in this BLI 2150 exhibit.													

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 2		<b>P-1 Line Item Number / Title:</b> 2150 / SSN Acoustic Equipment			<b>Modification Number / Title:</b> 10 / SA303 VIRGINIA CLASS TECHNICAL INSERTION KITS (SWFTS)	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	0.000	0.000	55.810	40.182	0.000	40.182
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	0.000	0.000	55.810	40.182	0.000	40.182
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
<b>Total Obligation Authority</b> <i>(\$ in Millions)</i>	<b>0.000</b>	<b>0.000</b>	<b>55.810</b>	<b>40.182</b>	<b>0.000</b>	<b>40.182</b>
<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>	-	-	-	-	-	-
<p><b>Description:</b> Provides technology insertion upgrade kits to previously A-RCI installed systems on the VA Class, providing the latest and most current capability.</p> <p>[SA303 VIRGINIA CLASS TECHNICAL INSERTION KITS (SWFTS)] Provides technology insertion upgrade kits to previously A-RCI installed systems on the VA Class, providing the latest and most current capability.</p>						

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 2		<b>P-1 Line Item Number / Title:</b> 2150 / SSN Acoustic Equipment			<b>Modification Number / Title:</b> 10 / SA303 VIRGINIA CLASS TECHNICAL INSERTION KITS (SWFTS)	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Models of Systems Affected:</b> SSN ACOUSTICS		<b>Modification Type:</b> SHIPALT			<b>Related RDT&amp;E PEs:</b>	
<b>Financial Plan</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
<b>Procurement</b>						
<b>Modification Item 1 of 1:</b> SA303 VIRGINIA CLASS TECHNICAL INSERTION KITS (SWFTS)						
B Kits						
Recurring						
1.1.1) SA303 VIRGINIA CLASS TECHNICAL INSERTION KITS (SWFTS) - NonOrganic <sup>(7)</sup>	- / -	1 / 0.000	6 / 52.528	3 / 26.790	- / -	3 / 26.790
<i>Subtotal: Recurring</i>	<i>- / 0.000</i>	<i>- / -</i>	<i>- / 52.528</i>	<i>- / 26.790</i>	<i>- / -</i>	<i>- / 26.790</i>
<i>Subtotal: SA303 VIRGINIA CLASS TECHNICAL INSERTION KITS (SWFTS)</i>	<i>- / -</i>	<i>1 / 0.000</i>	<i>6 / 52.528</i>	<i>3 / 26.790</i>	<i>- / -</i>	<i>3 / 26.790</i>
<i>Subtotal: Procurement, All Modification Items</i>	<i>- / 0.000</i>	<i>- / -</i>	<i>- / 52.528</i>	<i>- / 26.790</i>	<i>- / -</i>	<i>- / 26.790</i>
<b>Installation</b>						
<b>Modification Item 1 of 1:</b> SA303 VIRGINIA CLASS TECHNICAL INSERTION KITS (SWFTS)	- / 0.000	- / 0.000	- / 3.282	- / 13.392	- / 0.000	- / 13.392
<i>Subtotal: Installation</i>	<i>- / 0.000</i>	<i>- / -</i>	<i>- / 3.282</i>	<i>- / 13.392</i>	<i>- / -</i>	<i>- / 13.392</i>
<b>Total</b>						
<b>Total Cost (Procurement + Support + Installation)</b>	<b>0.000</b>	<b>0.000</b>	<b>55.810</b>	<b>40.182</b>	<b>0.000</b>	<b>40.182</b>

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 2	<b>P-1 Line Item Number / Title:</b> 2150 / SSN Acoustic Equipment	<b>Modification Number / Title:</b> 10 / SA303 VIRGINIA CLASS TECHNICAL INSERTION KITS (SWFTS)

<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :	<b>MDAP/MAIS Code:</b>
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**Modification Item 1 of 1:** SA303 VIRGINIA CLASS TECHNICAL INSERTION KITS (SWFTS)

**Manufacturer Information**

Manufacturer Name: Lockheed Martin		Manufacturer Location: VA	
Administrative Leadtime (in Months): 3		Production Leadtime (in Months): 12	
<b>Dates</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>
Contract Dates	Apr 2016	Apr 2017	Apr 2018
Delivery Dates	Apr 2017	Apr 2018	Apr 2019

**Installation Information**

**Method of Implementation:** SHIPALT:: Installation Name: SA303 VIRGINIA CLASS TECHNICAL INSERTION KITS (SWFTS)

Installation Cost	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total 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 2016	- / -	- / -	1 / 3.282	- / -	- / -	- / -
FY 2017	- / -	- / -	- / -	4 / 13.392	0 / 0.000	4 / 13.392
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	1 / 3.282	4 / 13.392	0 / 0.000	4 / 13.392

**Installation Schedule**

	PYS	FY 2016				FY 2017				FY 2018			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
In	-	-	-	-	-	-	-	1	-	-	-	2	2
Out	-	-	-	-	-	-	-	1	-	-	-	2	2

**Footnotes:**

<sup>(7)</sup> Due to BLI 2147 and BLI 2181 merging into BLI 2150, FY16 procurements are reflected in the BLI 2147 exhibit with the associated FY17 installation reflected in this BLI 2150 exhibit.

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 2		<b>P-1 Line Item Number / Title:</b> 2150 / SSN Acoustic Equipment			<b>Modification Number / Title:</b> 11 / SA303 SSBN TECHNICAL INSERTION CONVERSION (SWFTS)	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	0.000	0.000	24.008	28.667	0.000	28.667
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	0.000	0.000	24.008	28.667	0.000	28.667
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
<b>Total Obligation Authority</b> <i>(\$ in Millions)</i>	<b>0.000</b>	<b>0.000</b>	<b>24.008</b>	<b>28.667</b>	<b>0.000</b>	<b>28.667</b>
<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>	-	-	-	-	-	-
<b>Description:</b> Provides sonar modernization to the SSBN (TRIDENT) Class Submarine Fleet.						



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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 2			<b>P-1 Line Item Number / Title:</b> 2150 / SSN Acoustic Equipment		<b>Modification Number / Title:</b> 11 / SA303 SSBN TECHNICAL INSERTION CONVERSION (SWFTS)	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Models of Systems Affected:</b> SSN ACOUSTICS		<b>Modification Type:</b> SHIPALT			<b>Related RDT&amp;E PEs:</b>	
<b>Financial Plan</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
<b>Procurement</b>						
<b>Modification Item 1 of 1:</b> SA303 SSBN TECHNICAL INSERTION CONVERSION (SWFTS)						
B Kits						
Non-Recurring						
1.1.1) SA303 SSBN TECHNICAL INSERTION CONVERSION (SWFTS) - NonOrganic <sup>(8)</sup>	- / -	2 / 0.000	3 / 15.814	3 / 16.130	- / -	3 / 16.130
<i>Subtotal: Non-Recurring</i>	<i>- / 0.000</i>	<i>- / -</i>	<i>- / 15.814</i>	<i>- / 16.130</i>	<i>- / -</i>	<i>- / 16.130</i>
<i>Subtotal: SA303 SSBN TECHNICAL INSERTION CONVERSION (SWFTS)</i>	<i>- / -</i>	<i>2 / 0.000</i>	<i>3 / 15.814</i>	<i>3 / 16.130</i>	<i>- / -</i>	<i>3 / 16.130</i>
<i>Subtotal: Procurement, All Modification Items</i>	<i>- / 0.000</i>	<i>- / -</i>	<i>- / 15.814</i>	<i>- / 16.130</i>	<i>- / -</i>	<i>- / 16.130</i>
<b>Installation</b>						
<b>Modification Item 1 of 1:</b> SA303 SSBN TECHNICAL INSERTION CONVERSION (SWFTS)	- / 0.000	- / 0.000	- / 8.194	- / 12.537	- / 0.000	- / 12.537
<i>Subtotal: Installation</i>	<i>- / 0.000</i>	<i>- / -</i>	<i>- / 8.194</i>	<i>- / 12.537</i>	<i>- / -</i>	<i>- / 12.537</i>
<b>Total</b>						
<b>Total Cost (Procurement + Support + Installation)</b>	<b>0.000</b>	<b>0.000</b>	<b>24.008</b>	<b>28.667</b>	<b>0.000</b>	<b>28.667</b>

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy						<b>Date:</b> May 2017							
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 2				<b>P-1 Line Item Number / Title:</b> 2150 / SSN Acoustic Equipment				<b>Modification Number / Title:</b> 11 / SA303 SSBN TECHNICAL INSERTION CONVERSION (SWFTS)					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :						<b>MDAP/MAIS Code:</b>							
<b>Modification Item 1 of 1:</b> SA303 SSBN TECHNICAL INSERTION CONVERSION (SWFTS)													
<b>Manufacturer Information</b>													
Manufacturer Name: TBD						Manufacturer Location: TBD							
Administrative Leadtime <i>(in Months)</i> : 6						Production Leadtime <i>(in Months)</i> : 12							
<b>Dates</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018</b>							
Contract Dates		Apr 2016		Apr 2017		Apr 2018							
Delivery Dates		Apr 2017		Apr 2018		Apr 2019							
<b>Installation Information</b>													
<b>Method of Implementation:</b> SHIPALT:: Installation Name: SA303 SSBN TECHNICAL INSERTION CONVERSION (SWFTS)													
<b>Installation Cost</b>		<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>	
		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		- / -		- / -		- / -		- / -		- / -		- / -	
FY 2016		- / -		- / -		2 / 8.194		- / -		- / -		- / -	
FY 2017		- / -		- / -		- / -		3 / 12.537		0 / 0.000		3 / 12.537	
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -	
Total		- / -		- / -		2 / 8.194		3 / 12.537		0 / 0.000		3 / 12.537	
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	-	-	-	-	-	-	-	2	-	-	-	3	-
Out	-	-	-	-	-	-	-	2	-	-	-	3	-
<b>Footnotes:</b>													
(8) Due to BLI 2147 and BLI 2181 merging into BLI 2150, FY16 procurements are reflected in the BLI 2147 exhibit with the associated FY17 installation reflected in this BLI 2150 exhibit.													

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy								Date: May 2017				
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars						P-1 Line Item Number / Title: 2176 / Undersea Warfare Support Equipment						
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A					Other Related Program Elements: 0603512N, 0604518N				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	91.325	7.331	7.163	13.653	0.000	13.653	10.419	9.207	8.250	8.296	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	91.325	7.331	7.163	13.653	0.000	13.653	10.419	9.207	8.250	8.296	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	91.325	7.331	7.163	13.653	0.000	13.653	10.419	9.207	8.250	8.296	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	0.052	-	-	-	-	-	-	-	-	-	0.052
Flyaway Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Description:												
VM201 - ACOUSTIC COMMUNICATIONS (ACOMMS) AND DEPTH SOUNDERS (funding ended in FY 2016): Acoustic Communications provides one-way and two-way acoustic communications equipment for submarines and surface ships; Depth Sounders provide a means of measuring the depth of water below the face of a hull mounted transducer. The equipment consists of: (1) AN/WQC-2/2A, a stand-alone, single side-band, general purpose, voice, continuous wave, multiple tone communication for surface ships, submarines, and shore activities; (2) AN/WQC-6, which provides long range coded signaling from surface Anti-Submarine Warfare (ASW) ships to attack submarines when interfaced with the AN/SQS-53 and AN/BQQ-5; (3) AN/BQC-1, a stand-alone emergency voice and signal beacon for submarines; (4) AN/UQN-4/4A, a water depth measuring system that provides the distance between the ship keel and the ocean bottom; and (5) technical improvements (Engineering Changes (ECs)) to Acoustic Communication and Depth Sounder equipment. Funding will provide for continued procurement of both Probe Alert (AN/WQC-6) improvements and AN/WQC-2A and AN/UQN-4/4A ECs, plus associated production engineering support and consulting services for the SSN 21, SSN 688, SSN 774, SSBN 726, SSGN 726, DDG 51, CG 47, MCM 1, FFG 7, AS, LHA, LHD, LPD, LSD, and CVN 68 class ships and submarines.												
VM301 - AIRCRAFT CARRIER TACTICAL SUPPORT CENTER (CV-TSC): The AN/SQQ-34 Aircraft Carrier Tactical Support Center (CV-TSC) program provides increased situational awareness to the Carrier Strike Group (CSG) in support of force protection, primarily in the area of ASW. Through the integration of off-board sensors and signal, data and display processors, the AN/SQQ-34 is utilized in detecting, classifying, and localizing threats. An integrated element of the Carrier Combat System, the AN/SQQ-34 supports the tactical deployment of embarked ASW and Surface Warfare (SUW) assets. The program provides technical refreshes to legacy AN/SQQ-34 systems on all Carriers and shore sites in support of Fleet introduction and shipboard integration of the MH-60R Multi-Mission Helicopter. Upgrades to legacy systems will enable exchange of sensor, tactical and imagery data with the MH-60R initially and eventually with P-8 and Triton Unmanned Aircraft Systems (UAS) aircraft. It completes the Kill Chain by linking sensor platform to sensor controllers and the ASW/SUW commanders. In order to support multiple MH-60R Multi-Mission Helicopters, the Common Data Link (CDL) will also be upgraded. CDL is the Navy Aircraft Carrier ultra wide-band, digital, secure data link, comprised of radio equipment that provides configuration-controlled and standardized wide-band, digital, and secure communication paths between multiple reconnaissance sensors and their users. Initially, a single User Interface Group (UIG) upgrade to CDL will be fielded in concert with CV-TSC/MH-60R deployments, providing a single MH-60R/aircraft link.												
VM401 - SURFACE SONAR WINDOWS AND DOMES: AN/SQS-26/53 Sonar Dome Rubber Windows (SDRW) are installed on CG47 and DDG51 class ships. This program provides emergency replacement, wire-reinforced, pressurized rubber acoustic windows and attachment hardware, which experience failure due to corrosion, fatigue, and impact damage. The SDRW significantly improves the surface ship sonar performance by reducing flow-induced self-noise and by providing increased source level receiving and sensitivity resulting from reduced attenuation. This program provides production engineering in support of technical evaluations, failure analysis, implementation of the in-water one-side backscatter X-ray program, Government Furnished Equipment (GFE) refurbishments, and field service engineering; and complete engineering design work and material tests. This program												

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars		P-1 Line Item Number / Title: 2176 / Undersea Warfare Support Equipment
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0603512N, 0604518N
Line Item MDAP/MAIS Code: N/A		
also provides drawings, configuration management information, new design and fabrication technology, incorporation of lessons learned and required testing, and construct sub-element to confirm single-stage cure.		
<p>VM601 - UNDERSEA WARFARE DECISION SUPPORT SYSTEM (USW-DSS)</p> <p>USW-DSS provides an integrated, near-real time, net-centric ASW Command and Control (C2) capability across multiple surface platforms and critical shore sites. USW-DSS provides a critical C2 capability for the Sea Combat, Theater USW (TUSW), and ASW Commanders, and enables the ability to plan and conduct USW operations, alignment of sensors for exploitation of the environment, allocation of resources, optimization of operations and risk, and vulnerability assessment. It provides USW Commanders with an expanded net-centric USW capability across CSG platforms (CVNs, CG/DDGs, and Integrated Undersea Surveillance System (IUSS)) as well as supporting shore nodes to include Theater Surface Combatants (TSC), Training, Naval Oceanographic Processing Facility (NOPF), and Commander Task Force (CTF). This program procures and installs USW-DSS on CSG platforms and supporting shore nodes via permanent ship alterations (SHIPALTs). In FY 2009 USW-DSS transitioned to a software application hosted on the Integrated Shipboard Network System (ISNS) and in FY 2014 started installing as part of the Consolidated Afloat Network and Enterprise Services (CANES). Workstation procurements are required to support the ISNS and CANES configured ships as well as shore nodes. The program is included in the Littoral and Maritime Operations Mission Capability Package installed on Littoral Combat Ship (LCS) and the Frigate (FF). USW-DSS capability is phased to effectively deliver software improvements to the warfighter. The current software version, Build 2 Release 3 (B2R3), will continue to field until the follow-on Build 3 (B3) certifies in FY 2019.</p>		
[P40A / VM301 - AIRCRAFT CARRIER TACTICAL SUPPORT CENTER (CV-TSC)]: VM301 - AIRCRAFT CARRIER TACTICAL SUPPORT CENTER (CV-TSC)		
[P40A / CV-TSC Technology Insert/Refresh & ECP Implementation]: VM301 - Technology Insert/Refresh & ECP Implementation: Consists of Engineering Change Proposals (ECPs) and hardware/software changes/upgrades to previously fielded and in-production AN/SQQ-34 systems. Funding used to implement ECPs to correct deficiencies identified through Fleet use; upgrade unreliable components; replace obsolete components; and address Information Assurance (IA) issues. FY 2017 (\$0.315M) to FY 2018 (\$0.338M) increase is attributable to the effect of the decrease in budget controls in FY 2017 due to the Bipartisan Budget Act (BBA) reduction being applied to this effort. FY 2018 represents the ramping up of CV-TSC Technology Insert/Refresh & ECP Implementation efforts towards required levels.		
[P40A / VM401 - SURFACE SONAR WINDOWS AND DOMES]: VM401 - SURFACE SONAR WINDOWS AND DOMES		
[P40A / Surface Sonar Windows and Domes]: VM401 - Surface Sonar Windows and Domes: Procure SDRWs, shipping fixtures, and fairing angles for emergency replacement on CG 47 and DDG 51 class hulls. Beginning in FY 2016, SDRW procurements are reduced from three (3) to one (1) per year based on current Fleet replacement requirements and existing inventory.		
[P40A / Production Support]: VM401 - SDRW Production Support: Funding is provided for production engineering in support of technical evaluations, failure analysis, implementation of the in-water one-side backscatter X-ray program, Government Furnished Equipment (GFE) refurbishments, and field service engineering; and complete engineering design work and material tests. This program also provides drawings, configuration management information, new design and fabrication technology, incorporation of lessons learned and required testing, and construct sub-element to confirm single-stage cure. FY 2017 (\$0.166M) to FY 2018 (\$0.290M) increase is attributable to the effect of the decrease in budget controls in FY 2017 due to the Bipartisan Budget Act (BBA) reduction being applied to this effort. FY 2018 represents the ramping up of SDRW Production Support towards required levels.		
[P40A / VM601 - UNDERSEA WARFARE DECISION SUPPORT SYSTEM (USW-DSS)]: VM601 - UNDERSEA WARFARE DECISION SUPPORT SYSTEM (USW-DSS)		
[P40A / Carrier Strike Group (CSG) Shipsets]: VM601 - USW-DSS/Carrier Strike Group (CSG) Shipsets: Consists of the complete USW-DSS (hardware, software, and support equipment).		
[P40A / Backfit To Post-OPEVAL]: VM601 - USW-DSS/Backfit To Post-OPEVAL: Consists of updates to existing USW-DSS Build 2 Release 3 systems in the Fleet with changes dictated by the FY 2013 OPEVAL of USW-DSS Build 2 Release 3.		
[P40A / ISNS to CANES S/W Shipsets]: VM601 - USW-DSS/ISNS/CANES S/W Shipsets: Consists of USW-DSS Build 2 Release 3 software load onto ISNS/CANES platforms. Include updates from ISNS to CANES as well as new CANES software and workstation suites. Schedule is dependent upon/coordinated with ISNS/CANES fielding.		

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars		<b>P-1 Line Item Number / Title:</b> 2176 / Undersea Warfare Support Equipment
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A	<b>Program Elements for Code B Items:</b> N/A	<b>Other Related Program Elements:</b> 0603512N, 0604518N
<b>Line Item MDAP/MAIS Code:</b> N/A		
<p>[P40A / Shore Sites and Tactical Trainers]: VM601 - USW-DSS/Shore Sites and Tactical Trainers: Consists of USW-DSS post-OPEVAL Build 2 Release 3 shore/lab assets and Tactical Training Equipment systems, which are full hardware/software suites. USW-DSS Build 3 will be loaded on all training and shore site nodes beginning in FY 2018.</p> <p>[P40A / USW-DSS Tech Refresh]: VM601 - USW-DSS Tech Refresh: Funding is for hardware/software technology upgrades to previously fielded USW-DSS/UYQ-100 hardware Technical Insertion (TI)-08 baseline afloat and shore sites, including Surveillance Towed Array Sensor System (SURTASS) ships, Theater commands, support nodes, and Tactical Training Equipment TTE).</p> <p>[P40A / Engineering Changes (ECs)]: VM601 - USW-DSS/Engineering Changes: Consists of Engineering Change Proposals (ECPs) and hardware/software changes/upgrades. Funding will be used to support Reliability, Maintainability, and Availability (RM&amp;A) modifications, correct deficiencies identified through Fleet use, and upgrade of unreliable components. FY 2017 (\$0.843M) to FY 2018 (\$1.110M) increase represents ramping up of ECs to required levels to support the increasing number of fielded systems as USW-DSS progresses from software version Build 2 Release 3 to a more complex Build 3 version, provide support of the unique configuration of Theater ASW Shore systems, as well as provide the additional support required to satisfy all USW-DSS Cyber Security requirements.</p> <p>[P40A / System Technical Support]: VM601 - USW-DSS/System Technical Support: Funding is for the USW-DSS program Software Support Activity efforts in performing the following functions: generation/assessment of Software Problem Reports (SPRs)/Software Trouble Reports (STRs); responding to Fleet software Change Requests (CR); Configuration Management (CM); software Quality Assurance (QA); software installation automation; and software recovery support. FY 2017 (\$0.766M) to FY 2018 (\$2.204M) increase represents the ramping up of system technical support to required levels to support the increasing number of fielded systems as USW-DSS progresses from software version Build 2 Release 3 to Build 3, support the deployment of emergent Cyber Security upgrades that will meet the new DoD mandate, and support the resolution of Commercial-Off-The-Shelf (COTS) obsolescence issues.</p> <p>[P40A / Production Support]: VM601 - USW-DSS/Production Support: Consists of on-site engineering support; CANES Integrated Product Team (IPT) Support; Information Assurance (IA) certification support; production quality assurance; System Sustainability Support; Integrated Logistics Support (ILS) product updates/support; status reporting and technical briefings; program office support; and all other production support efforts directly related to delivery of USW-DSS to both ISNS/CANES and ultimately the Fleet. FY 2017 (\$0.321M) to FY 2018 (\$0.858M) increase represents ramping up of production support to required levels to support the increasing number of fielded systems as USW-DSS progresses from software version Build 2 Release 3 to Build 3, support the removal of legacy USW-DSS equipment and subsequent restoral to the baseline configuration prior to upgrading to a new software baseline, and support of all acceptance test &amp; evaluation efforts.</p> <p>[P40A / CANES S/W Shipset]: VM601 - CANES S/W Shipsets: Consists of initial loads of the post-OPEVAL USW-DSS Build 2 Release 3 software suite on new CANES ships, which includes changes dictated by the FY 2013 OPEVAL of USW-DSS Build 2 Release 3. Schedule is dependent on/coordinated with CANES fielding. Prior Years reflect ISNS software shipsets. FY 2017 (\$0.068M) to FY 2018 (\$0.090M) unit cost increase is due to the FY 2017 unit cost only representing USW-DSS updates to CANES workstations as well as software licensing fees. FY 2018 includes USW-DSS updates to the CANES workstations, software licensing fees, as well as planning yard pre-install and installation costs.</p>		
<p><b>Justification:</b>  YEAR-TO-YEAR BUDGET CONTROL COMPARISON:  - FY 2018 increases driven by the requirement for improvements and tech refreshes of USW-DSS to avoid obsolescence and improve reliability and maintainability. The tech refresh includes all USW-DSS/UYQ-100 hardware Technical Insertion (TI)-08 baseline afloat and shore sites, including Surveillance Towed Array Sensor System (SURTASS) ships, Theater commands, support nodes, and Tactical Training Equipment (TTE). Additionally, the program will procure and install hardware supporting a Theater ASW (TASW) capability for Theater Commands, laboratories and training locations, and Joint and Coalition nodes.</p>		

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy										<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 2: Ship Sonars							<b>P-1 Line Item Number / Title:</b> 2181 / Sonar Switches and Transducers					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A				<b>Program Elements for Code B Items:</b> N/A				<b>Other Related Program Elements:</b> N/A				
<b>Line Item MDAP/MAIS Code:</b> N/A												
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>To Complete</b>	<b>Total</b>
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	122.186	11.781	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	133.967
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	122.186	11.781	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	133.967
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>122.186</b>	<b>11.781</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>-</b>	<b>133.967</b>
<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> )	-	0.517	-	-	-	-	-	-	-	-	-	0.517
Flyaway Unit Cost ( <i>\$ in Dollars</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ( <i>\$ in Dollars</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<p><b>Description:</b></p> <p>*Note - In FY17 and out, BLI's 2147 and 2181 have been consolidated into BLI 2150. This exhibit reflects FY15-16 and the data continues on under BLI 2150 for FY17-21.</p> <p>This program procures hydrophones, transducers, cables, associated Out-Board Electronics bottles (OBE), and acoustic windows for In-Service Undersea Warfare Sonars on all classes of submarines. The components are required to support units in the fleet on a replacement basis, at regularly scheduled ship overhauls, and at interim availabilities when units are defective, and for upgrades.</p> <p>[P40A / PU100 SONAR SWITCHES AND TRANSDUCERS]: Included in this line are procurements of transducers, hydrophones, windows, cables, Out-Board Electronics (OBE), domes and their associated mounting hardware, and other support equipment and materials for the following Undersea Warfare Sonars: BSY-1, BSY-2, BQQ-5, BQQ-6, BQQ-10, BQG-5, BQS-15, BQS-14A, WQC-2, WLR-9/12, BQN-13, BQN-17, BQA-8, BQH-1 and BQS-25.</p> <p>[P40A / PU200 ENGINEERING CHANGES]: Funds ECPs, Value Engineering awards, and hardware changes affecting the SSN 688, 688I, SEAWOLF, SSBN 726 (TRIDENT), SSGN/SSBN, and VA Class submarines.</p> <p>[P40A / PU300 PROGRAM SUPPORT]: Supports the procurement of equipment of sonar hydrophones, transducers, cables, Out-Board Electronics (OBEs), and acoustic windows for In-Service Undersea Warfare Sonars.</p>												

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**Exhibit P-40, Budget Line Item Justification:** FY 2018 Navy **Date:** May 2017

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

Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	94.341	19.718	21.291	21.449	0.000	21.449	24.090	26.218	26.738	27.272	Continuing	Continuing
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	94.341	19.718	21.291	21.449	0.000	21.449	24.090	26.218	26.738	27.272	Continuing	Continuing
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority (<i>\$ in Millions</i>)</b>	<b>94.341</b>	<b>19.718</b>	<b>21.291</b>	<b>21.449</b>	<b>0.000</b>	<b>21.449</b>	<b>24.090</b>	<b>26.218</b>	<b>26.738</b>	<b>27.272</b>	<b>Continuing</b>	<b>Continuing</b>
<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> )	-	0.401	0.366	2.023	-	2.023	0.998	1.349	1.188	1.046	Continuing	Continuing
Flyaway Unit Cost ( <i>\$ in Dollars</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ( <i>\$ in Dollars</i> )	-	-	-	-	-	-	-	-	-	-	-	-

## Description:

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

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

WM019 - The Countermeasure Set, Acoustic (CSA) program procures and supports the inboard electronic system necessary for preparing and launching 6" Acoustic Device Countermeasures (ADCs) from all 688i and newer U.S. submarines. This inboard system consists of the Torpedo Defense Controller (TDC), Launch Control Panels (LCPs), and associated cabling, in a class-by-class configuration. The CSA program provides obsolescence support for legacy systems and engineering changes to accommodate modified and planned new devices, such as the ADC MK5. Four efforts are supported: (1) the "Technology Refresh" effort is designing, building, testing and certifying replacement components for obsolete CSA MK2 systems (MOD0/3/4) on 688i SSN and OHIO SSBN submarines, with the refresh occurring in FY16-FY20. (2) The "CSA MK3 Technology Insertion" effort is federating the CSA MK3 system with Submarine Warfare Federated Tactical System (SWFTS) to facilitate the ADC MK5 and Submarine Torpedo Defense Tactical Decision Aid (SubTDS TacDA) upon introduction. A phased approach was taken to allow a more efficient incremental implementation of initial capabilities. Required funding is expected to level off after ADC MK5 device fielding and address recurring upgrades with Advanced Processor Build/ Technology Insertion (APB/TI) cycles. (3) The "CSA MK4 Technology Insertion" effort replaces CSA MK2 MOD2 with CSA MK4 as a "SWFTS-federated" system on VIRGINIA Class Block I and II submarines (10 hulls) to accommodate the introduction of ADC MK5 devices. Non-recurring engineering will complete, with installs starting in FY19. (4) The fourth effort is the ongoing support of engineering issues across all CSA systems as they arise.

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 3: ASW Electronic Equipment		P-1 Line Item Number / Title: 2210 / Submarine Acoustic Warfare System
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>[P40A / WM014 6 INCH]: WM014 6 INCH - The 6" Countermeasures program procures, reworks, and refreshes ADC MK3 (torpedo countermeasure) devices, ADC MK4 (SONAR countermeasure) devices, and associated Launch Tubes in order to maintain submarine fleet countermeasure device inventory levels in accordance with the Naval Munition Requirements Process (NMRP). The 6" Countermeasure program tracks and implements device improvements through configuration control and an Engineering Change Proposal (ECP) process. A Service Life Extension Program (SLEP) was initiated in FY14 for ADC MK3 and MK4 devices to extend the usability of 6" devices. The next projected procurement contract will occur in FY19.</p>		
<p>[P40A / WM015 3 INCH]: WM015 3 INCH - The 3" Countermeasures program procures NAE Beacon MK3 MODs 3 and 4, and ADC MK2 MODs 3, 5, and 7 countermeasure devices in order to maintain submarine fleet countermeasure device inventory levels in accordance with the Naval Munition Requirements Process (NMRP). The 3" Countermeasures program tracks and implements device improvements through configuration control and the ECP process. The Next Generation Countermeasure (NGCM) Program will transition the ADC MK5 into production outside of the FYDP, nominally starting in FY25, to become a part of the 3" countermeasure program. A shelf life extension completed in FY16, resulted in extending the shelf life from eight (8) to ten (10) years for ADC MK2 MODs 3,5 with set shelf life for ADC MK2 MOD 7 at 12years</p>		
<p>[P40A / WM022 GAS GENERATOR MK77]: WM022 Gas Generator MK 77 - The MK77 Gas Generator (GG) program procures the energetic components required to launch the ADC MK3 and ADC MK4 countermeasure devices from the External Countermeasure Launchers (ECLs). The GG program also reworks existing devices to extend their service life, and tracks and implements device improvements through configuration control and ECP process. A SLEP for MK77 MOD0 devices was completed in FY16, resulted in extending the service life from two (2) to four (4) years for all devices except those installed aboard SSGN class submarines.</p>		
<p>[P40A / WM830 PRODUCTION ENGINEERING]: WM830 - Production Engineering - The Production Engineering line provides production engineering services for SAWS Technical Design Agent (TDA) and In-Service Engineering Agent (ISEA) across all SAWS systems, including AASP.</p>		
<p>[P40A / PRODUCTION ENGINEERING]: Production Engineering adjustment commensurate with anticipated work. To support the ordnance assessment that is planned to extend the service life.</p>		
<p>[P40A / WM900 CONSULTING SERVICES]: WM900 Consulting Services - The Consulting Services line procures contractor support services for all SAWS programs.</p>		

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy								<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 3: ASW Electronic Equipment						<b>P-1 Line Item Number / Title:</b> 2210 / Submarine Acoustic Warfare System				
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A			<b>Program Elements for Code B Items:</b> N/A			<b>Other Related Program Elements:</b> N/A				
<b>Line Item MDAP/MAIS Code:</b> N/A										
Exhibits Schedule					Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Submarine Acoustic Warfare System				- / 69.455	- / 11.000	- / 9.279	- / 7.643	- / -	- / 7.643
P-40a	AASP WM018				- / 4.050	- / 1.404	- / 2.843	- / 3.022	- / 0.000	- / 3.022
P-3a	2 / CSA WM019 (TBD)				- / 20.836	- / 7.314	- / 9.169	- / 10.784	- / 0.000	- / 10.784
<b>P-40</b>	<b>Total Gross/Weapon System Cost</b>				<b>- / 94.341</b>	<b>- / 19.718</b>	<b>- / 21.291</b>	<b>- / 21.449</b>	<b>- / 0.000</b>	<b>- / 21.449</b>
<small>*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.</small>										

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy															Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3							P-1 Line Item Number / Title: 2210 / Submarine Acoustic Warfare System							Aggregated Items Title: Submarine Acoustic Warfare System						
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
1) WM014 6 INCH																				
1.1) 6" Countermeasure Launch Tube <sup>(1)</sup>	A		10,434.71	628	6.553	5,000.00	200	1.000	5,125.00	177	0.907	5,770.00	125	0.721	-	-	-	5,770.00	125	0.721
1.2) ADC MK3 (TORPEDO) NEW <sup>(2)</sup>	A		31,276.32	532	16.639	0.00	40	0.000	37,275.00	32	1.193	44,056.00	32	1.410	-	-	-	44,056.00	32	1.410
1.4) MK 3 ADC SLEP <sup>(3)</sup>	A		6,022.73	88	0.530	12,000.00	150	1.800	5,090.91	88	0.448	5,720.00	52	0.297	-	-	-	5,720.00	52	0.297
1.6) ADC MK 4 SLEP <sup>(4)</sup>	A		17,208.33	24	0.413	12,000.00	50	0.600	8,472.00	52	0.441	9,791.00	36	0.352	-	-	-	9,791.00	36	0.352
Subtotal: 1) WM014 6 INCH			-	-	24.135	-	-	3.400	-	-	2.989	-	-	2.780	-	-	-	-	-	2.780
2) WM015 3 INCH																				
2.1) NAE BEACON <sup>(5)</sup>	A		5,890.93	1,907	11.234	4,900.00	514	2.519	-	-	-	-	-	-	-	-	-	-	-	-
2.2) ADC MK2 <sup>(6)</sup>	A		5,491.68	1,442	7.919	5,802.00	88	0.511	6,000.00	100	0.600	6,185.00	100	0.619	-	-	-	6,185.00	100	0.619
Subtotal: 2) WM015 3 INCH			-	-	19.153	-	-	3.030	-	-	0.600	-	-	0.619	-	-	-	-	-	0.619
3) WM022 GAS GENERATOR MK77																				
3.1) GAS GENERATOR MK77 MOD 1 NEW PRODUCTION <sup>(7)</sup>	A		10,781.07	1,416	15.266	-	-	-	20,492.75	138	2.828	18,975.00	80	1.518	-	-	-	18,975.00	80	1.518
3.2) Gas Generator MK77 Mod 0 <sup>(8)</sup>	A		7,266.67	270	1.962	10,911.67	300	3.274	12,390.24	41	0.508	12,463.00	40	0.499	-	-	-	12,463.00	40	0.499
Subtotal: 3) WM022 GAS GENERATOR MK77			-	-	17.228	-	-	3.274	-	-	3.336	-	-	2.017	-	-	-	-	-	2.017
4) WM830 PRODUCTION ENGINEERING																				
4.1) PRODUCTION ENGINEERING	A		-	-	7.081	-	-	0.947	-	-	1.894	-	-	1.758	-	-	-	-	-	1.758
Subtotal: 4) WM830 PRODUCTION ENGINEERING			-	-	7.081	-	-	0.947	-	-	1.894	-	-	1.758	-	-	-	-	-	1.758
5) WM900 CONSULTING SERVICES																				
5.1) CONSULTING SERVICES	A		-	-	1.858	-	-	0.349	-	-	0.460	-	-	0.469	-	-	-	-	-	0.469
Subtotal: 5) WM900 CONSULTING SERVICES			-	-	1.858	-	-	0.349	-	-	0.460	-	-	0.469	-	-	-	-	-	0.469
Total			-	-	69.455	-	-	11.000	-	-	9.279	-	-	7.643	-	-	-	-	-	7.643

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

**Footnotes:**

<sup>(1)</sup> Rework of launch tubes (LT) assumed in FY17 and FY18 in conjunction with rework and production of ADC MK3 and MK4 at OEM. Starting in FY19, LT's are included in next contract for ADC MK3 and MK4. Quantities reduced in FY18 from PB17 estimate to balance with MK3 and MK4 quantities.

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<b>Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy</b>		<b>Date: May 2017</b>
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 3	<b>P-1 Line Item Number / Title:</b> 2210 / Submarine Acoustic Warfare System	<b>Aggregated Items Title:</b> Submarine Acoustic Warfare System
<p><sup>(2)</sup> Procures new and rework ADC MK3 Acoustic Device Countermeasures. Plans FY19 contract for ADC MK3 and ADC MK4, including launch tubes, assuming one year of NRE and follow-on production orders for new units in FY20. In FY17 and FY18 ADC MK3 Shelf Life Extension Program (SLEP) rework cost is broken out from ADC MK3 "new" cost for clarification of units and unit cost from PB17 estimate. Ratio of SLEP to new procurement units may vary due to the variation in SLEP unit costs dependent on unit condition. Identified budget will balance new procurement units with SLEP rework units to maximize inventory. Planned quantities of new production increased in FY18 from PB17 due to limitation of units suitable for SLEP. The unit price is based on step ladder quantity pricing in the contractor's proposal. The Government added an additional cost of 10% to cover the In-Service Engineering Agent (ISEA) and Technical Direction Agent (TDA). The FY19 ADC MK3 and ADC MK4 contract was calculated with NRE cost for startup, including First Article Testing of \$7.2 million, which was based on historical expenditure in previous competitive startup efforts.</p> <p><sup>(3)</sup> ADC MK3 SLEP broken out from ADC MK3 new cost element for clarification of units and unit cost in FY17 and FY18. SLEP unit refresh/rework actual quantities and unit cost may vary based on availability and condition of units to be refreshed. Identified budget will balance new procurement with SLEP rework to maximize inventory. Plan quantities of SLEP decreased in FY18 due to limitation of suitable units. Budget transferred to new procurements of ADC MK3. The increase in APUC by 10% is the historical amount that has been added to the unit price to cover the engineering efforts of the ISEA and TDA. This has normally been spread out across the units. The engineering cost is imbedded in the unit price. Historically it has been at 10% but for FY18, 19, and 20 it is 18% to cover the cost of the ordnance assessment that is planned for these years to extend the service life.</p> <p><sup>(4)</sup> ADC MK4 SLEP broken out from ADC MK4 cost element for clarification of units and unit cost in FY17 through FY18. SLEP unit refresh/rework actual quantities and unit cost may vary based on 2018 Budget Descriptions &amp; Notes availability and condition of units to be refreshed. The increase in APUC by 10% is the historical amount that has been added to the unit price to cover the engineering efforts of the ISEA and TDA. This has normally been spread out across the units.</p> <p><sup>(5)</sup> NAE Beacon contract awarded in May 2014 changed unit cost which was used in FY16. Previously planned follow on production contract in FY20 for NAE Beacons is no longer necessary due to ADC MK2 MOD7 incorporating NAE Beacon functionality.</p> <p><sup>(6)</sup> New contract awarded in FY16 for MK2 MOD7 production and the current costs identified are based on actual contract pricing. The FY17 unit cost was an estimate. Since the contract has been awarded the current costs identified are based on actual contract pricing. Increased quantities necessary starting in FY19 to replace prior planned NAE Beacon procurements units in FY20-22 as ADC MK2 MOD7 replaces NAE Beacon function. The increase in APUC by 10% is the historical amount that has been added to the unit price to cover the engineering efforts of the ISEA and TDA. This has normally been spread out across the units.</p> <p><sup>(7)</sup> Cost increase of MK77 beginning FY17 is due to reflecting only unit cost increase of MK77 MOD1 in new production. MK77 MOD1 GGs are procured as wholly new devices; obsolete components are not used for this unit. Unit cost includes prorated share of management and engineering oversight. MK77 MOD1 new production is broken out for clarification of units and unit cost where MK77 MOD0 rework is planned. The engineering cost is imbedded in the unit price. The increase in APUC by 10% is the historical amount that has been added to the unit price to cover the engineering efforts of the ISEA and TDA. This has normally been spread out across the units.</p> <p><sup>(8)</sup> MK77 GGs are broken out for clarification of units and unit cost. In FY16, single unit cost includes cost of management and engineering oversight. In FY18 and beyond, engineering and management costs are prorated to Mod 0 and Mod 1 production costs. MK77 MOD0 are reworked gas generators - reuse of energetics to end of life (22 to 32 years).</p>		

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy										Date: May 2017	
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3					P-1 Line Item Number / Title: 2210 / Submarine Acoustic Warfare System					Aggregated Items Title: AASP WM018	

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring																				
WM018 AASP Support <sup>(9)</sup>	A		-	-	-	-	-	0.165	-	-	0.274	-	-	0.175	-	-	-	-	-	0.175
WM018 AASP (Acoustic Augmentation Support Program) -- Procurement <sup>(10)</sup>	A		-	-	-	863,600.00	1	0.864	879,000.00	1	0.879	910,500.00	2	1.821	-	-	-	910,500.00	2	1.821
WM018 AASP (Acoustic Augmentation Support Program) -- Installation	A		-	-	-	-	-	-	-	-	0.390	-	-	1.026	-	-	-	-	-	1.026
WM018 AASP Reliability and Refurbishment Upgrade -- Procurement <sup>(11)</sup>	A		100,000.00	1	0.100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WM018 AASP Reliability and Refurbishment Upgrade -- Installation	A		-	-	-	-	-	0.375	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: B Kits/Recurring			-	-	0.100	-	-	1.404	-	-	1.543	-	-	3.022	-	-	-	-	-	3.022
B Kits/Non-Recurring																				
WM018 AASP (Acoustic Augmentation Support Program) <sup>(12)</sup>	A		-	-	3.950	-	-	-	-	-	1.300	-	-	-	-	-	-	-	-	-
Subtotal: B Kits/Non-Recurring			-	-	3.950	-	-	-	-	-	1.300	-	-	-	-	-	-	-	-	-
Total			-	-	4.050	-	-	1.404	-	-	2.843	-	-	3.022	-	-	0.000	-	-	3.022

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

**Remarks:**

The Acoustic Augmentation Support Program (AASP) provides acoustic augmenting systems in appropriate configurations for all submarine classes (except SEAWOLF) installed as temporary equipment (a TEMPALT). A permanently installed Ship Alteration (SHIPALT) configuration for VIRGINIA Class Block I/II/III was developed and installations will start in FY17 (delayed from FY16 due because budget insufficient for installation cost estimates). A permanent SHIPALT for VIRGINIA Class Block IV will be developed in FY17 and installations will start in FY26, gradually phasing out the TEMPALTs on VIRGINIA Class. Reliability and refresh upgrades sustain current in-service AASP systems with new components and software updates to maintain reliability. Includes production support for BLK I-IV SHIPALTS and the AASP reliability and refurbishment upgrade. AASP includes costs of procuring new systems and reuse of available components, including the HLF-1, for SHIPALT installation such that "unit cost" is a mix of new and used components. An additional HLF-1 transducer (not a complete full system) is procured in FY17 (\$587K) and FY19 (\$610K). Reliability and refurbishment upgrade to sustain current in-service AASP systems. Non-recurring costs to produce AASP SHIPALT Package.

**Footnotes:**

<sup>(9)</sup> Includes production support for SHIPALT 4678. FY17 Increased 1.1.1 with funds from 1.1.3. This increase is due to the Information Assurance effort. FY19 increase in 1.1.1 is due to installations and support. These costs are for 2 FTE to manage the effort (including the IA requirements) and match with the SWFTS upgrade cycle.

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<b>Exhibit P-40a, Budget Item Justification For Aggregated Items:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 3	<b>P-1 Line Item Number / Title:</b> 2210 / Submarine Acoustic Warfare System	<b>Aggregated Items Title:</b> AASP WM018
<p><sup>(10)</sup> An additional HLF-1 transducer is procured in FY19 (\$610K) which increases the unit cost per system. Anticipated cost for installation in FY16 exceeded available funds, consequently, the installation was shifted to FY17 with the additional funding identified.</p> <p><sup>(11)</sup> Installations will occur one or two years after procurement due to long term availabilities scheduling. Installation quantities updated in order to accommodate the current budget with the new increased installation cost.</p> <p><sup>(12)</sup> FY17 Installations will use FY16 funds for installation (.758) on FY17 Installation funds.</p>		

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Exhibit P-3a, Individual Modification: FY 2018 Navy					Date: May 2017		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3		P-1 Line Item Number / Title: 2210 / Submarine Acoustic Warfare System			Modification Number / Title: 2 / CSA WM019		
ID Code (A=Service Ready, B=Not Service Ready) :				MDAP/MAIS Code:			
Resource Summary		Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Procurement Quantity (Units in Each)		-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)		20.836	7.314	9.169	10.784	0.000	10.784
Less PY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)		20.836	7.314	9.169	10.784	0.000	10.784
Plus CY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)		20.836	7.314	9.169	10.784	0.000	10.784
(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:							
<p>WM019 - The Countermeasure Set, Acoustic (CSA) program procures and supports the inboard electronic system necessary for preparing and launching 6" Acoustic Device Countermeasures (ADCs) from all 688i and newer U.S. submarines. This inboard system consists of the Torpedo Defense Controller (TDC), Launch Control Panels (LCPs), and associated cabling, in a class-by-class configuration. The CSA program provides obsolescence support for legacy systems and engineering changes to accommodate modified and planned new devices, such as the ADC MK5. Four efforts are supported: (1) the "Technology Refresh" effort is designing, building, testing and certifying replacement components for obsolete CSA MK2 systems (MOD0/3/4) on 688i SSN and OHIO SSBN submarines, with the refresh occurring in FY16-FY20. (2) The "CSA MK3 Technology Insertion" effort is federating the CSA MK3 system with Submarine Warfare Federated Tactical System (SWFTS) to facilitate the ADC MK5 and Submarine Torpedo Defense Tactical Decision Aid (SubTDS TacDA) upon introduction. A phased approach was taken to allow a more efficient incremental implementation of initial capabilities. Required funding is expected to level off after ADC MK5 device fielding and address recurring upgrades with Technology Insertion/Advanced Processor Build (TI/APB). (3) The "CSA MK4 Technology Insertion" effort replaces CSA MK2 MOD2 with CSA MK4 as a "SWFTS-federated" system on VIRGINIA Class Block I and II submarines (10 hulls) to accommodate the introduction of ADC MK5 devices. Non-recurring engineering, production testing, EQT and SHIPALT/Logistics documentation will continue in FY18, with installs starting in FY19 to better align with overall submarine availabilities scheduling. (4) The fourth effort is the ongoing support of engineering issues across all CSA systems as they arise.</p>							
<p>[WM019 CSA MK3 Engineering Changes (LAN, SWFTS, TDA)] WM019 CSA MK3 Engineering Changes - (LAN, SWFTS, TacDA) - Organic] Technology insertion effort that supports and designs engineering changes for SSGN, SEAWOLF, and VA Blk III and follow ships, including the Countermeasures Set Acoustic (CSA) system, Torpedo Defense Controller (TDC), and Launch Control Panels (LCPs). This supports changes to correct obsolescence, and engineering changes necessary to accommodate modified devices and new devices, such as the ADC MK5.</p>							
<p>[WM019 ECPs CSA MK2 MOD 2 Conversion to MK 4] WM019 - ECPs CSA MK2 MOD2 Conversion to CSA MK4 - Organic] Technology insertion effort that converts CSA MK2 MOD2 to CSA MK4 to accommodate introduction of ADC MK5 to Virginia Class Block 1 and 2 Ships (10 hulls). Proofing will complete in FY18, with replacement installations starting in FY19 to better align with overall submarine availabilities scheduling.</p>							
<p>[WM019 CSA MK2 MOD 0 OBSOLESCENCE] WM019 - CSA MK2 MOD0 Obsolescence - NonOrganic Technical refresh effort that designs, builds, tests and certifies replacement components for obsolete CSA MK2 MOD4 on 688i ships and CSA MK2 MOD0 and 3 on SSBNs. Upgrades will occur in FY16-FY20.</p>							
<p>[WM019 CSAMK2 MOD2 CONVERSION to CSA MK4] WM019 - CSA MK2 MOD2 Conversion to CSA MK4 - Non Organic Technology Insertion effort that procures engineering change kits and systems including Countermeasures Set Acoustic (CSA) system, Torpedo Defense Controller (TDC), Launch Control Panels (LCPs), and CSA support system assets to correct obsolescence, including engineering changes necessary to accommodate modified devices and new devices, such as the ADC MK5.</p>							



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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 3	<b>P-1 Line Item Number / Title:</b> 2210 / Submarine Acoustic Warfare System	<b>Modification Number / Title:</b> 2 / CSA WM019
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :		<b>MDAP/MAIS Code:</b>
<p>[WM019 CSAMK3 Kits and Systems] WM019 - CSA MK3 Kits and Systems - NonOrganic Procures engineering change kits and systems in support of SAWS including Countermeasures Set Acoustic (CSA) system, Torpedo Defense Controller (TDC), Launch Control Panels (LCPs), CSA support system assets to correct obsolescence, including engineering changes necessary to accommodate modified devices and new devices, such as the ADC MK5.</p> <p>[WM019 CSA MK2 MOD 2 Conversion to CSA MK4] WM019 - CSA MK2 MOD2 Conversion to CSA MK4 - Organic Nonrecurring costs for the Technology Insertion CSA MK4.</p> <p>[WM019 CSA ISEA] WM019 - CSA ISEA Supports engineering issues across all systems and platforms as they arise, using ISEA support.</p>		

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 3			<b>P-1 Line Item Number / Title:</b> 2210 / Submarine Acoustic Warfare System		<b>Modification Number / Title:</b> 2 / CSA WM019	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Models of Systems Affected:</b> [No Model Specified]		<b>Modification Type:</b> TBD			<b>Related RDT&amp;E PEs:</b>	
<b>Financial Plan</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
<b>Procurement</b>						
<b>Modification Item 1 of 1:</b> CSA WM019						
B Kits						
Recurring						
1.1.1) WM019 CSA MK3 Engineering Changes (LAN, SWFTS, TDA) - Organic <sup>(13)</sup>	- / 7.591	- / 1.754	- / 0.711	- / 1.813	- / -	- / 1.813
1.1.2) WM019 ECPs CSA MK2 MOD 2 Conversion to MK 4 - Organic <sup>(14)</sup>	- / -	- / -	- / 4.579	- / 2.515	- / -	- / 2.515
1.1.3) WM019 CSA MK2 MOD 0 OBSOLESCENCE - NonOrganic <sup>(15)</sup>	42 / 3.706	- / 0.400	- / 0.650	- / 0.663	- / -	- / 0.663
1.1.4) WM019 CSAMK2 MOD2 CONVERSION to CSA MK4 - NonOrganic <sup>(16)</sup>	- / -	2 / 1.080	3 / 1.652	5 / 2.142	- / -	5 / 2.142
1.1.5) WM019 CSAMK3 Kits and Systems - NonOrganic <sup>(17)</sup>	2 / 0.300	1 / 0.130	- / -	4 / 0.760	- / -	4 / 0.760
<b>Subtotal: Recurring</b>	- / 11.597	- / 3.364	- / 7.592	- / 7.893	- / -	- / 7.893
Non-Recurring						
1.2.1) WM019 CSA MK2 MOD 2 Conversion to CSA MK4 - Organic <sup>(18)</sup>	- / 4.830	- / 2.811	- / -	- / 1.357	- / -	- / 1.357
<b>Subtotal: Non-Recurring</b>	- / 4.830	- / 2.811	- / -	- / 1.357	- / -	- / 1.357
<b>Subtotal: CSA WM019</b>	44 / 16.427	3 / 6.175	3 / 7.592	9 / 9.250	- / -	9 / 9.250
<b>Subtotal: Procurement, All Modification Items</b>	- / 16.427	- / 6.175	- / 7.592	- / 9.250	- / -	- / 9.250
<b>Support (All Modification Items)</b>						
2.1) WM019 CSA ISEA <sup>(19)</sup>	- / 4.409	- / 0.739	- / 0.752	- / 0.771	- / -	- / 0.771
<b>Subtotal: Support</b>	- / 4.409	- / 0.739	- / 0.752	- / 0.771	- / -	- / 0.771
<b>Installation</b>						
<b>Modification Item 1 of 1:</b> CSA WM019	- / 0.000	- / 0.400	- / 0.825	- / 0.763	- / 0.000	- / 0.763
<b>Subtotal: Installation</b>	- / 0.000	- / 0.400	- / 0.825	- / 0.763	- / -	- / 0.763
<b>Total</b>						
<b>Total Cost (Procurement + Support + Installation)</b>	<b>20.836</b>	<b>7.314</b>	<b>9.169</b>	<b>10.784</b>	<b>0.000</b>	<b>10.784</b>

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy						<b>Date:</b> May 2017							
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 3				<b>P-1 Line Item Number / Title:</b> 2210 / Submarine Acoustic Warfare System				<b>Modification Number / Title:</b> 2 / CSA WM019					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :						<b>MDAP/MAIS Code:</b>							
<b>Modification Item 1 of 1:</b> CSA WM019													
<b>Manufacturer Information</b>													
Manufacturer Name: CSA MK3 RAYTHEON						Manufacturer Location: Keyport, WA							
Administrative Leadtime (in Months): 6						Production Leadtime (in Months): 18							
<b>Dates</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018</b>							
Contract Dates		Apr 2016				Apr 2018							
Delivery Dates		Oct 2017				Oct 2019							
Manufacturer Name: CSA MK2 Obsolescence NUWC Keyport						Manufacturer Location: Keyport, WA							
Administrative Leadtime (in Months): 4						Production Leadtime (in Months): 16							
<b>Dates</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018</b>							
Contract Dates		Feb 2016		Feb 2017		Feb 2018							
Delivery Dates		Jun 2017		Jun 2018		Jun 2019							
Manufacturer Name: CSA MK 2 to MK4 RAYTHEON						Manufacturer Location: Keyport, WA							
Administrative Leadtime (in Months): 6						Production Leadtime (in Months): 18							
<b>Dates</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018</b>							
Contract Dates		Apr 2016		Apr 2017		Apr 2018							
Delivery Dates		Oct 2017		Oct 2018		Oct 2019							
<b>Installation Information</b>													
<b>Method of Implementation:</b> ALT:: Installation Name: WM019 CSA MK2 MOD 0 OBSOLESCENCE													
<b>Installation Cost</b>		<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>	
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)	
Prior Years		- / -		8 / 0.400		16 / 0.825		10 / 0.563		0 / 0.000		10 / 0.563	
FY 2016		- / -		- / -		- / -		- / -		- / -		- / -	
FY 2017		- / -		- / -		- / -		- / -		- / -		- / -	
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -	
Total		- / -		8 / 0.400		16 / 0.825		10 / 0.563		0 / 0.000		10 / 0.563	
<b>Installation Schedule</b>													
<b>PYS</b>		<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	-	-	8	-	-	-	-	16	-	-	-	10	-
Out	-	-	8	-	-	-	-	16	-	-	-	10	-

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy										<b>Date:</b> May 2017			
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 3					<b>P-1 Line Item Number / Title:</b> 2210 / Submarine Acoustic Warfare System					<b>Modification Number / Title:</b> 2 / CSA WM019			
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :								<b>MDAP/MAIS Code:</b>					
<b>Modification Item 1 of 1:</b> CSA WM019													
<b>Installation Information</b>													
<b>Method of Implementation:</b> AIT:: Installation Name: WM019 CSAMK2 MOD2 CONVERSION to CSA MK4													
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	-	-	-	-	-	-	-	-	-	-	-	-	-
Out	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Method of Implementation:</b> AIT:: Installation Name: WM019 CSAMK3 Kits and Systems													
<b>Installation Cost</b>	<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>		
	Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		
Prior Years	- / -		- / -		- / -		2 / 0.200		0 / 0.000		2 / 0.200		
FY 2016	- / -		- / -		- / -		- / -		- / -		- / -		
FY 2017	- / -		- / -		- / -		- / -		- / -		- / -		
FY 2018	- / -		- / -		- / -		- / -		- / -		- / -		
Total	- / -		- / -		- / -		2 / 0.200		0 / 0.000		2 / 0.200		
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	-	-	-	-	-	-	-	-	-	2	-	-	-
Out	-	-	-	-	-	-	-	-	-	-	2	-	-
<b>Footnotes:</b>													
(13) For FY18, CSA MK2 MOD2 Conversion to MK4 funds were reduced to accommodate: 1) Increase to CSA MK3 Engineering Changes in FY18 (\$1.3M) to address continuing TI/APB changes;[Line 1.1.1] We will be required to maintain compatibility with SWFTS this includes software development efforts, Environmental Qualification Testing (EQT), NUWC (Newport and Keyport support)and integration with NGCM. This will also develop the Engineering Change Instruction and ShipALT development associated with this effort. 2) Increase to VIRGINIA Block I/II OPN procurements of CSA MK4 systems in FY18 (\$1M) as part of Economical Order Quantity (EOQ) maximization (refer to Footnote 22);and [Line 1.1.4] 3)Increase to CSA MK4 non-recurring costs (\$1.4M)(refer to Footnote 20).[Line 1.2.1].													
(14) The changes needed to include SEAWOLF submarine class to the CSA MK3 connection to SWFTS in FY21.													
(15) Increase to CSA MK2 MOD0 Obsolescence in FY18 (\$0.5M) to address increase in labor needs for logistics preparation in support of installation and Check out (INCO) spares associated with the FY18 installations onboard 688i and SSBN classes [Line 1.1.3]													
(16) Procurement of initial CSA MK4 was updated and shifted to maximize the Economical Order of Quantity (EOQ) for VIRGINIA Block I/II. Furthermore, the line was updated to account for System Kits procurements starting in FY20 at lower unit cost vice the complete systems procured in FY16-19. Also, the CSA MK4 complete system cut from FY17 in earlier budgets is being restored in FY20 to allow completion of the CSA MK 4 on the final VIRGINIA platform. CSA systems after initial suite installation will be updated using hardware kits and software. The kits procurements were added to the line to allow													

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 3	<b>P-1 Line Item Number / Title:</b> 2210 / Submarine Acoustic Warfare System	<b>Modification Number / Title:</b> 2 / CSA WM019
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :		<b>MDAP/MAIS Code:</b>
<p>CSA to meet upgrade/modernization schedules for VIRGINIA Blocks I/II. There was a pricing consideration to buy in better Economic Order Quantities (combining with SCN funding), and so the funding in FY18 was realigned such that the installations are starting in FY19 because they better align to the major availabilities and to accommodate in FY18 planned NRE, EQT (Environmental Quality Testing) of prototype units and SHIPALT and Logistics documentation. Increase to VIRGINIA Block I/II OPN procurements of CSA MK4 systems in FY18 (\$1M) as part of Economical Order Quantity (EOQ) maximization.</p> <p>(17) Procurement of CSA MK3 kits was updated in order to support planned installations, upgrades and modernizations of fielded systems on SSGN and VIRGINIA Block III/IV. The procurement of an additional CSA MK3 kit in FY18 (\$0.4M) to support planned installations in FY20. [Line 1.1.5] Note that two systems procured in FY21 for SEAWOLF class are complete systems vice kits, accounting for the difference in unit costs. The next complete system planned procurement for SEAWOLF class is FY24. There was a pricing consideration to buy in better Economic Order Quantities (combining with SCN funding), and so the funding in FY18 was realigned such that the installations are starting in FY19 because they better align to the major availabilities and to accommodate in FY18 planned NRE, EQT (Environmental Quality Testing) of prototype units and SHIPALT and Logistics documentation.</p> <p>(18) Funding was moved from (line 1.1.2) Increase to CSA MK4 non-recurring costs (\$1.4M). Initial prototyping and the ShipAlt/Logistics documentation.</p> <p>(19) Installations were updated to reflect the current install schedule on Naval Tool for Interoperability Risk Assessment (NTIRA).</p> <p>(22)VIRGINIA Block I/II OPN procurements of initial CSA MK4 to maximize the Economical Order Quantities (EOQ) from 10 systems in FY17-FY20 at \$5.65M to equivalent 10 systems in FY17-FY19 at \$4.65M.</p>		

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy									Date: May 2017			
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 3: ASW Electronic Equipment							P-1 Line Item Number / Title: 2213 / Surface Ship Torpedo Def (SSTD)					
ID Code (A=Service Ready, B=Not Service Ready): B			Program Elements for Code B Items: N/A					Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	149.835	8.396	6.893	12.867	0.000	12.867	11.688	13.659	13.934	14.214	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	149.835	8.396	6.893	12.867	0.000	12.867	11.688	13.659	13.934	14.214	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	149.835	8.396	6.893	12.867	0.000	12.867	11.688	13.659	13.934	14.214	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	0.753	0.535	0.853	-	0.853	0.813	1.862	2.325	2.052	Continuing	Continuing
Flyaway Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Description:												
The Surface Ship Torpedo Defense (SSTD) OPN account procures layered torpedo defense systems to protect surface ships. The account is comprised of the AN/SLQ-25 (NIXIE) system and the Torpedo Warning System (TWS). The AN/SLQ-25 (NIXIE) system provides towed persistent countermeasure capability. The TWS provides automated torpedo detection, classification, localization, and alertment capability.												
WL101 AN/SLQ-25A UPGRADE KITS												
Procures the upgrade to the AN/SLQ-25 (NIXIE) towed acoustic countermeasure system. Upgraded AN/SLQ-25A System to AN/SLQ-25C. The AN/SLQ-25C enhances ship survivability against future torpedo threats. Upgrade kits include the following engineering changes: EC-4/9/10/12/13/14/15/16/17. The upgrades include a more reliable power amplifier, Commercial-off-the-shelf (COTS) Signal Generator with new operational capability, a new Littoral Fiber Optic Tow Cable (LFOTC) for operations in shallow water, and enhanced EC-16 capability (details classified).												
WL102 Torpedo Warning System (TWS)												
Procures the Torpedo Warning System (TWS). TWS is an automated Torpedo Detection, Classification, and Localization (TDCL) system that generates warning alerts on incoming threat torpedoes. The TWS consists of towed active acoustic source and receive sensors, processing cabinets and workstations, and Countermeasure Anti-Torpedo (CAT) ready stows mounted port and starboard. The TWS subfunctional groups are called the Target Acquisition Group (TAG), Tactical Control Group (TCG), and Ready Stow Group (RSG).												
WL104 AN/SLQ-25C EC-2												
In FY 2016 this effort moved to WL106 Engineering Changes, and has dropped the EC-2 modifier.												
WL106 AN/SLQ-25 ENGINEERING CHANGES												
AN/SLQ-25 Engineering Changes consists of three major efforts: (a) Tech Refresh, (b) Software Updates, and (c) Upgrade Kits. (a) Tech Refresh enables response to service identified issues and provides for obsolescence and limiting component availability monitoring. Tech refresh funds hardware and software configuration changes to the production baseline of the AN/SLQ-25 system. These are Fact of Life Technical Insertions to sustain the military service life of the system and reduce the electronics parts count within the current system performance envelope. In FY 2018, nonrecurring effort on the AN/SLQ-25E hardware tech refresh will begin after award of a full and open competitive contract in the 3rd quarter. Nonrecurring software effort will implement a modular software architecture to interface with refreshed commercial hardware. The AN/SLQ-25E sustains production to meet torpedo defense commitments in FY 2020 and beyond. (b) Software Updates provides for continued fielding of the Engineering Change (EC) updates, including EC-1 and EC-3, to the AN/SLQ-25C system to address outstanding issues that could render key functions inoperable without modification. Software Updates provides for investigation and												

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 3: ASW Electronic Equipment		P-1 Line Item Number / Title: 2213 / Surface Ship Torpedo Def (SSTD)
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
resolution of AN/SLQ-25C Trouble Reports. (c) Upgrade Kit procurement upgrades to the AN/SLQ-25C to resolve obsolescence and modernize baselines. Upgrade Kits provides for cyber security and program protection updates. Upgrade Kit provides for investigation and resolution of AN/SLQ-25C Trouble Reports.		
The Surface Ship Torpedo Defense program uses P-40 resources to fund In-Service Engineering Agent (ISEA) support to the Fleet, government oversight of contractor production and contractor consulting services in FY17 and prior. In FY18 and out production support costs below are included in the P3a exhibits to show total costs of the systems.		
WL830 PRODUCTION ENGINEERING (IN-HOUSE) Funding provides specification preparation and validation, production planning, contract deliverable monitoring, prime contractor monitoring for cost, schedule, and performance and ILS planning, review and evaluation of obsolescence issues, and coordination of government furnished information (GFI) and government furnished equipment (GFE).		
WL840 QUALITY ASSURANCE Funding under this cost code provides for quality assurance efforts including conducting quality assurance reviews of the contractor and subcontractors, documentation indicating contractor conformity to product performance requirements, and review of objective quality evidence. In FY17 the Torpedo Warning System (TWS) manufacture quality will be assessed and evaluated for the five systems that have been installed on CVNs.		
WL860 ACCEPTANCE TEST & ENGINEERING Funding under this cost code provides for production acceptance of contractor hardware. In FY17 the Torpedo Warning System functionality and acceptance testing will be completed on the five systems that have been installed on CVNs. Acceptance testing includes government acceptance testing support with operationally trained subject matter experts and software support engineers. System functionality support after CVN install is required on both coasts of the United States.		
WL900 PRODUCTION ENGINEERING (OUT-HOUSE) Consulting services for FY 2012 and prior provide production monitoring, installation planning and coordination support.		
WL900 CONSULTING SERVICES Funding under this cost code provides for contractor support to the program office for production monitoring, installation planning and coordination support.		
WL905 PRODUCTION ENGINEERING CONTRACTOR Funding under this cost code provides for production engineering tasks performed by the hardware contractor.		



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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy										<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 3: ASW Electronic Equipment							<b>P-1 Line Item Number / Title:</b> 2225 / Fixed Surveillance System					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A				<b>Program Elements for Code B Items:</b> N/A				<b>Other Related Program Elements:</b> N/A				
<b>Line Item MDAP/MAIS Code:</b> N/A												
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>To Complete</b>	<b>Total</b>
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	1,118.826	146.968	145.701	300.102	0.000	300.102	246.450	109.605	109.073	111.255	Continuing	Continuing
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	1,118.826	146.968	145.701	300.102	0.000	300.102	246.450	109.605	109.073	111.255	Continuing	Continuing
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>1,118.826</b>	<b>146.968</b>	<b>145.701</b>	<b>300.102</b>	<b>0.000</b>	<b>300.102</b>	<b>246.450</b>	<b>109.605</b>	<b>109.073</b>	<b>111.255</b>	<b>Continuing</b>	<b>Continuing</b>
<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> )	-	-	-	-	-	-	-	-	-	-	-	-
<p><b>Description:</b>  Additional details with respect to this line item are held at a higher classification. This line item is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.</p> <p>[P40A / Classified (2225)]: Additional details with respect to this line item are held at a higher classification. This line item is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.</p> <p>[P40A / Classified (222506)]: Additional details with respect to this line item are held at a higher classification. This line item is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.</p>												

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy								<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 3: ASW Electronic Equipment						<b>P-1 Line Item Number / Title:</b> 2225 / Fixed Surveillance System				
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A				<b>Program Elements for Code B Items:</b> N/A			<b>Other Related Program Elements:</b> N/A			
<b>Line Item MDAP/MAIS Code:</b> N/A										
Exhibits Schedule					Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Fixed Surveillance System				- / 1,118.826	- / 146.968	- / 145.701	- / 300.102	- / -	- / 300.102
<b>P-40</b>	<b>Total Gross/Weapon System Cost</b>				<b>- / 1,118.826</b>	<b>- / 146.968</b>	<b>- / 145.701</b>	<b>- / 300.102</b>	<b>- / 0.000</b>	<b>- / 300.102</b>
<small>*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.</small>										
<small>Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.</small>										

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy															Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3							P-1 Line Item Number / Title: 2225 / Fixed Surveillance System								Aggregated Items Title: Fixed Surveillance System					
Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
1) Classified																				
1.1) Classified (2225)	A		-	-	1,046.677	-	-	140.188	-	-	138.699	-	-	293.118	-	-	-	-	-	293.118
1.2) Classified (222506)	A		-	-	72.149	-	-	6.780	-	-	7.002	-	-	6.984	-	-	-	-	-	6.984
Subtotal: 1) Classified			-	-	1,118.826	-	-	146.968	-	-	145.701	-	-	300.102	-	-	-	-	-	300.102
Total			-	-	1,118.826	-	-	146.968	-	-	145.701	-	-	300.102	-	-	-	-	-	300.102

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

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy										<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 3: ASW Electronic Equipment							<b>P-1 Line Item Number / Title:</b> 2237 / SURTASS					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A				<b>Program Elements for Code B Items:</b> N/A				<b>Other Related Program Elements:</b> 0204311N				
<b>Line Item MDAP/MAIS Code:</b> N/A												
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>To Complete</b>	<b>Total</b>
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	102.136	26.153	46.136	30.180	0.000	30.180	19.918	23.254	28.545	25.545	Continuing	Continuing
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	102.136	26.153	46.136	30.180	0.000	30.180	19.918	23.254	28.545	25.545	Continuing	Continuing
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>102.136</b>	<b>26.153</b>	<b>46.136</b>	<b>30.180</b>	<b>0.000</b>	<b>30.180</b>	<b>19.918</b>	<b>23.254</b>	<b>28.545</b>	<b>25.545</b>	<b>Continuing</b>	<b>Continuing</b>
<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> )	-	0.795	-	2.111	-	2.111	1.851	2.839	6.449	2.205	Continuing	Continuing
Flyaway Unit Cost ( <i>\$ in Dollars</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ( <i>\$ in Dollars</i> )	-	-	-	-	-	-	-	-	-	-	-	-

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

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

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

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

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

A cost sharing agreement with Japan also provides a shore site and two Japanese SWATH ships with similar capability to the T-AGOS SWATH ships for the Western Pacific region. The Japanese Auxiliary Ocean Surveillance (JAOS) ships will be upgraded to the TL-29A array beginning in FY17.

[P3A - 5 / VG007 - Field Changes/Modifications]: VG007  
 Field Changes/Modifications - Provide for correction of deficiencies identified by Fleet use, array support equipment, communications equipment, and replacement of aging/unsupportable equipment.

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 3: ASW Electronic Equipment		<b>P-1 Line Item Number / Title:</b> 2237 / SURTASS
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A	<b>Program Elements for Code B Items:</b> N/A	<b>Other Related Program Elements:</b> 0204311N
<b>Line Item MDAP/MAIS Code:</b> N/A		
VG776 Installation of Equipment - Installation Agents: SSC LANT, SSC PAC, Military Sealift Command, and Lockheed Martin.		

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy								<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 3: ASW Electronic Equipment						<b>P-1 Line Item Number / Title:</b> 2237 / SURTASS				
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A			<b>Program Elements for Code B Items:</b> N/A			<b>Other Related Program Elements:</b> 0204311N				
<b>Line Item MDAP/MAIS Code:</b> N/A										
Exhibits Schedule					Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 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	VG006 - Theater Anti-Submarine Warfare (TASW)				- / 14.200	- / 13.200	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-40a	VG006 - TL-29A. Twinline Arrays				- / 44.687	- / 0.000	- / 34.000	- / 1.785	- / 0.000	- / 1.785
P-40a	VG006 - SURTASS Team Trainer				- / 2.000	- / 4.590	- / 1.277	- / 4.194	- / 0.000	- / 4.194
P-3a	2 / VG006 - Integrated Common Processor (TBD)				- / 30.077	- / 7.317	- / 9.756	- / 13.052	- / 0.000	- / 13.052
P-3a	5 / VG007 - Field Changes/Modifications (TBD)				- / 11.172	- / 1.046	- / 1.103	- / 11.149	- / 0.000	- / 11.149
<b>P-40</b>	<b>Total Gross/Weapon System Cost</b>				<b>- / 102.136</b>	<b>- / 26.153</b>	<b>- / 46.136</b>	<b>- / 30.180</b>	<b>- / 0.000</b>	<b>- / 30.180</b>
*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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<b>Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy</b>															<b>Date:</b> May 2017				
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 3								<b>P-1 Line Item Number / Title:</b> 2237 / SURTASS							<b>Aggregated Items Title:</b> VG006 - Theater Anti-Submarine Warfare (TASW)				

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring																				
Theater Anti-Submarine Warfare -- Procurement <sup>(1)</sup>	A		14,200K	1	14.200	13,200K	1	13.200	-	-	-	-	-	-	-	-	-	-	-	-
Theater Anti-Submarine Warfare -- Installation	A		-	-	-	-	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: B Kits/Recurring			-	-	14.200	-	-	13.200	-	-	-	-	-	-	-	-	-	-	-	-
Total			-	-	14.200	-	-	13.200	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000

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

**Remarks:**

Procurement of TL-29 Twin-line Towed Array support equipment.

**Footnotes:**

<sup>(1)</sup> FY19 installation will be accomplished as part of the system groom regularly scheduled during that timeframe.



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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy															Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3						P-1 Line Item Number / Title: 2237 / SURTASS						Aggregated Items Title: VG006 - TL-29A. Twinline Arrays								
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring																				
J-AOS/U.S. Twinline Arrays -- Procurement (2)	A		5,473K	8	43.787	-	-	-	11,333K	3	34.000	1,785K	1	1.785	-	-	-	1,785K	1	1.785
J-AOS/U.S. Twinline Arrays -- Installation	A		-	-	0.900	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: B Kits/Recurring			-	-	44.687	-	-	-	-	-	34.000	-	-	1.785	-	-	-	-	-	1.785
Total			-	-	44.687	-	-	0.000	-	-	34.000	-	-	1.785	-	-	0.000	-	-	1.785
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
Remarks: Models of Systems Affected: TL-29A Twinline Arrays																				
The TB-29A Twinline is a shallow water variant of the common array produced by NAVSEA. The array consists of 2 shorter array lengths and array support equipment, and is designed for increased surveillance capability in high clutter environments and littoral areas. Funding in FY18-FY22 is also provided to refurbish existing TL-29A array legs. Support equipment procurement is for ancillary test sets, array headline and roll control systems, tow cables, and array leader cables.																				
Footnotes: (2) The TB-29A Twinline is a shallow water variant of the common array produced by NAVSEA. The array consists of 2 shorter array lengths and array support equipment, and is designed for increased surveillance capability in high clutter environments and littoral areas. Support equipment procurement is for ancillary test sets, array headline and roll control systems, tow cable, and leader cables. Installation funding is not required for the support equipment. FY18-FY22 fund refurbishment of one (1) to two (2) array legs per year. Cost Variability: In FY17, a U.S. array was added to the SURTASS budget for \$9M, while a J-AOS TL-29A array upgrade was added for \$15M. The entire \$6M increase above inflation is related to the J-AOS program requirement. The U.S. system being procured is essentially identical to the array procured in FY12 (two array legs WITHOUT associated towing hardware, dry end equipment, or installation costs). For the J-AOS TL-29A procurement, costs are associated with upgrading to a new array type and array support infrastructure, including two complete towed arrays and associated tow hardware and dry end equipment, as well as a third array procured in FY21. The program is funded with both FMS and OPN, and the \$15M in FY17 and \$9.4M in FY21 represent the U.S. share of the total cost of the J-AOS TL-29A upgrade program. Installation Remarks: Installation only occurs on 5 platforms. Historically, an array is lost or severely damaged every 18 months. Last array was lost Sept 06, last array severely damaged was Jul 14 - this array in use as a ready asset in theater. Without a ready asset in theater, if an array is lost or damaged, a SURTASS ship cannot deploy and execute its mission. Future assets to be delivered are initially provided as ready assets, and installed as needed.																				

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy															Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 3						P-1 Line Item Number / Title: 2237 / SURTASS									Aggregated Items Title: VG006 - SURTASS Team Trainer					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring																				
SURTASS Team Trainer -- Procurement <sup>(3)</sup>	A		1,751K	1	1.751	4,590K	1	4.590	-	-	-	4,194K	1	4.194	-	-	-	4,194K	1	4.194
SURTASS Team Trainer -- Installation	A		-	-	0.249	-	-	-	-	-	1.277	-	-	-	-	-	-	-	-	-
Subtotal: B Kits/Recurring			-	-	2.000	-	-	4.590	-	-	1.277	-	-	4.194	-	-	-	-	-	4.194
Total			-	-	2.000	-	-	4.590	-	-	1.277	-	-	4.194	-	-	0.000	-	-	4.194
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
Remarks: Models of Systems Affected: SURTASS Team Trainer																				
The SURTASS Team Trainer (STT) provides SURTASS crews with two high fidelity synthetic and live playback training capabilities to support Home Port Training Periods (HPTP) and Pre-Deployment Certification Periods (PDCP). Each trainer will be refreshed on a 4 year cycle with the last refresh in FY16. Tech Refresh for 2nd trainer will be in FY18 with installation the following year. Tech refresh for the STTs will continue on this cycle. The 4-7% procurement cost growth between FY18, FY20, and FY22 accounts for the additional team trainer capabilities incorporated to provide operators with the means to address more sophisticated threat targets and environments. Similarly, installation costs increase slightly from FY17 to FY19 as a result of additional integration and testing considerations related to the more sophisticated trainer.																				
Footnotes: <sup>(3)</sup> The Team Trainer provides SURTASS crews with two high fidelity synthetic and live playback training capabilities to support Home Port Training Periods (HPTP) and Pre-Deployment Certification Periods (PDCP).																				

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 3			<b>P-1 Line Item Number / Title:</b> 2237 / SURTASS		<b>Modification Number / Title:</b> 2 / VG006 - Integrated Common Processor	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	30.077	7.317	9.756	13.052	0.000	13.052
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	30.077	7.317	9.756	13.052	0.000	13.052
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
<b>Total Obligation Authority</b> <i>(\$ in Millions)</i>	<b>30.077</b>	<b>7.317</b>	<b>9.756</b>	<b>13.052</b>	<b>0.000</b>	<b>13.052</b>
<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>	-	-	-	-	-	-
<p><b>Description:</b> FY16 and out-year funding continues cyclical ICP technical refresh of hardware.</p> <p>ICP system configuration varies from ship to ship depending upon the type of arrays used (passive only, or passive and active). Additionally, Tech refresh efforts can be more significant in some years than others based on a range of factors, which include end of life components that require refresh; the need to incorporate significant cyber security and program protection related requirements, inspections and testing into a particular ICP system undergoing refresh; or the need to update Configuration Control Models (CCMs) or Engineering Measurements Program (EMP) systems for each major hardware refresh. Accordingly, the procurement and installation costs will vary from one platform to another, depending on the configuration and the ship.</p>						

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy						<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 3			<b>P-1 Line Item Number / Title:</b> 2237 / SURTASS			<b>Modification Number / Title:</b> 2 / VG006 - Integrated Common Processor	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :					<b>MDAP/MAIS Code:</b>		
<b>Models of Systems Affected:</b> Integrated Common Processor			<b>Modification Type:</b> TBD			<b>Related RDT&amp;E PEs:</b> 0204311N	
<b>Financial Plan</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
<b>Procurement</b>							
<b>Modification Item 1 of 1:</b> VG006 - Integrated Common Processor							
B Kits							
Recurring							
1.1.1) Integrated Common Processor - NonOrganic <sup>(4)</sup>		18 / 24.293	5 / 5.067	5 / 7.556	7 / 10.652	- / -	7 / 10.652
<b>Subtotal: Recurring</b>		- / 24.293	- / 5.067	- / 7.556	- / 10.652	- / -	- / 10.652
<b>Subtotal: VG006 - Integrated Common Processor</b>		18 / 24.293	5 / 5.067	5 / 7.556	7 / 10.652	- / -	7 / 10.652
<b>Subtotal: Procurement, All Modification Items</b>		- / 24.293	- / 5.067	- / 7.556	- / 10.652	- / -	- / 10.652
<b>Installation</b>							
<b>Modification Item 1 of 1:</b> VG006 - Integrated Common Processor		- / 5.784	- / 2.250	- / 2.200	- / 2.400	- / 0.000	- / 2.400
<b>Subtotal: Installation</b>		- / 5.784	- / 2.250	- / 2.200	- / 2.400	- / -	- / 2.400
<b>Total</b>							
<b>Total Cost (Procurement + Support + Installation)</b>		30.077	7.317	9.756	13.052	0.000	13.052

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy						<b>Date:</b> May 2017							
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 3				<b>P-1 Line Item Number / Title:</b> 2237 / SURTASS				<b>Modification Number / Title:</b> 2 / VG006 - Integrated Common Processor					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :						<b>MDAP/MAIS Code:</b>							
<b>Modification Item 1 of 1:</b> VG006 - Integrated Common Processor													
<b>Manufacturer Information</b>													
Manufacturer Name: Lockheed Martin						Manufacturer Location: VA							
Administrative Leadtime (in Months): 2						Production Leadtime (in Months): 12							
<b>Dates</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018</b>							
Contract Dates		Jan 2016		Jan 2017		Jan 2018							
Delivery Dates		Jan 2017		Jan 2018		Jan 2019							
Manufacturer Name: Various						Manufacturer Location: Various							
Administrative Leadtime (in Months): 2						Production Leadtime (in Months): 12							
<b>Dates</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018</b>							
Contract Dates		Jan 2016		Jan 2017		Jan 2018							
Delivery Dates		Jan 2017		Jan 2018		Jan 2019							
<b>Installation Information</b>													
<b>Method of Implementation:</b> AIT (Alteration Installation Team):: Installation Name: Integrated Common Processor													
<b>Installation Cost</b>		<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>	
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)	
Prior Years		13 / 5.784		5 / 2.250		- / -		- / -		- / -		- / -	
FY 2016		- / -		- / -		5 / 2.200		- / -		- / -		- / -	
FY 2017		- / -		- / -		- / -		5 / 2.400		0 / 0.000		5 / 2.400	
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -	
Total		13 / 5.784		5 / 2.250		5 / 2.200		5 / 2.400		0 / 0.000		5 / 2.400	
<b>Installation Schedule</b>													
<b>PYS</b>		<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	13	-	-	3	2	-	-	3	2	-	-	3	2
Out	11	2	-	-	3	2	-	-	3	2	-	-	3
<b>Footnotes:</b>													
<sup>(4)</sup> ICP system configuration varies from ship to ship depending upon the type of arrays used (passive only, or passive and active). Additionally, cyclical technical refresh efforts can be more significant in some years than others based on a range of factors, which include end of life components that require refresh; the need to incorporate significant cyber security and program protection related requirements,													

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 3	<b>P-1 Line Item Number / Title:</b> 2237 / SURTASS	<b>Modification Number / Title:</b> 2 / VG006 - Integrated Common Processor
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :		<b>MDAP/MAIS Code:</b>
<p>inspections and testing into a particular ICP system undergoing refresh; or the need to update Configuration Control Models (CCMs) or Engineering Measurements Program (EMP) systems for each major hardware refresh. Accordingly, the procurement and installation costs will vary from one platform to another, depending on the configuration and the ship.</p>		

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 3	<b>P-1 Line Item Number / Title:</b> 2237 / SURTASS	<b>Modification Number / Title:</b> 5 / VG007 - Field Changes/Modifications

<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :			<b>MDAP/MAIS Code:</b>			
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	11.172	1.046	1.103	11.149	0.000	11.149
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	11.172	1.046	1.103	11.149	0.000	11.149
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
<b>Total Obligation Authority</b> <i>(\$ in Millions)</i>	<b>11.172</b>	<b>1.046</b>	<b>1.103</b>	<b>11.149</b>	<b>0.000</b>	<b>11.149</b>
<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:**

Field Changes/Modifications for correction of deficiencies identified by Fleet use, array support, communications equipment and replacement of aging/unsupportable equipment. Additional FY18-FY22 funding will facilitate transition to an upgraded command and control system, including installation of the Consolidated Afloat Network Enterprise System (CANES). Other aging End-of-life systems, including Global Command and Control System-Maritime (GCCS-M), UHF Line-of-sight Satellite (LOS/SAT), and ship's gyros will need to be replaced in order to ensure continuity of operations should the primary acoustic path to shore become inoperable.

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

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 3			<b>P-1 Line Item Number / Title:</b> 2237 / SURTASS		<b>Modification Number / Title:</b> 5 / VG007 - Field Changes/Modifications	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Models of Systems Affected:</b> Field Changes/ Modifications		<b>Modification Type:</b> TBD			<b>Related RDT&amp;E PEs:</b>	
<b>Financial Plan</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
<b>Procurement</b>						
<i>Modification Item 1 of 1:</i> VG007 - Field Changes/ Modifications						
B Kits						
Recurring						
1.1.1) Field Changes/Modifications - NonOrganic <sup>(5)</sup>	63 / 7.680	5 / 0.661	5 / 0.637	5 / 10.828	- / -	5 / 10.828
<i>Subtotal: Recurring</i>	- / 7.680	- / 0.661	- / 0.637	- / 10.828	- / -	- / 10.828
<i>Subtotal: VG007 - Field Changes/Modifications</i>	63 / 7.680	5 / 0.661	5 / 0.637	5 / 10.828	- / -	5 / 10.828
<i>Subtotal: Procurement, All Modification Items</i>	- / 7.680	- / 0.661	- / 0.637	- / 10.828	- / -	- / 10.828
<b>Installation</b>						
<i>Modification Item 1 of 1:</i> VG007 - Field Changes/ Modifications	- / 3.492	- / 0.385	- / 0.466	- / 0.321	- / 0.000	- / 0.321
<i>Subtotal: Installation</i>	- / 3.492	- / 0.385	- / 0.466	- / 0.321	- / -	- / 0.321
<b>Total</b>						
<b>Total Cost (Procurement + Support + Installation)</b>	<b>11.172</b>	<b>1.046</b>	<b>1.103</b>	<b>11.149</b>	<b>0.000</b>	<b>11.149</b>



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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy							<b>Date:</b> May 2017						
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 3				<b>P-1 Line Item Number / Title:</b> 2237 / SURTASS				<b>Modification Number / Title:</b> 5 / VG007 - Field Changes/Modifications					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :							<b>MDAP/MAIS Code:</b>						
<b>Modification Item 1 of 1:</b> VG007 - Field Changes/Modifications													
<b>Manufacturer Information</b>													
Manufacturer Name: SSC PAC							Manufacturer Location: San Diego, CA						
Administrative Leadtime (in Months): 2							Production Leadtime (in Months): 10						
<b>Dates</b>		<b>FY 2016</b>			<b>FY 2017</b>			<b>FY 2018</b>					
Contract Dates		Nov 2015			Nov 2016			Nov 2017					
Delivery Dates		Sep 2016			Sep 2017			Sep 2018					
Manufacturer Name: SSC LANT							Manufacturer Location: Charleston, SC						
Administrative Leadtime (in Months): 2							Production Leadtime (in Months): 10						
<b>Dates</b>		<b>FY 2016</b>			<b>FY 2017</b>			<b>FY 2018</b>					
Contract Dates		Nov 2015			Nov 2016			Nov 2017					
Delivery Dates		Sep 2016			Sep 2017			Sep 2018					
Manufacturer Name: Lockheed Martin							Manufacturer Location: VA						
Administrative Leadtime (in Months): 2							Production Leadtime (in Months): 10						
<b>Dates</b>		<b>FY 2016</b>			<b>FY 2017</b>			<b>FY 2018</b>					
Contract Dates		Nov 2015			Nov 2016			Nov 2017					
Delivery Dates		Sep 2016			Sep 2017			Sep 2018					
<b>Installation Information</b>													
<b>Method of Implementation:</b> AIT (Alteration Installation Team):: Installation Name: Field Changes/Modifications													
<b>Installation Cost</b>		<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>	
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)	
Prior Years		63 / 3.492		- / -		- / -		- / -		- / -		- / -	
FY 2016		- / -		5 / 0.385		- / -		- / -		- / -		- / -	
FY 2017		- / -		- / -		5 / 0.466		- / -		- / -		- / -	
FY 2018		- / -		- / -		- / -		5 / 0.321		0 / 0.000		5 / 0.321	
Total		63 / 3.492		5 / 0.385		5 / 0.466		5 / 0.321		0 / 0.000		5 / 0.321	
<b>Installation Schedule</b>													
<b>PYS</b>		<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	63	-	-	-	5	-	-	-	5	-	-	-	5
Out	63	-	-	-	5	-	-	-	5	-	-	-	5

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 3	<b>P-1 Line Item Number / Title:</b> 2237 / SURTASS	<b>Modification Number / Title:</b> 5 / VG007 - Field Changes/Modifications
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :		<b>MDAP/MAIS Code:</b>
<b>Footnotes:</b> <sup>(5)</sup> Field Changes/Modifications for correction of deficiencies identified by Fleet use, array support, communications equipment and replacement of aging/unsupportable equipment. Additional FY18-FY22 funding will facilitate transition to an upgraded command and control system, including installation of the Consolidated Afloat Network Enterprise System (CANES). Other aging End-of-life systems, including Global Command and Control System-Maritime (GCCS-M), UHF Line-of-sight Satellite (LOS/SAT), and ship's gyros will need to be replaced in order to ensure continuity of operations should the primary acoustic path to shore become inoperable.		

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy										<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 3: ASW Electronic Equipment							<b>P-1 Line Item Number / Title:</b> 2246 / Maritime Patrol and Reconnaissance Force					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A				<b>Program Elements for Code B Items:</b> N/A				<b>Other Related Program Elements:</b> 0604231N				
<b>Line Item MDAP/MAIS Code:</b> N/A												
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>To Complete</b>	<b>Total</b>
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	76.626	13.725	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	90.351
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	76.626	13.725	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	90.351
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>76.626</b>	<b>13.725</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>-</b>	<b>90.351</b>
<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> )	-	0.722	0.357	-	-	-	-	-	-	-	-	1.079
Flyaway Unit Cost ( <i>\$ in Thousands</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ( <i>\$ in Thousands</i> )	-	-	-	-	-	-	-	-	-	-	-	-

**Description:**  
Commencing in FY17 this line item was consolidated with OPN LI 2906 (PE 0204660N), to align TacMobile C4I procurements with TacMobile MPRF P-8A Aircraft Support Systems procurements.

Tactical/Mobile (TacMobile) Maritime Patrol and Reconnaissance Force (MPRF) systems : Tactical/Mobile (TacMobile) Maritime Patrol and Reconnaissance Force Systems provide the MPRF commanders with the capability to plan, direct, control and evaluate the tactical operations of MPRF and other assigned units within their respective area of responsibility. These operations include littoral, open ocean, and over land all sensor (e.g., Electro Optical (EO), Infrared (IR), Inverse Synthetic-Aperture Radar (ISAR)) surveillance, anti-surface warfare, over-the-horizon targeting, counter-drug operations, power projection, antisubmarine warfare, mining, search and rescue, homeland defense, and special operations.

The program includes fixed-site Tactical Operations Centers (TOCs) and Mobile Tactical Operations Centers (MTOCs) or equivalent. Each TacMobile unit is a system-of-systems. TOCs provide sensor and tactical data communications systems; mission planning/mission support, sensor analysis capabilities; avionics and weapons system interfaces, media devices and data handling capabilities, at fixed-site locations. MTOC is a scalable, mobile version of the TOC for contingency operations and for support of operations from remote forward operating airfields.

The TacMobile program uses an evolutionary development strategy consisting of incremental upgrades to meet new and emergent Fleet requirements, while retaining current capabilities. Increments are planned and resourced to support the MPRF Family of Systems aircraft: P-8A Poseidon aircraft and its upgrades; Advanced Airborne Sensor (AAS); and MQ-4C Triton.

7 TOCs: 6 operational systems (located at Jacksonville Florida, Sigonella Italy, Kaneohe Bay Hawaii, Whidbey Island Washington, Kadena Japan, and Bahrain), 1 laboratory system (the "TacMobile Systems Integration Lab" (TMSIL), collocated at SSC Atlantic detachment Patuxent River Maryland with PMA-290's P-8A "Pax River Systems Integration Lab" (PAXSIL)).

15 MTOCs: 9 operational systems (homeported at Jacksonville Florida (5 sites), Whidbey Island Washington (2 sites), and Coronado (North Island) California (2 sites)), 1 laboratory system (an aircraft integration lab located at Navy Detachment Dallas), 1 C4I engineering and maintenance support system (located at the In Service Engineering Activity (ISEA), SSC Atlantic), 1 C4I mobile systems schoolhouse (located at the Center for Naval Air Technical Training (CNATT) Jacksonville Florida) and 3 legacy systems awaiting End-to-End refresh/recapitalization to meet current operational configuration/requirements (SSC Lant).

This line item upgrades TOC/MTOC sensor analysis, mission planning, in-flight mission support capabilities, avionics and weapons system interfaces, computer upgrades and associated software for interfacing, analysis and processing equipment to the supported weapons systems (aircraft). Additionally, the line item upgrades mobility and facilities equipment necessary to power and support the processing equipment and interfaces.

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		Date: May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 3: ASW Electronic Equipment		<b>P-1 Line Item Number / Title:</b> 2246 / Maritime Patrol and Reconnaissance Force
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0604231N
Line Item MDAP/MAIS Code: N/A		

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy										<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 4: Electronic Warfare Equipment							<b>P-1 Line Item Number / Title:</b> 2312 / AN/SLQ-32					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A				<b>Program Elements for Code B Items:</b> 0204228N				<b>Other Related Program Elements:</b> N/A				
<b>Line Item MDAP/MAIS Code:</b> N/A												
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>To Complete</b>	<b>Total</b>
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	536.032	259.271	274.892	240.433	0.000	240.433	399.516	533.644	709.028	486.957	1,182.010	4,621.783
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	536.032	259.271	274.892	240.433	0.000	240.433	399.516	533.644	709.028	486.957	1,182.010	4,621.783
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>536.032</b>	<b>259.271</b>	<b>274.892</b>	<b>240.433</b>	<b>0.000</b>	<b>240.433</b>	<b>399.516</b>	<b>533.644</b>	<b>709.028</b>	<b>486.957</b>	<b>1,182.010</b>	<b>4,621.783</b>
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares ( <i>\$ in Millions</i> )	-	4.228	1.002	11.976	-	11.976	8.978	11.334	12.590	10.424	Continuing	Continuing
Flyaway Unit Cost ( <i>\$ in Dollars</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ( <i>\$ in Dollars</i> )	-	-	-	-	-	-	-	-	-	-	-	-

**Description:**

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

TC056: SURFACE ELECTRONIC WARFARE (EW) IMPROVEMENTS BLOCK 1

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

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

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

Block 1B3: High Gain High Sensitivity (HGHS) Adjunct Sensor is a critical improvement for threat correlation, situational awareness, and extending the battle space. Development Status/Major Development Milestones are: Milestone C/Low-Rate Initial Production (LRIP) 4Q FY12, Full Rate Production (FRP) 4Q FY16. Engineering Change Proposal (ECP) funding is provided to support changes resulting from software and hardware trouble reports from production, shipboard installations and/or land based testing. Tech Refresh funding is provided to address obsolescence and reliability issues affecting fielded systems. The SEWIP Block 1B3 and Block 2 units are installed conjunctively to compose the AN/SLQ-32(V)6 system. The SEWIP Block 1B3, Block 2 and Block 3 units are installed conjunctively to compose the AN/SLQ-32(V)7 system. The SEWIP Block 1B3 P-3a funding has been broken out to separately show systems installed with SEWIP Block 2 (FMP Block 1B3 for SLQ-32 (V)6 ) and systems installed with SEWIP Block 2 and Block 3 (FMP Block 1B3 for SLQ-32 (V)7). For FMP Block 1B3 systems for SLQ-32 (V)7, production lead times for Block 1B3 are 15 months and these systems are then delivered to the Block 3 OEM 180 days prior to delivery as part of an integrated SLQ-32 (V)7 system. The 180 days is required for integration and testing with SEWIP Block 3 at the OEM facility.

TC059: SURFACE ELECTRONIC WARFARE (EW) IMPROVEMENTS BLOCK 2

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 4: Electronic Warfare Equipment		P-1 Line Item Number / Title: 2312 / AN/SLQ-32
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: 0204228N	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>Block 2 will provide AN/SLQ-32(V) an upgraded antenna, receiver, and combat systems interface. The upgrades will pace the threat, improve detection and accuracy and mitigate Electromagnetic Interference (EMI). Development Status/Major Development Milestones are: Milestone C Low-Rate Initial Production (LRIP) 4Q FY13, Full Rate Production (FRP) 4Q FY16. Engineering Change Proposal (ECP) funding is provided to support changes resulting from software and hardware trouble reports from production, shipboard installations and/or land based testing. Tech Refresh funding is provided to address obsolescence and reliability issues affecting fielded systems. The Block 2 hardware cost includes the SEWIP Block 2 ES system, SLA-10D blanker, Common Processing System, Common Display System, Liquid Conditioning Unit and Data Adaptation Processor. Block 2 Lite is a variant of the Block 2 specifically tailored for the needs of small ships, such as LCS, OPC and the Fast Frigate, to address fleet emergent needs for a robust, capable, and sustainable EW system, that meets the space, weight and power limitations of these smaller ships. The SEWIP Block 1B3 and Block 2 units are installed conjunctively and compose the AN/SLQ-32(V)6 system. The SEWIP Block 1B3, Block 2 and Block 3 units are installed conjunctively to compose the AN/SLQ-32(V)7 system. The SEWIP Block 2 P-3a funding has been broken out to separately show systems installed with SEWIP Block 1B3 (FMP Block 2 for SLQ-32 (V)6 ) and systems installed with SEWIP Block 1B3 and Block 3 (FMP Block 2 for SLQ-32 (V)7). For FMP Block 2 systems for SLQ-32 (V)7, production lead times for Block 2 are 17 months and these systems are then delivered to the Block 3 OEM 180 days prior to delivery as part of an integrated SLQ-32 (V)7 system. The 180 days is required for integration and testing with SEWIP Block 3 at the OEM facility.</p>		
<p>TC060: SURFACE ELECTRONIC WARFARE (EW) IMPROVEMENTS BLOCK 3:</p> <p>Block 3 will provide an Electronic Attack (EA) capability improvement required for the AN/SLQ-32(V) system to keep pace with the threat. The upgrade will provide a common EA capability to all surface combatants (CVN, CG, DDG, LHA) outfitted with the active variant of the AN/SLQ-32, mainly the (V)3 and (V)4, as well as select new-construction platforms. The program builds on the EW Electronic Support (ES) capability delivered by Blocks 1 and 2. Development Status/Major Milestones are: Long Lead Materials will be procured Q4 FY17, Milestone C Low-Rate Initial Production (LRIP) Q4 FY18, IOT&amp;E Q1 FY21, FRP is Q3 FY21. The SEWIP Block 1B3, Block 2 and Block 3 units are installed conjunctively to compose the AN/SLQ-32(V)7 system.</p>		
<p>Block 3T (AN/SLQ-59) will provide an Electronic Attack (EA) capability improvement required for the AN/SLQ32(V) system to keep pace with the threat. Block 3T provides initial, limited interim capability of a focused application of the Naval Research Lab (NRL) Transportable EW Module (TEWM) system to meet an urgent operational needs statement.</p>		
<p>TC5IN: FMP INSTALLATIONS</p> <p>Shipboard installation of AN/SLQ-32(V) ECP/Field Changes and the Surface EW Improvements Blocks 1, 2 and 3.</p>		
<p>TC6IN: NON-FMP INSTALLATIONS</p> <p>Installation of AN/SLQ-32(V) ECP/Field Changes and the Surface EW Improvements Blocks 1, 2 and 3 at Shore Site Facilities.</p>		

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy	<b>Date:</b> May 2017
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<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 4: Electronic Warfare Equipment	<b>P-1 Line Item Number / Title:</b> 2312 / AN/SLQ-32
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<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A	<b>Program Elements for Code B Items:</b> 0204228N	<b>Other Related Program Elements:</b> N/A
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**Line Item MDAP/MAIS Code:** N/A

Exhibits Schedule					Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 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	TC056 - BLOCK 1B1 SSES				- / 42.804	- / 0.903	- / 0.768	- / 1.298	- / 0.000	- / 1.298
P-40a	TC056 - BLOCK 1B2 FEDERATED SEI				- / 59.451	- / 0.767	- / 1.299	- / 3.117	- / 0.000	- / 3.117
P-40a	TC060 - BLOCK 3T SURFACE EW IMPROVEMENTS EA System				- / 22.350	- / 56.970	- / 46.436	- / 7.929	- / 0.000	- / 7.929
P-3a	3 / TC056 - BLOCK 1B3 HGHS (SHIPALT/AIT)				- / 55.018	- / 12.723	- / 20.344	- / 17.095	- / 0.000	- / 17.095
P-3a	4 / TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM (SHIPALT/AIT)				- / 356.409	- / 187.908	- / 155.455	- / 158.120	- / 0.000	- / 158.120
P-3a	5 / TC060 - BLOCK 3 ELECTRONIC ATTACK (EA) SYSTEM (SHIPALT/AIT)				- / 0.000	- / 0.000	- / 50.590	- / 52.874	- / 0.000	- / 52.874
P-40	<b>Total Gross/Weapon System Cost</b>				<b>- / 536.032</b>	<b>- / 259.271</b>	<b>- / 274.892</b>	<b>- / 240.433</b>	<b>- / 0.000</b>	<b>- / 240.433</b>

\*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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<b>Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy</b>															<b>Date:</b> May 2017				
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 4								<b>P-1 Line Item Number / Title:</b> 2312 / AN/SLQ-32							<b>Aggregated Items Title:</b> TC056 - BLOCK 1B1 SSESMS				

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring																				
CNSG EQUIPMENT -- Installation	A		-	-	2.206	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FMP SHIP UNITS (Field Change) -- Procurement	A		348,288.46	52	18.111	3,484.85	33	0.115	3,216.22	37	0.119	3,000.00	44	0.132	-	-	-	3,000.00	44	0.132
FMP SHIP UNITS (Field Change) -- Installation	A		-	-	10.796	-	-	0.296	-	-	0.649	-	-	1.166	-	-	-	-	-	1.166
Subtotal: B Kits/Recurring			-	-	31.113	-	-	0.411	-	-	0.768	-	-	1.298	-	-	-	-	-	1.298
Support Cost																				
Production Support	A		-	-	8.704	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tech Refresh <sup>(1)</sup>	A		-	-	2.987	-	-	0.492	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support Cost			-	-	11.691	-	-	0.492	-	-	-	-	-	-	-	-	-	-	-	-
Total			-	-	42.804	-	-	0.903	-	-	0.768	-	-	1.298	-	-	0.000	-	-	1.298

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

**Remarks:**

Models of Systems Affected: TC056 SURFACE EW IMPROVEMENTS BLOCK 1: BLOCK 1B1 - SSESMS  
Type Modification: SHIPALT/AIT

Small Ship Electronic Support Measures System (SSESMS) provides Specific Emitter Identification (SEI) capability to various ships/ship classes in a stand-alone configuration. Tech Refresh funding is provided to address obsolescence and reliability issues affecting fielded systems.

**Footnotes:**

<sup>(1)</sup> Additional Tech Refresh procurements are required in FY16-FY18 to implement tech refresh changes. The Tech Refresh hardware consists of circuit cards and an Operating System update. The tech refresh applies to all in-service CG, DDG, and Amphibious ships with SEI systems (114 ships).



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<b>Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy</b>															<b>Date:</b> May 2017				
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 4								<b>P-1 Line Item Number / Title:</b> 2312 / AN/SLQ-32							<b>Aggregated Items Title:</b> TC056 - BLOCK 1B2 FEDERATED SEI				

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring																				
FMP SHIP UNITS -- Procurement <sup>(2)</sup>	A		459,300.00	60	27.558	370,000.00	2	0.740	370,000.00	3	1.110	370,000.00	3	1.110	-	-	-	370,000.00	3	1.110
FMP SHIP UNITS -- Installation	A		-	-	17.793	-	-	0.027	-	-	0.069	-	-	1.885	-	-	-	-	-	1.885
NON-FMP SHORE SITE UNITS -- Procurement	A		341,000.00	2	0.682	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NON-FMP SHORE SITE UNITS -- Installation	A		-	-	0.436	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: B Kits/Recurring			-	-	46.469	-	-	0.767	-	-	1.179	-	-	2.995	-	-	-	-	-	2.995
Support Cost																				
Production Support	A		-	-	7.935	-	-	-	-	-	0.120	-	-	0.122	-	-	-	-	-	0.122
Tech Refresh	A		-	-	5.047	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support Cost			-	-	12.982	-	-	-	-	-	0.120	-	-	0.122	-	-	-	-	-	0.122
Total			-	-	59.451	-	-	0.767	-	-	1.299	-	-	3.117	-	-	0.000	-	-	3.117

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

**Remarks:**

Models of Systems Affected: TC056 SURFACE EW IMPROVEMENTS BLOCK 1: BLOCK 1B2 - FEDERATED SEI

Type Modification: SHIPALT/AIT

The federated SEI, consisting of SEI hardware plus an ICAD modification kit, fully integrates SEI functionality with the ICAD/Q-70 console. Tech Refresh funding is provided to address obsolescence and reliability issues affecting fielded systems.

**Footnotes:**

<sup>(2)</sup> FY16 SEWIP Block 1B2 procurement quantities were added to fully outfit the two FY15 funded SEWIP Block 2 Lite units.

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<b>Exhibit P-40a, Budget Item Justification For Aggregated Items:</b> FY 2018 Navy																<b>Date:</b> May 2017				
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 4								<b>P-1 Line Item Number / Title:</b> 2312 / AN/SLQ-32								<b>Aggregated Items Title:</b> TC060 - BLOCK 3T SURFACE EW IMPROVEMENTS EA System				

  

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
<b>B Kits/Recurring</b>																				
FMP Ship Units -- Procurement	A		4,833K	3	14.500	5,036K	7	35.252	5,188K	5	25.940	-	-	-	-	-	-	-	-	-
FMP Ship Units -- Installation	A		-	-	7.850	-	-	20.348	-	-	18.396	-	-	7.929	-	-	-	-	-	7.929
<b>Subtotal: B Kits/Recurring</b>			-	-	<b>22.350</b>	-	-	<b>55.600</b>	-	-	<b>44.336</b>	-	-	<b>7.929</b>	-	-	-	-	-	<b>7.929</b>
<b>Support Cost</b>																				
Production Support	A		-	-	-	-	-	1.370	-	-	2.100	-	-	-	-	-	-	-	-	-
<b>Subtotal: Support Cost</b>			-	-	<b>0.000</b>	-	-	<b>1.370</b>	-	-	<b>2.100</b>	-	-	-	-	-	-	-	-	-
<b>Total</b>			-	-	<b>22.350</b>	-	-	<b>56.970</b>	-	-	<b>46.436</b>	-	-	<b>7.929</b>	-	-	<b>0.000</b>	-	-	<b>7.929</b>

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

**Remarks:**  
 Models of Systems Affected: TC060 - BLOCK 3T SURFACE EW IMPROVEMENTS EA System  
 Type Modification: SHIPALT/AIT

Block 3T (also referred to as nomenclature AN/SLQ-59) will provide an Electronic Attack (EA) capability improvement required for the AN/SLQ32(V) system to keep pace with the threat. Block 3T provides initial, limited interim capability of a focused application of the Naval Research Lab (NRL) Transportable EW Module (TEWM) system to meet an urgent operational needs statement.

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Exhibit P-3a, Individual Modification: FY 2018 Navy					Date: May 2017		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4		P-1 Line Item Number / Title: 2312 / AN/SLQ-32			Modification Number / Title: 3 / TC056 - BLOCK 1B3 HGHS		
ID Code (A=Service Ready, B=Not Service Ready) :				MDAP/MAIS Code:			
Resource Summary		Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Procurement Quantity (Units in Each)		-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)		55.018	12.723	20.344	17.095	0.000	17.095
Less PY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)		55.018	12.723	20.344	17.095	0.000	17.095
Plus CY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)		55.018	12.723	20.344	17.095	0.000	17.095
(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:**

High Gain High Sensitivity (HGHS) Adjunct Sensor is a critical improvement for threat correlation, situational awareness, and extending the battle space. Development Status/Major Development Milestones are: Milestone C/Low-Rate Initial Production (LRIP) 4Q FY12, Full Rate Production (FRP) 4Q FY16. Engineering Change Proposal (ECP) funding is provided to support changes resulting from software and hardware trouble reports from production, shipboard installations and/or land based testing. Tech Refresh funding is provided to address obsolescence and reliability issues affecting fielded systems.

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Exhibit P-3a, Individual Modification: FY 2018 Navy					Date: May 2017	
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4		P-1 Line Item Number / Title: 2312 / AN/SLQ-32			Modification Number / Title: 3 / TC056 - BLOCK 1B3 HGHS	
ID Code (A=Service Ready, B=Not Service Ready) :				MDAP/MAIS Code:		
Models of Systems Affected: TC056 SURFACE EW IMPROVEMENTS BLOCK 1 - BLOCK 1B3 HGHS		Modification Type: SHIPALT/AIT			Related RDT&E PEs: 0604757N	
Financial Plan	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Procurement						
Modification Item 1 of 1: TC056 - BLOCK 1B3 HGHS						
B Kits						
Recurring						
1.1.1) FMP BLOCK 1B3 for SLQ-32 (V)6 - NonOrganic (3)	28 / 31.833	3 / 2.229	13 / 9.165	8 / 5.560	- / -	8 / 5.560
1.1.2) FMP BLOCK 1B3 for SLQ-32 (V)7 - NonOrganic	- / -	1 / 0.743	1 / 0.705	4 / 2.780	- / -	4 / 2.780
1.1.3) NON-FMP BLOCK 1B3 SHORE SITE - NonOrganic	5 / 7.245	2 / 1.486	- / -	1 / 0.695	- / -	1 / 0.695
1.1.4) BLK 1B3 GFE UNIT FOR BLK 3 OEM - NonOrganic	2 / 2.602	- / -	- / -	- / -	- / -	- / -
Subtotal: Recurring	- / 41.680	- / 4.458	- / 9.870	- / 9.035	- / -	- / 9.035
Subtotal: TC056 - BLOCK 1B3 HGHS	35 / 41.680	6 / 4.458	14 / 9.870	13 / 9.035	- / -	13 / 9.035
Subtotal: Procurement, All Modification Items	- / 41.680	- / 4.458	- / 9.870	- / 9.035	- / -	- / 9.035
Support (All Modification Items)						
2.1) Production Support	- / 8.365	- / 1.979	- / 2.300	- / 1.855	- / -	- / 1.855
2.2) Tech Refresh	- / -	- / 0.438	- / -	- / -	- / -	- / -
2.3) Engineering Change Proposals (ECPs)	- / -	- / 0.915	- / 0.137	- / 0.271	- / -	- / 0.271
Subtotal: Support	- / 8.365	- / 3.332	- / 2.437	- / 2.126	- / -	- / 2.126
Installation						
Modification Item 1 of 1: TC056 - BLOCK 1B3 HGHS	- / 4.973	- / 4.933	- / 8.037	- / 5.934	- / 0.000	- / 5.934
Subtotal: Installation	- / 4.973	- / 4.933	- / 8.037	- / 5.934	- / -	- / 5.934
Total						
Total Cost (Procurement + Support + Installation)	55.018	12.723	20.344	17.095	0.000	17.095

## UNCLASSIFIED

<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy						<b>Date:</b> May 2017							
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 4				<b>P-1 Line Item Number / Title:</b> 2312 / AN/SLQ-32				<b>Modification Number / Title:</b> 3 / TC056 - BLOCK 1B3 HGHS					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :						<b>MDAP/MAIS Code:</b>							
<b>Modification Item 1 of 1:</b> TC056 - BLOCK 1B3 HGHS													
<b>Manufacturer Information</b>													
Manufacturer Name: General Dynamics AIS <sup>(4)</sup>						Manufacturer Location: Fair Lakes VA							
Administrative Leadtime (in Months): 1						Production Leadtime (in Months): 15							
<b>Dates</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018</b>							
Contract Dates		Sep 2016		May 2017		Mar 2018							
Delivery Dates		Dec 2017		Aug 2018		Jun 2019							
<b>Installation Information</b>													
<b>Method of Implementation:</b> SHIPALT/AIT:: Installation Name: FMP BLOCK 1B3 for SLQ-32 (V)6													
<b>Installation Cost</b>	<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>		
	Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		
Prior Years	4 / 4.133		5 / 4.033		13 / 7.887		6 / 4.419		0 / 0.000		6 / 4.419		
FY 2016	- / -		- / -		0 / 0.034		0 / 0.244		0 / 0.000		0 / 0.244		
FY 2017	- / -		- / -		0 / 0.104		0 / 0.805		0 / 0.000		0 / 0.805		
FY 2018	- / -		- / -		- / -		0 / 0.147		0 / 0.000		0 / 0.147		
Total	4 / 4.133		5 / 4.033		13 / 8.025		6 / 5.615		0 / 0.000		6 / 5.615		
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	4	1	-	2	2	2	-	3	8	-	-	1	5
Out	3	1	1	-	2	2	2	-	3	8	-	-	1
<b>Method of Implementation:</b> [none specified]:: Installation Name: FMP BLOCK 1B3 for SLQ-32 (V)7													
<b>Installation Cost</b>	<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>		
	Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total 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 2016	- / -		- / -		0 / 0.012		0 / 0.081		0 / 0.000		0 / 0.081		
FY 2017	- / -		- / -		- / -		0 / 0.018		0 / 0.000		0 / 0.018		
FY 2018	- / -		- / -		- / -		- / -		- / -		- / -		
Total	- / -		- / -		0 / 0.012		0 / 0.099		0 / 0.000		0 / 0.099		

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy										<b>Date:</b> May 2017			
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 4					<b>P-1 Line Item Number / Title:</b> 2312 / AN/SLQ-32					<b>Modification Number / Title:</b> 3 / TC056 - BLOCK 1B3 HGHS			
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :								<b>MDAP/MAIS Code:</b>					
<b>Modification Item 1 of 1:</b> TC056 - BLOCK 1B3 HGHS													
<b>Installation Information</b>													
<b>Method of Implementation:</b> [none specified]:: Installation Name: FMP BLOCK 1B3 for SLQ-32 (V)7													
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	-	-	-	-	-	-	-	-	-	-	-	-	-
Out	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Method of Implementation:</b> AIT:: Installation Name: NON-FMP BLOCK 1B3 SHORE SITE													
<b>Installation Cost</b>	<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>		
	Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total 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 / 0.840		3 / 0.540		- / -		- / -		- / -		- / -		
FY 2016	- / -		- / -		- / -		1 / 0.220		0 / 0.000		1 / 0.220		
FY 2017	- / -		- / -		- / -		- / -		- / -		- / -		
FY 2018	- / -		- / -		- / -		- / -		- / -		- / -		
Total	2 / 0.840		3 / 0.540		- / -		1 / 0.220		0 / 0.000		1 / 0.220		
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	2	-	-	1	2	-	-	-	-	-	1	-	-
Out	2	-	-	-	1	2	-	-	-	-	-	1	-
<b>Method of Implementation:</b> AIT:: Installation Name: BLK 1B3 GFE UNIT FOR BLK 3 OEM													
<b>Installation Cost</b>	<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>		
	Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		
Prior Years	- / -		2 / 0.360		- / -		- / -		- / -		- / -		
FY 2016	- / -		- / -		- / -		- / -		- / -		- / -		
FY 2017	- / -		- / -		- / -		- / -		- / -		- / -		
FY 2018	- / -		- / -		- / -		- / -		- / -		- / -		
Total	- / -		2 / 0.360		- / -		- / -		- / -		- / -		

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy										<b>Date:</b> May 2017			
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 4					<b>P-1 Line Item Number / Title:</b> 2312 / AN/SLQ-32					<b>Modification Number / Title:</b> 3 / TC056 - BLOCK 1B3 HGHS			
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :										<b>MDAP/MAIS Code:</b>			
<b>Modification Item 1 of 1:</b> TC056 - BLOCK 1B3 HGHS													
<b>Installation Information</b>													
<b>Method of Implementation:</b> AIT:: Installation Name: BLK 1B3 GFE UNIT FOR BLK 3 OEM													
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	-	-	-	2	-	-	-	-	-	-	-	-	-
Out	-	-	-	-	2	-	-	-	-	-	-	-	-

**Footnotes:**

(3) Block 1B3: High Gain High Sensitivity (HGHS) Adjunct Sensor is a critical improvement for threat correlation, situational awareness, and extending the battle space. Development Status/Major Development Milestones are: Milestone C/Low-Rate Initial Production (LRIP) 4Q FY12, Full Rate Production (FRP) 4Q FY16. Engineering Change Proposal (ECP) funding is provided to support changes resulting from software and hardware trouble reports from production, shipboard installations and/or land based testing. Tech Refresh funding is provided to address obsolescence and reliability issues affecting fielded systems. The SEWIP Block 1B3 and Block 2 units are installed conjunctively to compose the AN/SLQ-32(V)6 system. The SEWIP Block 1B3, Block 2 and Block 3 units are installed conjunctively to compose the AN/SLQ-32(V)7 system. The SEWIP Block 1B3 P-3a funding has been broken out to separately show systems installed with SEWIP Block 2 (FMP Block 1B3 for SLQ-32 (V)6 ) and systems installed with SEWIP Block 2 and Block 3 (FMP Block 1B3 for SLQ-32 (V)7). For FMP Block 1B3 systems for SLQ-32 (V)7, production lead times for Block 1B3 are 15 months and these systems are then delivered to the Block 3 OEM 180 days prior to delivery as part of an integrated SLQ-32 (V)7 system. The 180 days is required for integration and testing with SEWIP Block 3 at the OEM facility. Notes: (1) Production Support provides for Government oversight of production, Government and Original Equipment Manufacturer (OEM) support of production related software and hardware problems, and engineering as well as integrated logistics support efforts in support of production and fielding. (2) Engineering Change Proposal (ECP) funding is to address reliability, obsolescence, and other issues associated with production, and is estimated at 3% of the total hardware cost. (3) Total quantities increased from 127 at PB17 to 129 at PB18 due to a decrease of one in the Fleet units, an increase of two shore units and an increase of one OEM unit. (4) FY15-FY19 hardware unit costs reflect actual FY15 contract prices. (5) Installation cost estimates have been revised based on actual costs of installations to date. (6) The FY15-19 production contract was originally awarded in June 2015 but the award was protested to GAO. GAO upheld the protest and the subsequent contract was awarded in Dec 2015. (7) The FY16 production contract option was awarded in September 2016. (8) FY16 procured shore unit, being installed in FY19 as a (V)7 shore site installation, is required to be delivered to the Block 3 OEM for system integration NLT Jan 2019 (180 days prior to the corresponding Block 3 unit). This is within the delivery period for the FY16 procurements. The FY18 procured shore unit, being installed in FY20, a (V)7 shore site installation, is required to be delivered to the Block 3 OEM for system integration NLT July 2019. This is within the projected delivery period for the FY18 procurements.

(4) The SEWIP Block 1B3 P-3a funding has been broken out to separately show systems installed with SEWIP Block 2 (FMP Block 1B3 for SLQ-32 (V)6 ) and systems installed with SEWIP Block 2 and Block 3 (FMP Block 1B3 for SLQ-32 (V)7). For FMP Block 1B3 systems for SLQ-32 (V)7, production lead times for Block 1B3 are 15 months and these systems are then delivered to the Block 3 OEM 180 days prior to delivery as part of a SLQ-32 (V)7 system. The 180 days is required for integration and testing with SEWIP Block 3 at the OEM facility.

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Exhibit P-3a, Individual Modification: FY 2018 Navy					Date: May 2017		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4		P-1 Line Item Number / Title: 2312 / AN/SLQ-32			Modification Number / Title: 4 / TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM		
ID Code (A=Service Ready, B=Not Service Ready) :				MDAP/MAIS Code:			
Resource Summary		Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Procurement Quantity (Units in Each)		-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)		356.409	187.908	155.455	158.120	0.000	158.120
Less PY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)		356.409	187.908	155.455	158.120	0.000	158.120
Plus CY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)		356.409	187.908	155.455	158.120	0.000	158.120
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)							
Initial Spares (\$ in Millions)		-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)		-	-	-	-	-	-

**Description:**

Block 2 will provide AN/SLQ-32(V) an upgraded antenna, receiver, and combat systems interface. The upgrades will pace the threat, improve detection and accuracy and mitigate Electromagnetic Interference (EMI). Development Status/Major Development Milestones are: Milestone C Low-Rate Initial Production (LRIP) 4Q FY13, Full Rate Production (FRP) 4Q FY16. Engineering Change Proposal (ECP) funding is provided to support changes resulting from software and hardware trouble reports from production, shipboard installations and/or land based testing. Tech Refresh funding is provided to address obsolescence and reliability issues affecting fielded systems. The Block 2 hardware cost includes the SEWIP Block 2 ES system, SLA-10D blanker, Common Processing System, Common Display System, Liquid Conditioning Unit and Data Adaptation Processor. Block 2 Lite is a variant of the Block 2 specifically tailored for the needs of small ships, such as LCS, OPC and the Fast Frigate, to address fleet emergent needs for a robust, capable, and sustainable EW system, that meets the space, weight and power limitations of these smaller ships. The SEWIP Block 1B3 and Block 2 units are installed conjunctively and compose the AN/SLQ-32(V)6 system. The SEWIP Block 1B3, Block 2 and Block 3 units are installed conjunctively to compose the AN/SLQ-32(V)7 system. The SEWIP Block 2 P-3a funding has been broken out to separately show systems installed with SEWIP Block 1B3 (FMP Block 2 for SLQ-32 (V)6 ) and systems installed with SEWIP Block 1B3 and Block 3 (FMP Block 2 for SLQ-32 (V)7). For FMP Block 2 systems for SLQ-32 (V)7, production lead times for Block 2 are 17 months and these systems are then delivered to the Block 3 OEM 180 days prior to delivery as part of an integrated SLQ-32 (V)7 system. The 180 days is required for integration and testing with SEWIP Block 3 at the OEM facility.



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Exhibit P-3a, Individual Modification: FY 2018 Navy				Date: May 2017			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 4		P-1 Line Item Number / Title: 2312 / AN/SLQ-32			Modification Number / Title: 4 / TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM		
ID Code (A=Service Ready, B=Not Service Ready) :				MDAP/MAIS Code:			
Models of Systems Affected: TC059 SURFACE EW IMPROVEMENTS BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM		Modification Type: SHIPALT/AIT			Related RDT&E PEs: 0604757N		
Financial Plan	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement							
Modification Item 1 of 1: TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM							
B Kits							
Recurring							
1.1.1) FMP BLOCK 2 for SLQ-32 (V)6 - NonOrganic <sup>(5)</sup>		22 / 254.221	12 / 107.712	10 / 89.620	8 / 70.224	- / -	8 / 70.224
1.1.2) FMP BLOCK 2 for SLQ-32 (V)7 - NonOrganic		- / -	1 / 8.976	1 / 8.962	4 / 35.112	- / -	4 / 35.112
1.1.3) FMP BLK2 LITE SHIP UNITS - NonOrganic		1 / 7.178	- / -	- / -	- / -	- / -	- / -
1.1.4) NON-FMP BLK2 SHORE SITE UNITS - NonOrganic		5 / 35.577	2 / 17.952	- / -	1 / 8.778	- / -	1 / 8.778
1.1.5) NON-FMP BLOCK 2 SHORE LITE - NonOrganic		1 / 6.438	- / -	- / -	- / -	- / -	- / -
1.1.6) BLK2 GFE FOR BLK3 OEM - NonOrganic		1 / 11.556	- / -	- / -	- / -	- / -	- / -
1.1.7) INCO Spares - Organic		- / -	- / -	- / -	- / 2.309	- / -	- / 2.309
Subtotal: Recurring		- / 314.970	- / 134.640	- / 98.582	- / 116.423	- / -	- / 116.423
Subtotal: TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM		30 / 314.970	15 / 134.640	11 / 98.582	13 / 116.423	- / -	13 / 116.423
Subtotal: Procurement, All Modification Items		- / 314.970	- / 134.640	- / 98.582	- / 116.423	- / -	- / 116.423
Support (All Modification Items)							
2.1) Production Support		- / 17.162	- / 15.399	- / 6.854	- / 5.379	- / -	- / 5.379
2.2) Tech Refresh		- / -	- / 3.000	- / 2.640	- / -	- / -	- / -
2.3) Engineering Change Proposals (ECPs)		- / 1.775	- / 9.196	- / 5.058	- / 3.789	- / -	- / 3.789
Subtotal: Support		- / 18.937	- / 27.595	- / 14.552	- / 9.168	- / -	- / 9.168
Installation							
Modification Item 1 of 1: TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM		- / 22.502	- / 25.673	- / 42.321	- / 32.529	- / 0.000	- / 32.529
Subtotal: Installation		- / 22.502	- / 25.673	- / 42.321	- / 32.529	- / -	- / 32.529
Total							
Total Cost (Procurement + Support + Installation)		356.409	187.908	155.455	158.120	0.000	158.120

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy						<b>Date:</b> May 2017							
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 4				<b>P-1 Line Item Number / Title:</b> 2312 / AN/SLQ-32				<b>Modification Number / Title:</b> 4 / TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :						<b>MDAP/MAIS Code:</b>							
<b>Modification Item 1 of 1:</b> TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM													
<b>Manufacturer Information</b>													
Manufacturer Name: Lockheed Martin <sup>(6)</sup>						Manufacturer Location: Syracuse, NY							
Administrative Leadtime (in Months): 1						Production Leadtime (in Months): 17							
<b>Dates</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018</b>							
Contract Dates		Sep 2016		Mar 2017		Mar 2018							
Delivery Dates		Jan 2018		Aug 2018		Aug 2019							
<b>Installation Information</b>													
<b>Method of Implementation:</b> SHIPALT/AIT:: Installation Name: FMP BLOCK 2 for SLQ-32 (V)6													
<b>Installation Cost</b>	<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>		
	Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total 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 / 20.652		5 / 19.466		13 / 38.227		- / -		- / -		- / -		
FY 2016	- / -		0 / 2.636		0 / 2.045		6 / 26.396		0 / 0.000		6 / 26.396		
FY 2017	- / -		- / -		0 / 0.335		0 / 4.145		0 / 0.000		0 / 4.145		
FY 2018	- / -		- / -		- / -		0 / 0.421		0 / 0.000		0 / 0.421		
Total	4 / 20.652		5 / 22.102		13 / 40.607		6 / 30.962		0 / 0.000		6 / 30.962		
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	4	1	-	2	2	2	-	3	8	-	-	1	5
Out	3	1	1	-	2	2	2	-	3	8	-	-	1
<b>Method of Implementation:</b> [none specified]:: Installation Name: FMP BLOCK 2 for SLQ-32 (V)7													
<b>Installation Cost</b>	<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>		
	Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total 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 2016	- / -		- / -		0 / 0.056		0 / 0.656		0 / 0.000		0 / 0.656		
FY 2017	- / -		- / -		- / -		0 / 0.053		0 / 0.000		0 / 0.053		
FY 2018	- / -		- / -		- / -		- / -		- / -		- / -		
Total	- / -		- / -		0 / 0.056		0 / 0.709		0 / 0.000		0 / 0.709		

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy										<b>Date:</b> May 2017			
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 4					<b>P-1 Line Item Number / Title:</b> 2312 / AN/SLQ-32					<b>Modification Number / Title:</b> 4 / TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM			
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :										<b>MDAP/MAIS Code:</b>			
<b>Modification Item 1 of 1:</b> TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM													
<b>Installation Information</b>													
<b>Method of Implementation:</b> [none specified]:: Installation Name: FMP BLOCK 2 for SLQ-32 (V)7													
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	-	-	-	-	-	-	-	-	-	-	-	-	-
Out	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Method of Implementation:</b> [none specified]:: Installation Name: FMP BLK2 LITE SHIP UNITS													
<b>Installation Cost</b>		<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>	
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total 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 / 0.010		1 / 0.829		- / -		- / -		- / -	
FY 2016		- / -		- / -		- / -		- / -		- / -		- / -	
FY 2017		- / -		- / -		- / -		- / -		- / -		- / -	
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -	
Total		- / -		0 / 0.010		1 / 0.829		- / -		- / -		- / -	
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	-	-	-	-	-	-	-	1	-	-	-	-	-
Out	-	-	-	-	-	-	-	-	1	-	-	-	-
<b>Method of Implementation:</b> AIT:: Installation Name: NON-FMP BLK2 SHORE SITE UNITS													
<b>Installation Cost</b>		<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>	
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total 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 / 1.850		3 / 2.703		- / -		- / -		- / -		- / -	
FY 2016		- / -		- / -		- / -		1 / 0.858		0 / 0.000		1 / 0.858	
FY 2017		- / -		- / -		- / -		- / -		- / -		- / -	
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -	
Total		2 / 1.850		3 / 2.703		- / -		1 / 0.858		0 / 0.000		1 / 0.858	

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 4	<b>P-1 Line Item Number / Title:</b> 2312 / AN/SLQ-32	<b>Modification Number / Title:</b> 4 / TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM

<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :	<b>MDAP/MAIS Code:</b>
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**Modification Item 1 of 1:** TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM

**Installation Information**

**Method of Implementation:** AIT:: Installation Name: NON-FMP BLK2 SHORE SITE UNITS

**Installation Schedule**

	PYS	FY 2016				FY 2017				FY 2018			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
In	2	-	-	1	2	-	-	-	-	-	1	-	-
Out	2	-	-	-	1	2	-	-	-	-	-	1	-

**Method of Implementation:** [none specified]:: Installation Name: NON-FMP BLOCK 2 SHORE LITE

Installation Cost	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total 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 / 0.829	- / -	- / -	- / -
FY 2016	- / -	- / -	- / -	- / -	- / -	- / -
FY 2017	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	1 / 0.829	- / -	- / -	- / -

**Installation Schedule**

	PYS	FY 2016				FY 2017				FY 2018			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
In	-	-	-	-	-	-	-	1	-	-	-	-	-
Out	-	-	-	-	-	-	-	-	1	-	-	-	-

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

Installation Cost	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	1 / 0.858	- / -	- / -	- / -	- / -
FY 2016	- / -	- / -	- / -	- / -	- / -	- / -
FY 2017	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	1 / 0.858	- / -	- / -	- / -	- / -

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 4	<b>P-1 Line Item Number / Title:</b> 2312 / AN/SLQ-32	<b>Modification Number / Title:</b> 4 / TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM

<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :	<b>MDAP/MAIS Code:</b>
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**Modification Item 1 of 1:** TC059 - BLOCK 2 ELECTRONIC SUPPORT (ES) SYSTEM

**Installation Information**

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

**Installation Schedule**

	PYS	FY 2016				FY 2017				FY 2018			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
In	-	-	-	1	-	-	-	-	-	-	-	-	-
Out	-	-	-	-	1	-	-	-	-	-	-	-	-

**Footnotes:**

<sup>(5)</sup> (1) Production Support provides for Government oversight of production, Government and original equipment manufacturer (OEM) support of production related software and hardware problems, and engineering as well as integrated logistics support efforts in support of production and fielding. (2) Engineering Change Proposal (ECP) funding is to address reliability, obsolescence, and other issues associated with production, and is estimated at 3% of the total hardware cost. (3) Total quantity increased from 128 at PB17 to 135 at PB18. This resulted from the decrease of one in the Fleet unit, addition of two (2)Block 2 shore units to support SEWIP Block 3 shore units, the addition of five (5) SEWIP Block 2 Lite systems to support the Off Shore Patrol Cutter (OPC) and the increase of one OEM unit. (4) FY16 production support increased from PB17 to PB18 due to several unanticipated requirements including IOT&E phase B efforts, shock qualification, and combat system integration efforts. (5) FY16 ECP funding increased from PB17 to PB18 due increased requirements for software changes including software configurations for AEGIS non-PLA, SSDS, and AEGIS PLA, and hardware changes including single mode fiber, RCS panels, improved target holders, and the network Ethernet switch replacement. (6) Block 2 unit costs reflect actual FY15 contract prices. (7) Installation cost estimates have been revised to reflect the actual costs for SEWIP Block 2 installations. (8) The FY16 procured shore unit, being installed in FY19 as a (V)7 shore site installation, is required to be delivered to the Block 3 OEM for system integration NLT Jan 2019 (180 days prior to the corresponding Block 3 unit). This is within the delivery period for the FY16 procurements. The FY18 procured shore unit, being installed in FY20 as a (V)7 shore site installation, is required to be delivered to the Block 3 OEM for system integration NLT July 2019. This is within the projected delivery period for the FY18 procurements. (9) Production Lead times are 12 months for Block 2 Lite Units and 17 Months for Block 2 units. The SEWIP Block 2 P-3a funding has been broken out to separately show systems installed with SEWIP Block 2 (FMP Block 1B2 for SLQ-32 (V)6 ) and systems installed with SEWIP Block 2 and Block 3 (FMP Block 2 for SLQ-32 (V)7). For FMP Block 2 systems for SLQ-32 (V)7, production lead times for Block 2 are 17 months and these systems are then delivered to the Block 3 OEM 180 days prior to delivery as part of a SLQ-32 (V)7 system. The 180 days is required for integration and testing with SEWIP Block 3 at the OEM facility. (10) Funding for Installation and Check Out (INCO) spares to support FY18-FY22 procured units have been called out separately in the SEWIP Block 2 hardware line as 1.1.X.

<sup>(6)</sup> Production Lead times are 12 months for Block 2 Lite Units and 17 Months for Block 2 units. The SEWIP Block 2 P-3a funding has been broken out to separately show systems installed with SEWIP Block 2 (FMP Block 1B2 for SLQ-32 (V)6 ) and systems installed with SEWIP Block 2 and Block 3 (FMP Block 2 for SLQ-32 (V)7). For FMB Block 2 systems for SLQ-32 (V)7, production lead times for Block 2 are 17 months and these systems are then delivered to the Block 3 OEM 180 days prior to delivery as part of a SLQ-32 (V)7 system. The 180 days is required for integration and testing with SEWIP Block 3 at the OEM facility.

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 4			<b>P-1 Line Item Number / Title:</b> 2312 / AN/SLQ-32		<b>Modification Number / Title:</b> 5 / TC060 - BLOCK 3 ELECTRONIC ATTACK (EA) SYSTEM	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	0.000	0.000	50.590	52.874	0.000	52.874
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	0.000	0.000	50.590	52.874	0.000	52.874
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
<b>Total Obligation Authority</b> <i>(\$ in Millions)</i>	<b>0.000</b>	<b>0.000</b>	<b>50.590</b>	<b>52.874</b>	<b>0.000</b>	<b>52.874</b>
<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>	-	-	-	-	-	-
<p><b>Description:</b></p> <p>Block 3 will provide an Electronic Attack (EA) capability improvement required for the AN/SLQ-32(V) system to keep pace with the threat. The upgrade will provide a common EA capability to all surface combatants (CVN, CG, DDG, LHA) outfitted with the active variant of the AN/SLQ-32, mainly the (V)3 and (V)4, as well as select new-construction platforms. The program builds on the EW Electronic Support (ES) capability delivered by Blocks 1 and 2. Development Status/Major Milestones are: Long Lead Materials will be procured Q4 FY17, Milestone C Low-Rate Initial Production (LRIP) Q4 FY18, IOT&amp;E Q1 FY21, FRP is Q3 FY21. The SEWIP Block 1B3, Block 2 and Block 3 units are installed conjunctively to compose the AN/SLQ-32(V)7 system.</p>						

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 4			<b>P-1 Line Item Number / Title:</b> 2312 / AN/SLQ-32		<b>Modification Number / Title:</b> 5 / TC060 - BLOCK 3 ELECTRONIC ATTACK (EA) SYSTEM	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Models of Systems Affected:</b> TC060 SURFACE EW IMPROVEMENTS BLOCK 3 ELECTRONIC ATTACK (EA) SYSTEM			<b>Modification Type:</b> SHIPALT/AIT		<b>Related RDT&amp;E PEs:</b> 0604757N	
<b>Financial Plan</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
<b>Procurement</b>						
<b>Modification Item 1 of 1:</b> TC060 - BLOCK 3 ELECTRONIC ATTACK (EA) SYSTEM						
B Kits						
Recurring						
1.1.2) FMP SHIP UNITS (SMALL RCS) - NonOrganic	- / -	- / -	1 / 20.982	1 / 17.037	- / -	1 / 17.037
1.1.3) NON-FMP SHORE SITE UNITS - NonOrganic	- / -	- / -	1 / 20.982	1 / 17.037	- / -	1 / 17.037
1.1.4) Installation and Check Out (INCO) Spares - Organic	- / -	- / -	- / 2.747	- / 4.662	- / -	- / 4.662
<b>Subtotal: Recurring</b>	- / 0.000	- / -	- / 44.711	- / 38.736	- / -	- / 38.736
<b>Subtotal: TC060 - BLOCK 3 ELECTRONIC ATTACK (EA) SYSTEM</b>	- / -	- / -	2 / 44.711	2 / 38.736	- / -	2 / 38.736
<b>Subtotal: Procurement, All Modification Items</b>	- / 0.000	- / -	- / 44.711	- / 38.736	- / -	- / 38.736
<b>Support (All Modification Items)</b>						
2.1) Production Support	- / -	- / -	- / 3.691	- / 10.011	- / -	- / 10.011
2.2) Engineering Change Proposals (ECP)	- / -	- / -	- / 2.102	- / 1.704	- / -	- / 1.704
<b>Subtotal: Support</b>	- / 0.000	- / -	- / 5.793	- / 11.715	- / -	- / 11.715
<b>Installation</b>						
<b>Modification Item 1 of 1:</b> TC060 - BLOCK 3 ELECTRONIC ATTACK (EA) SYSTEM	- / 0.000	- / 0.000	- / 0.086	- / 2.423	- / 0.000	- / 2.423
<b>Subtotal: Installation</b>	- / 0.000	- / -	- / 0.086	- / 2.423	- / -	- / 2.423
<b>Total</b>						
<b>Total Cost (Procurement + Support + Installation)</b>	<b>0.000</b>	<b>0.000</b>	<b>50.590</b>	<b>52.874</b>	<b>0.000</b>	<b>52.874</b>

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017								
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 4			<b>P-1 Line Item Number / Title:</b> 2312 / AN/SLQ-32			<b>Modification Number / Title:</b> 5 / TC060 - BLOCK 3 ELECTRONIC ATTACK (EA) SYSTEM							
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :					<b>MDAP/MAIS Code:</b>								
<b>Modification Item 1 of 1:</b> TC060 - BLOCK 3 ELECTRONIC ATTACK (EA) SYSTEM													
<b>Manufacturer Information</b>													
Manufacturer Name: NORTHROP GRUMMAN <sup>(7)</sup>					Manufacturer Location: BALTIMORE, MD								
Administrative Leadtime (in Months): 0					Production Leadtime (in Months): 18								
<b>Dates</b>		<b>FY 2016</b>			<b>FY 2017</b>		<b>FY 2018</b>						
Contract Dates					Jul 2017		Jul 2018						
Delivery Dates					Jul 2019		Jan 2020						
<b>Installation Information</b>													
<b>Method of Implementation:</b> [none specified]:: Installation Name: FMP SHIP UNITS (SMALL RCS)													
<b>Installation Cost</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>							
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total 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 2016	- / -	- / -	- / -	- / -	- / -	- / -							
FY 2017	- / -	- / -	0 / 0.086	0 / 2.238	0 / 0.000	0 / 2.238							
FY 2018	- / -	- / -	- / -	0 / 0.185	0 / 0.000	0 / 0.185							
Total	- / -	- / -	0 / 0.086	0 / 2.423	0 / 0.000	0 / 2.423							
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	-	-	-	-	-	-	-	-	-	-	-	-	-
Out	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Method of Implementation:</b> AIT:: Installation Name: NON-FMP SHORE SITE UNITS													
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	-	-	-	-	-	-	-	-	-	-	-	-	-
Out	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Footnotes:</b>													



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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 4	<b>P-1 Line Item Number / Title:</b> 2312 / AN/SLQ-32	<b>Modification Number / Title:</b> 5 / TC060 - BLOCK 3 ELECTRONIC ATTACK (EA) SYSTEM
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :		<b>MDAP/MAIS Code:</b>
<p><sup>(7)</sup> The total lead time for production of FY17 units is 24 months, the production lead time for FY18-FY21 units is 18 months.</p>		

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy									Date: May 2017			
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 5: Reconnaissance Equipment						P-1 Line Item Number / Title: 2360 / Shipboard IW Exploit						
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A					Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	862.265	138.002	170.733	187.007	0.000	187.007	216.842	213.507	262.806	293.953	Continuing	Continuing
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	862.265	138.002	170.733	187.007	0.000	187.007	216.842	213.507	262.806	293.953	Continuing	Continuing
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority ( <i>\$ in Millions</i> )	862.265	138.002	170.733	187.007	0.000	187.007	216.842	213.507	262.806	293.953	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> )	-	4.126	1.375	6.513	-	6.513	6.826	7.226	6.922	3.235	Continuing	Continuing
Flyaway Unit Cost ( <i>\$ in Thousands</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ( <i>\$ in Thousands</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Description:												
<p>[P5 / 1U013 SSEE Increment E ECP]: ECP/Obsolescence procures Commercial Off-The-Shelf/Non-Developmental Item (COTS/NDI) equipment to replace obsolete and unsupportable equipment for the Ships Signal Exploitation Equipment (SSEE) Increment (Inc) E program and incorporates Pre-Planned Product Improvements (P3I) for the acquisition and localization of Signals of Interest (SOI) and Electronic Warfare (EW). These changes allow for a common logistic support baseline and provide the hardware and software to incorporate P3I/new COTS base technologies. Specifically, this funds field change kits/ECPs that may also include all or some of the following upgrades; Tapered Slot Antennas (TSA), Hostile Force Integration Targeting Subsystems (HITS) hosted on Digital Receiver Technology (DRT), Radio Frequency Distribution Unit (RFDU) Backfits, Digital Tuners, Global Positioning System (GPS) Selective Availability Anti-Spoofing Modules (SAASM), Medusa, various antenna types, various hardware (to include blade servers) and software upgrades, and equipment to provide Information Operation (IO)/EW acquisition capabilities and localization of modern threat communications and SOI.</p>												
<p>[P5 / 1U016 Spectral (SSEE Increment G)]: The Spectral (Increment G) Program is an incremental acquisition, Government Off-The-Shelf/Commercial Off-The-Shelf (GOTS/COTS) program that provides cryptologic signals exploitation capabilities designed to meet the requirements for shipboard cryptologic operations within the Ship's Signal Exploitation Space (SSES) aboard a variety of ship classes and shore facilities. The Spectral (Increment G) system will provide a mobile, passive capability to detect, classify, track, and determine the intent of enemy units through exploitation of their command and control emissions. The system searches the Radio Frequency (RF) spectrum based on operator-defined search strategies with the receivers under computer control, alerts the operator when a signal is detected and creates signal files to be used for on-line and post processing. The Spectral (Increment G) System will leverage existing architectures and support the integrated fires construct with Shipboard Combat Systems providing non-kinetic engagement to enhance combat effectiveness. The system will be scalable, reconfigurable to mission, modular, remotable and dynamically reprogrammable in response to new threats and capabilities. The system is upgraded incrementally as improvements are developed. The Spectral (Increment G) System will deliver improved information/cyber Warfare planning, exploitation, and attack capabilities across Naval platforms.</p>												
<p>[P5 / 1U020 SSEE MODS Engineering Change Proposal - Ship]: Engineering Change Proposal (ECP)/Obsolescence procures COTS/Non-Developmental Item (COTS/NDI) equipment to replace obsolete and end-of-life (EOL) equipment for the SSEE MODS program. ECP incorporates Pre-Planned Product Improvements (P3I) for the acquisition and localization of the latest Signals of Interest (SOI) and Information Operations (IO). ECP maintains and improves upon SSEE MODS capability and relevance within a rapidly evolving threat environment.</p>												
<p>[P5 / 1U029 Information Warfare (IW) Training Equipment]: IW training equipment provides operator, unit or multi-unit level training on Tactical Cryptologic Systems (TCS). This equipment enhances initial skills, provides refresher training and increases proficiency of the operator on TCS through the generation and replay of operational scenarios by software simulation versus hardware simulation. IW training equipment is updated based on new variants of Ships Signal Exploitation Equipment (SSEE) systems. Additionally this line supports the procurement of the STALLION (formerly known as Cryptologic On-Line Trainer)</p>												

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 5: Reconnaissance Equipment		P-1 Line Item Number / Title: 2360 / Shipboard IW Exploit
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
hardware for shipboard IW team training. Stallion is a web-based/Service Oriented Architecture (SOA) scenario training system that emulates Navy tactical Signal Intelligence (SIGINT)/Information Operations (IO) system functionality. Stallion is delivered turnkey to the Center for Information Dominance Learning Sites (CIDLS).		
[P5 / 1U060 ICADS]: ICADS ((AN/URC-148(V)) is a Chief of Naval Operations (CNO) directed mission critical system providing advanced simulation capabilities and limited back-up communications for Naval platforms. The two Increments provide scalable capability dependent on host platform requirements. Specific program details held at a higher classification.		
[P3A / 1U017 SSEE Increment F Ship]: The SSEE Increment F program is an incremental acquisition, COTS/GOTS program designed as the building block to improve the Information Warfare (IW) exploitation / IO / non-kinetic and subsequent tactical cryptologic capability across Navy surface combatant platforms. SSEE Increment F provides the afloat IW / cryptologist with IO / non-kinetic capabilities and subsequent threat identification and analysis of Communications Intelligence as well as queuing of radio direction finding assets. Equipment includes receivers, Radio Frequency management systems, recorders, audio distribution systems, computers, antennas and ancillary hardware. The system is upgraded incrementally as improvements are developed. SSEE Increment F employs the Maritime Cryptologic Strategy for the 21st century concept of a single core architecture that is easily modernized and scaled in capability. The system design permits the rapid insertion of new and emerging Pre-Planned Product Improvement (P3I) to address the evolving threat. The system utilizes generic processor technology to counteract obsolescence issues with digital signal processing /field programmable gate array technologies and provide software receivers for ease of modification to deal with known and projected threat SOI. Automated signal acquisition and integrated radio direction finding are incorporated into the SSEE Increment F system. SSEE Increment F also includes a small form factor variant, Tactical Cryptologic System (TCS) to meet IW / IO / non-kinetic and subsequent tactical cryptologic capability onboard Arleigh Burke Class Destroyers (DDG) Flight I platforms and as a replacement for select SSEE Increment E variants and older signals intelligence systems.		
TCS is a scalable, modular variant of SSEE Increment F that allows configuration to meet platform mission requirements. TCS leverages SSEE Increment F common software, training, and logistics. TCS consists of infrastructure (Topside Antennas) which will be permanently installed on 41 Unit Level ships. The Below Deck Core system includes a modular component to all Mission Tailorable upgrades to increase capabilities. The modularity and scalability of TCS is delivered using Engineering Change Proposal (ECP).		
[P3A - 2 / 1U018/1U019 Paragon-Graywing]: SSEE Modifications is comprised of the Paragon and Graywing subsystems. Beginning in FY15, Paragon capabilities are collapsed into Graywing hardware resulting in cost efficiencies. Paragon is a classified Navy tactical signals intelligence frequency extension capability that will be integrated into SSEE systems. This capability provides simultaneous detection, collection, processing, IO and display of communication intelligence data from hostile, high threat and adversary platforms in select frequency ranges that are not prosecuted or countered today. Graywing is an advanced common data link system that will be integrated into SSEE systems. It is a critical component of "Ballistic Missile Defense, Executive Committee, Anti-Submarine Warfare, Chief of Naval Operations, Executive Board IO Countermeasure Red Flash" initiative (details held at a higher classification level).		
[P3A - 3 / 1U014 Engineering Change Proposal (ECP) Increment F]: Engineering Change Proposal (ECP)/Obsolescence procures Commercial Off-The-Shelf/Non-Developmental Item (COTS/NDI) equipment to replace obsolete and end-of-life (EOL) equipment for the Ship's Signal Exploitation Equipment (SSEE) Increment F program. ECP incorporates P3I for the acquisition and localization of the latest Signals of Interest (SOI) and Information Operations (IO). ECP maintains and improves upon SSEE INC F's capability and relevance within a rapidly evolving threat environment.		

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy								<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 5: Reconnaissance Equipment						<b>P-1 Line Item Number / Title:</b> 2360 / Shipboard IW Exploit				
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A			<b>Program Elements for Code B Items:</b> N/A			<b>Other Related Program Elements:</b> N/A				
<b>Line Item MDAP/MAIS Code:</b> N/A										
<b>Exhibits Schedule</b>					<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
<b>Exhibit Type</b>	<b>Title*</b>	<b>Subexhibits</b>	<b>ID CD</b>	<b>MDAP/MAIS Code</b>	<b>Quantity / Total Cost (Each) / (\$ M)</b>	<b>Quantity / Total Cost (Each) / (\$ M)</b>	<b>Quantity / Total Cost (Each) / (\$ M)</b>	<b>Quantity / Total Cost (Each) / (\$ M)</b>	<b>Quantity / Total Cost (Each) / (\$ M)</b>	<b>Quantity / Total Cost (Each) / (\$ M)</b>
P-5	1 / Shipboard IW Exploit	P-5a			- / 445.480	- / 23.222	- / 9.077	- / 3.536	- / 0.000	- / 3.536
P-3a	1 / 1U017 SSEE Increment F Ship (TBD)				- / 368.739	- / 70.435	- / 92.167	- / 108.472	- / 0.000	- / 108.472
P-3a	2 / 1U018/1U019 Paragon-Graywing (Upgrade)				- / 26.512	- / 16.126	- / 42.750	- / 54.083	- / 0.000	- / 54.083
P-3a	3 / 1U014 Engineering Change Proposal (ECP) Increment F (Upgrade)				- / 21.534	- / 28.219	- / 26.739	- / 20.916	- / 0.000	- / 20.916
<b>P-40</b>	<b>Total Gross/Weapon System Cost</b>				<b>- / 862.265</b>	<b>- / 138.002</b>	<b>- / 170.733</b>	<b>- / 187.007</b>	<b>- / 0.000</b>	<b>- / 187.007</b>
<p>*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.</p> <p>Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.</p>										
<p><b>Justification:</b></p> <p>The Shipboard IW budget was increased to support the Navy's Navigation Plan (2016-2020). SSEE funding supports Tactical Cryptologic System (TCS), Anti-Access, Area Denial (A2AD), ICADS (Integrated Communications and Data Systems ((AN/URC-148(V)) and SSEE Increment E Service Life Extension Program (SLEP) and Afloat Cyber efforts. TCS is a scalable, modular variant of SSEE Increment F that allows configuration to meet platform mission requirements. TCS leverages SSEE Increment F common software, training, and logistics. TCS consists of infrastructure (Topside Antennas) which will be permanently installed on 41 Unit Level ships. The Below Deck Core system includes a modular component for mission adaptable upgrades for increased capabilities. The modularity and scalability of TCS is delivered using Engineering Change Proposal (ECP). A2AD funding will procure Anti-Access, Area Denial (A2AD) capabilities for the Ship's Signal Exploitation Equipment (SSEE) Increment F, Spectral(SSEE Increment G) and SSEE Modifications systems. A2AD capabilities integrated into the SSEE Systems will enable maritime power projection in enabling surface vessels to disrupt, deny, degrade and defeat adversary (state and non-state) use of the radio frequency spectrum, improving the Fleet's ability to communicate and operate therein. These systems will be deployed supporting Assured Command and Control, Battlespace Awareness, and Integrated Fires. ICADS ((AN/URC-148(V)) is a Navy directed mission critical system providing advanced simulation capabilities and limited back-up communications for Naval platforms. The two Increments provide scalable capability dependent on host platform requirements. Specific program details held at a higher classification. Afloat Cyber provides for the ability to continue and extend the Fleet's afloat cyber operations for the SSEE Family of Systems and includes procurement of Commercial off the Shelf hardware solutions (further details are held at a higher classification level and can be provided upon request).</p> <p>Tactical Cryptologic System has been broken out from SSEE INC F to better identify the individual costs for each system.</p> <p><b>PROCUREMENT DATA:</b></p> <p>The following represents the increase from FY17 to FY18: 1 Additional SSEE MODS Graywing System, 3 additional TCS installs, 5 SSEE MODS Ship installs, 5 Next Generation Chassis, 5 Workstations I, 7 Workstations II, 1 Additional Tactical Cryptologic System (TCS) Engineering Change Proposal (ECP) Information Operations (IO) Equipment, Fury Data Rights.</p> <p>FY18 funding will procure:  SSEE INC F: (6) SSEE Inc F Systems; (6) TCS Below Deck and Core Systems; (6) TCS Infrastructures  Information Warfare (IW): (1) Training Unit (Simulator)  SSEE INC F ECP: (7) Blade Replacement Kits; (5) Next Generation Chassis; (5) Workstations I; (7) Workstations II (7) TCS ECP Systems; (6) TCS ECP Next Generation Chassis; (5) TCS ECP Red Falcons Systems; Fury Data Rights  SSEE INC E ECP: (10) Red Falcon Antennas;  SSEE Modifications: (8) Graywing Systems</p>										

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 5: Reconnaissance Equipment		<b>P-1 Line Item Number / Title:</b> 2360 / Shipboard IW Exploit
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A	<b>Program Elements for Code B Items:</b> N/A	<b>Other Related Program Elements:</b> N/A
<b>Line Item MDAP/MAIS Code:</b> N/A		
<p>Unit Price Cost for (Ship's Signal Exploitation Equipment (SSEE) Increment F (and variants (Tactical Cryptologic System)(TCS)) and SSEE MODS (Modifications) in FY16 and FY17 have been updated due the award of a new Procurement Contract awarded in July 2016.</p> <p>Procurement UPCs for SSEE Increment F and SSEE MODS are based on contracted quantity discounts; SSEE OPN procurements are awarded with SSEE SCN, FMS and Coast Guard System procurements to achieve the best value for the government.</p> <p>The FY18 SSEE Increment F Procurement contract award will include a total of 8 systems (6 OPN, 1 SCN and 1 Coast Guard) resulting in a UPC of \$7.888M. The FY17 SSEE Increment F Procurement contract award will include a total of 9 systems (6 OPN, 2 SCN and 1 Coast Guard) resulting in a UPC of \$7.202M.</p>		

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Exhibit P-5, Cost Analysis: FY 2018 Navy													Date: May 2017								
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5							P-1 Line Item Number / Title: 2360 / Shipboard IW Exploit						Item Number / Title [DODIC]: 1 / Shipboard IW Exploit								
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:											
Resource Summary				Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
Procurement Quantity <i>(Units in Each)</i>				-			-			-			-			-			-		
Gross/Weapon System Cost <i>(\$ in Millions)</i>				445.480			23.222			9.077			3.536			0.000			3.536		
Less PY Advance Procurement <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Net Procurement (P-1) <i>(\$ in Millions)</i>				445.480			23.222			9.077			3.536			0.000			3.536		
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Total Obligation Authority <i>(\$ in Millions)</i>				445.480			23.222			9.077			3.536			0.000			3.536		
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																					
Initial Spares <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>				-			-			-			-			-			-		
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																					
Cost Elements	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total					
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)			
Hardware - Hardware - 1U017 - SSEE Inc F Shore Procurement Cost																					
Recurring Cost																					
1.1.1) SSEE Inc F Shore Procurement (Prior Years)	4,976.000	9	44.784	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000			
Subtotal: Recurring Cost	-	-	44.784	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000			
Subtotal: Hardware - Hardware - 1U017 - SSEE Inc F Shore Procurement Cost	-	-	44.784	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000			
Hardware - 1U013 SSEE Increment E ECP Cost																					
Recurring Cost																					
2.1.1) SSEE Inc E ECPs (Prior Years) <sup>(1)</sup>	2,419.748	115	278.271	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000			
2.1.2) DRT Blades <sup>(†)</sup>	497.727	22	10.950	418.222	9	3.764	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000			
2.1.3) Medusa <sup>(†)</sup>	339.024	41	13.900	280.000	2	0.560	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000			
2.1.4) Red Falcon Antennas <sup>(†)</sup>	-	-	0.000	-	-	0.000	80.000	10	0.800	81.000	10	0.810	-	-	0.000	81.000	10	0.810			
2.1.5) XP Eradication/ SLEP <sup>(†)</sup>	-	-	0.000	-	-	0.000	150.000	17	2.550	-	-	0.000	-	-	0.000	-	-	0.000			
Subtotal: Recurring Cost	-	-	303.121	-	-	4.324	-	-	3.350	-	-	0.810	-	-	0.000	-	-	0.810			
Subtotal: Hardware - 1U013 SSEE Increment E ECP Cost	-	-	303.121	-	-	4.324	-	-	3.350	-	-	0.810	-	-	0.000	-	-	0.810			

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Exhibit P-5, Cost Analysis: FY 2018 Navy													Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5						P-1 Line Item Number / Title: 2360 / Shipboard IW Exploit							Item Number / Title [DODIC]: 1 / Shipboard IW Exploit					
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Hardware - 1U019 SSEE Mods Shore Cost																		
Recurring Cost																		
4.1.1) LBTF Paragon/ Graywing <sup>(1)</sup>	4,917.000	3	14.751	5,537.000	2	11.074	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	14.751	-	-	11.074	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Hardware - 1U019 SSEE Mods Shore Cost	-	-	14.751	-	-	11.074	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Hardware - 1U029 Information Warfare (IW) Training Equipment Cost																		
Recurring Cost																		
6.1.1) Information Warfare (IW) Training Equipment <sup>(1)</sup>	854.933	15	12.824	1,864.000	1	1.864	1,895.000	1	1.895	1,927.000	1	1.927	-	-	0.000	1,927.000	1	1.927
Subtotal: Recurring Cost	-	-	12.824	-	-	1.864	-	-	1.895	-	-	1.927	-	-	0.000	-	-	1.927
Subtotal: Hardware - 1U029 Information Warfare (IW) Training Equipment Cost	-	-	12.824	-	-	1.864	-	-	1.895	-	-	1.927	-	-	0.000	-	-	1.927
Support - 1U555 Production Support Cost																		
8.1) SSEE Inc F Shore Production Support (Prior Years)	-	-	1.972	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
8.2) SSEE INC E ECP Production Support (Prior Years) <sup>(2)</sup>	-	-	2.868	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
8.3) SSEE Inc E ECP Production Support	-	-	0.000	-	-	1.402	-	-	0.200	-	-	0.116	-	-	0.000	-	-	0.116
8.5) SSEE MODS Shore Production Support	-	-	0.743	-	-	0.343	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
8.7) ICADS Production Support	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.153	-	-	0.000	-	-	0.153
Subtotal: Support - 1U555 Production Support Cost	-	-	5.583	-	-	1.745	-	-	0.200	-	-	0.269	-	-	0.000	-	-	0.269
Support - 1U776 / 1U777 Installation Cost																		
9.1) SSEE MODS Shore Install/DSA (Prior Years)	-	-	0.461	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
9.2) SSEE Inc F Shore Install/DSA (Prior Years)	-	-	3.210	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
9.3) SSEE Inc E ECP Install/DSA (Prior Years) (3)	-	-	60.746	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
9.4) DRT DSA	-	-	0.000	-	-	0.863	-	-	0.252	-	-	0.000	-	-	0.000	-	-	0.000



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Exhibit P-5, Cost Analysis: FY 2018 Navy													Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5						P-1 Line Item Number / Title: 2360 / Shipboard IW Exploit							Item Number / Title [DODIC]: 1 / Shipboard IW Exploit					
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
9.5) DRT Blades Install	-	-	0.000	-	-	3.094	-	-	1.452	-	-	0.000	-	-	0.000	-	-	0.000
9.6) Medusa DSA	-	-	0.000	-	-	0.042	-	-	0.020	-	-	0.000	-	-	0.000	-	-	0.000
9.7) Medusa Install	-	-	0.000	-	-	0.216	-	-	0.108	-	-	0.000	-	-	0.000	-	-	0.000
9.8) Red Falcon DSA	-	-	0.000	-	-	0.000	-	-	0.110	-	-	0.200	-	-	0.000	-	-	0.200
9.9) Red Falcon Install	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.330	-	-	0.000	-	-	0.330
9.10) XP Eradication/ SLEP Install	-	-	0.000	-	-	0.000	-	-	0.510	-	-	0.000	-	-	0.000	-	-	0.000
9.15) LBTF Paragon/ Graywing Install	-	-	0.000	-	-	0.000	-	-	1.180	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Support - 1U776 / 1U777 Installation Cost	-	-	64.417	-	-	4.215	-	-	3.632	-	-	0.530	-	-	0.000	-	-	0.530
Gross/Weapon System Cost	-	-	445.480	-	-	23.222	-	-	9.077	-	-	3.536	-	-	0.000	-	-	3.536

(†) indicates the presence of a P-5a

**Footnotes:**

- (1) SSEE Inc E ECP prior year Procurements.
- (2) SSEE Inc E ECP prior year Production Support costs (includes DRT and Medusa).
- (3) SSEE Inc E ECP prior year Install/DSA costs (includes DRT and Medusa).

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<b>Exhibit P-5a, Procurement History and Planning: FY 2018 Navy</b>									<b>Date: May 2017</b>			
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 5				<b>P-1 Line Item Number / Title:</b> 2360 / Shipboard IW Exploit					<b>Item Number / Title [DODIC]:</b> 1 / Shipboard IW Exploit			
<b>Cost Elements</b>	<b>O C O</b>	<b>FY</b>	<b>Contractor and Location</b>	<b>Method/Type or Funding Vehicle</b>	<b>Location of PCO</b>	<b>Award Date</b>	<b>Date of First Delivery</b>	<b>Qty (Each)</b>	<b>Unit Cost (\$ K)</b>	<b>Specs Avail Now?</b>	<b>Date Revision Available</b>	<b>RFP Issue Date</b>
2.1.2) DRT Blades		2016	TICOM / Austin, TX	C / FFP	San Diego, CA	Aug 2016	Aug 2017	9	418.222	N		
2.1.3) Medusa		2016	SSC LANT/Various / Charleston, SC	C / FFP	San Diego, CA	Aug 2016	Aug 2017	2	280.000	N		
2.1.4) Red Falcon Antennas		2017	SSC PAC / San Diego	WR	San Diego, CA	Dec 2016	Jul 2017	10	80.000	N		
2.1.4) Red Falcon Antennas		2018	SSC PAC / San Diego	C / TBD	San Diego, CA	Jan 2018	Aug 2018	10	81.000	N		
2.1.5) XP Eradication/SLEP		2017	TBD / TBD	C / TBD	San Diego, CA	May 2017	Nov 2017	17	150.000	N		
4.1.1) LBTF Paragon/Graywing		2016	Argon ST / Arlington, VA	C / FFP	San Diego, CA	Sep 2016	Sep 2017	2	5,537.000	N		
6.1.1) Information Warfare (IW) Training Equipment		2016	SSC PAC / San Diego, CA	WR	San Diego, CA	Nov 2015	Aug 2016	1	1,864.000	Y		
6.1.1) Information Warfare (IW) Training Equipment		2017	SSC PAC / San Diego, CA	WR	San Diego, CA	Nov 2016	Aug 2017	1	1,895.000	Y		
6.1.1) Information Warfare (IW) Training Equipment		2018	SSC PAC / San Diego, CA	WR	San Diego, CA	Nov 2017	Aug 2018	1	1,927.000	Y		

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 5			<b>P-1 Line Item Number / Title:</b> 2360 / Shipboard IW Exploit		<b>Modification Number / Title:</b> 1 / 1U017 SSEE Increment F Ship	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	368.739	70.435	92.167	108.472	0.000	108.472
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	368.739	70.435	92.167	108.472	0.000	108.472
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>368.739</b>	<b>70.435</b>	<b>92.167</b>	<b>108.472</b>	<b>0.000</b>	<b>108.472</b>
<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> )	-	-	-	-	-	-
<p><b>Description:</b></p> <p>The Ship Signal Exploitation Equipment (SSEE) Inc F Program will provide strike groups with Information Operation (IO) / non-kinetic capabilities and the subsequent ability to exploit Signals Of Interest (SOI) by providing a state-of-the-art system which detects, acquires, and collects data on any potential threat.</p> <p>[Inc F Systems (Ship)] Unit Price Cost for (Ship's Signal Exploitation Equipment (SSEE) Increment F (and variants (Tactical Cryptologic System)(TCS)) and SSEE MODS (Modifications) in FY16 and FY17 have been updated due the award of a new Procurement Contract awarded in July 2016.</p> <p>Procurement UPCs for SSEE Increment F and SSEE MODS are based on contracted quantity discounts; SSEE OPN procurements are awarded with SSEE SCN, FMS and Coast Guard System procurements to achieve the best value for the government.</p> <p>[TCS Below Deck and Core] Tactical Cryptologic System (TCS) is a scalable, modular variant of SSEE Increment F that allows configuration to meet platform mission requirements. TCS leverages SSEE Increment F common software, training, and logistics. TCS consists of infrastructure (Topside Antennas) which will be permanently installed on 41 Unit Level ships. The Below Deck Core system includes a modular component to all Mission Tailorable upgrades to increase capabilities. The modularity and scalability of TCS is delivered using Engineering Change Proposal (ECP).</p>						

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Exhibit P-3a, Individual Modification: FY 2018 Navy					Date: May 2017	
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5		P-1 Line Item Number / Title: 2360 / Shipboard IW Exploit			Modification Number / Title: 1 / 1U017 SSEE Increment F Ship	
ID Code (A=Service Ready, B=Not Service Ready) :				MDAP/MAIS Code:		
Models of Systems Affected: [No Model Specified]		Modification Type: TBD			Related RDT&E PEs: 0304785N	
Financial Plan	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Procurement						
Modification Item 1 of 1: 1U017 SSEE Increment F Ship						
B Kits						
Recurring						
1.1.1) Inc F Systems (Ship) - NonOrganic <sup>(4)</sup>	35 / 265.294	5 / 37.800	6 / 43.212	6 / 47.328	- / -	6 / 47.328
1.1.2) TCS Below Deck and Core - Organic	- / -	4 / 14.060	4 / 14.236	5 / 18.010	- / -	5 / 18.010
1.1.3) TCS Infrastructure - NonOrganic <sup>(5)</sup>	1 / 3.250	4 / 1.920	4 / 2.000	5 / 2.540	- / -	5 / 2.540
1.1.4) TCS Shore - Below Deck and Core - Organic	- / -	- / -	2 / 7.118	1 / 3.602	- / -	1 / 3.602
1.1.5) TCS Shore Infrastructure - NonOrganic <sup>(6)</sup>	3 / 13.588	- / -	2 / 1.000	1 / 0.508	- / -	1 / 0.508
Subtotal: Recurring	- / 282.132	- / 53.780	- / 67.566	- / 71.988	- / -	- / 71.988
Subtotal: 1U017 SSEE Increment F Ship	39 / 282.132	13 / 53.780	18 / 67.566	18 / 71.988	- / -	18 / 71.988
Subtotal: Procurement, All Modification Items	- / 282.132	- / 53.780	- / 67.566	- / 71.988	- / -	- / 71.988
Support (All Modification Items)						
2.1) Production Support (Ship)	- / 17.944	- / 3.057	- / 4.046	- / 4.245	- / 0.000	- / 4.245
2.2) DSA (Ship)	- / 13.719	- / 2.698	- / 4.667	- / 5.210	- / 0.000	- / 5.210
Subtotal: Support	- / 31.663	- / 5.755	- / 8.713	- / 9.455	- / -	- / 9.455
Installation						
Modification Item 1 of 1: 1U017 SSEE Increment F Ship	- / 54.944	- / 10.900	- / 15.888	- / 27.029	- / 0.000	- / 27.029
Subtotal: Installation	- / 54.944	- / 10.900	- / 15.888	- / 27.029	- / -	- / 27.029
Total						
Total Cost (Procurement + Support + Installation)	368.739	70.435	92.167	108.472	0.000	108.472

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy						<b>Date:</b> May 2017							
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 5				<b>P-1 Line Item Number / Title:</b> 2360 / Shipboard IW Exploit				<b>Modification Number / Title:</b> 1 / 1U017 SSEE Increment F Ship					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :						<b>MDAP/MAIS Code:</b>							
<b>Modification Item 1 of 1:</b> 1U017 SSEE Increment F Ship													
<b>Manufacturer Information</b>													
Manufacturer Name: ARGON - SSEE INC F						Manufacturer Location: Fairfax, VA							
Administrative Leadtime (in Months): 3						Production Leadtime (in Months): 12							
<b>Dates</b>		<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
Contract Dates		Jul 2016				Mar 2017				Jan 2018			
Delivery Dates		Jul 2017				Mar 2018				Jan 2019			
<b>Installation Information</b>													
<b>Method of Implementation:</b> Ship:: Installation Name: Inc F Systems (Ship)													
<b>Installation Cost</b>		<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>	
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total 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 / 54.944		5 / 10.000		3 / 6.102		- / -		- / -		- / -	
FY 2016		- / -		- / -		4 / 8.136		1 / 2.069		0 / 0.000		1 / 2.069	
FY 2017		- / -		- / -		- / -		6 / 12.414		0 / 0.000		6 / 12.414	
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -	
Total		27 / 54.944		5 / 10.000		7 / 14.238		7 / 14.483		0 / 0.000		7 / 14.483	
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	27	-	-	-	3	2	2	3	2	-	-	3	2
Out	27	-	-	-	-	3	2	2	3	2	-	-	3
<b>Method of Implementation:</b> IMO:: Installation Name: SSEE INC F Ship (Includes TCS Infrastructure and A2AD kits)													
<b>Installation Cost</b>		<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>	
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)	
Prior Years		- / -		- / -		1 / 1.650		- / -		- / -		- / -	
FY 2016		- / -		- / -		- / -		4 / 6.712		0 / 0.000		4 / 6.712	
FY 2017		- / -		- / -		- / -		3 / 5.034		0 / 0.000		3 / 5.034	
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -	
Total		- / -		- / -		1 / 1.650		7 / 11.746		0 / 0.000		7 / 11.746	

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy										<b>Date:</b> May 2017			
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 5					<b>P-1 Line Item Number / Title:</b> 2360 / Shipboard IW Exploit					<b>Modification Number / Title:</b> 1 / 1U017 SSEE Increment F Ship			
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :										<b>MDAP/MAIS Code:</b>			
<b>Modification Item 1 of 1:</b> 1U017 SSEE Increment F Ship													
<b>Installation Information</b>													
<b>Method of Implementation:</b> IMO:: Installation Name: SSEE INC F Ship (Includes TCS Infrastructure and A2AD kits)													
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	-	-	-	-	-	-	1	-	-	-	-	4	3
Out	-	-	-	-	-	-	-	1	-	-	-	-	4
<b>Method of Implementation:</b> [none specified]:: Installation Name: TCS Shore Infrastructure													
<b>Installation Cost</b>	<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>		
	Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		
Prior Years	-		-		3 / 0.900		-		-		-		
FY 2016	-		-		-		-		-		-		
FY 2017	-		-		-		2 / 0.800		0 / 0.000		2 / 0.800		
FY 2018	-		-		-		-		-		-		
Total	-		-		3 / 0.900		-		0 / 0.000		2 / 0.800		
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	-	-	3	-	-	-	-	-	-	-	-	2	-
Out	-	-	3	-	-	-	-	-	-	-	-	-	2
<b>Footnotes:</b>													
(4) First quarter installations reflected in the Installation Schedule are funded in the prior year in order to be able to fund the installation contracts 90 days prior to the beginning of shipboard installation work. 90 days are needed to allow sufficient time for the contractor to plan the work schedule, order material, and perform necessary fabrication. This procedure allows installations to be scheduled in the first quarter thereby supporting Fleet availability. The FY18 SSEE Increment F Procurement contract award will include a total of 8 systems (6 OPN, 1 SCN and 1 Coast Guard) resulting in a UPC of \$7.888M. The FY17 SSEE Increment F Procurement contract award will include a total of 9 systems (6 OPN, 2 SCN and 1 Coast Guard) resulting in a UPC of \$7.202M.													
(5) Tactical Cryptologic System (TCS) Infrastructure procurements are comprised of the antenna infrastructure and core hardware components. TCS Infrastructure will be permanently installed on (41) Unit Level platforms. The Unit Level platforms will pull from the TCS Below Deck and Core system rotatable pool when deploying.													
(6) TCS systems procured prior to FY16 included all infrastructure and below deck and core equipment.													

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 5		<b>P-1 Line Item Number / Title:</b> 2360 / Shipboard IW Exploit			<b>Modification Number / Title:</b> 2 / 1U018/1U019 Paragon-Graywing	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	26.512	16.126	42.750	54.083	0.000	54.083
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	26.512	16.126	42.750	54.083	0.000	54.083
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
<b>Total Obligation Authority</b> <i>(\$ in Millions)</i>	<b>26.512</b>	<b>16.126</b>	<b>42.750</b>	<b>54.083</b>	<b>0.000</b>	<b>54.083</b>
<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>	-	-	-	-	-	-
<b>Description:</b> SSEE Modifications is comprised of the Paragon and Graywing subsystems. Beginning in FY15, Paragon capabilities are collapsed into Graywing hardware resulting in cost efficiencies. Paragon is a classified Navy tactical signals intelligence frequency extension capability that will be integrated into Ship Signal Exploitation Equipment (SSEE) systems. This capability provides simultaneous detection, collection, processing, Information Operations and display of communication intelligence data from hostile, high threat and adversary platforms in select frequency ranges that are not prosecuted or countered today. Graywing is an advanced common data link system that will be integrated into SSEE Inc E and Inc F systems. It is a critical component of "Ballistic Missile Defense, Executive Committee, Anti-Submarine Warfare, Chief of Naval Operations, Executive Board Information Operation (IO) Countermeasure Red Flash" (details held at a higher classification level).						

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Exhibit P-3a, Individual Modification: FY 2018 Navy					Date: May 2017	
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5		P-1 Line Item Number / Title: 2360 / Shipboard IW Exploit			Modification Number / Title: 2 / 1U018/1U019 Paragon-Graywing	
ID Code (A=Service Ready, B=Not Service Ready) :				MDAP/MAIS Code:		
Models of Systems Affected: Various		Modification Type: Upgrade			Related RDT&E PEs: 0304785N	
Financial Plan	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
	Qty (Each) / Total Cost (\$ M)	Qty (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: 1U018/1U019 Paragon-Graywing						
B Kits						
Recurring						
1.1.1) Paragon - Organic	2 / 8.828	- / -	- / -	- / -	- / -	- / -
1.1.2) Graywing - NonOrganic <sup>(7)</sup>	2 / 8.828	2 / 11.074	7 / 36.638	8 / 40.608	- / -	8 / 40.608
1.1.3) LRIP Retrofit Kit - NonOrganic	1 / 2.100	- / -	- / -	- / -	- / -	- / -
Subtotal: Recurring	- / 19.756	- / 11.074	- / 36.638	- / 40.608	- / -	- / 40.608
Subtotal: 1U018/1U019 Paragon-Graywing	5 / 19.756	2 / 11.074	7 / 36.638	8 / 40.608	- / -	8 / 40.608
Subtotal: Procurement, All Modification Items	- / 19.756	- / 11.074	- / 36.638	- / 40.608	- / -	- / 40.608
Support (All Modification Items)						
2.1) Production Support	- / 4.736	- / 1.330	- / 2.198	- / 2.404	- / -	- / 2.404
2.2) DSA	- / 1.195	- / 0.682	- / 1.360	- / 1.985	- / -	- / 1.985
Subtotal: Support	- / 5.931	- / 2.012	- / 3.558	- / 4.389	- / -	- / 4.389
Installation						
Modification Item 1 of 1: 1U018/1U019 Paragon-Graywing	- / 0.825	- / 3.040	- / 2.554	- / 9.086	- / 0.000	- / 9.086
Subtotal: Installation	- / 0.825	- / 3.040	- / 2.554	- / 9.086	- / -	- / 9.086
Total						
Total Cost (Procurement + Support + Installation)	26.512	16.126	42.750	54.083	0.000	54.083



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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy						<b>Date:</b> May 2017							
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 5				<b>P-1 Line Item Number / Title:</b> 2360 / Shipboard IW Exploit				<b>Modification Number / Title:</b> 2 / 1U018/1U019 Paragon-Graywing					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :						<b>MDAP/MAIS Code:</b>							
<b>Modification Item 1 of 1:</b> 1U018/1U019 Paragon-Graywing													
<b>Manufacturer Information</b>													
Manufacturer Name: ARGON - Graywing - SHIP <sup>(8)</sup>						Manufacturer Location: Fairfax, VA							
Administrative Leadtime (in Months): 3						Production Leadtime (in Months): 12							
<b>Dates</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018</b>							
Contract Dates		Nov 2016		Jul 2017		Jan 2018							
Delivery Dates		Nov 2017		Jul 2018		Jan 2019							
<b>Installation Information</b>													
<b>Method of Implementation:</b> Ship:: Installation Name: Graywing													
<b>Installation Cost</b>	<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>		
	Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		
Prior Years	- / -		2 / 3.040		- / -		- / -		- / -		- / -		
FY 2016	- / -		- / -		2 / 2.554		- / -		- / -		- / -		
FY 2017	- / -		- / -		- / -		7 / 9.086		0 / 0.000		7 / 9.086		
FY 2018	- / -		- / -		- / -		- / -		- / -		- / -		
Total	- / -		2 / 3.040		2 / 2.554		7 / 9.086		0 / 0.000		7 / 9.086		
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	-	-	-	-	2	-	-	-	-	2	-	3	3
Out	-	-	-	-	-	2	-	-	-	-	2	-	3
<b>Method of Implementation:</b> Ship:: Installation Name: LRIP Retrofit Kit													
<b>Installation Cost</b>	<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>		
	Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total 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 / 0.825		- / -		- / -		- / -		- / -		- / -		
FY 2016	- / -		- / -		- / -		- / -		- / -		- / -		
FY 2017	- / -		- / -		- / -		- / -		- / -		- / -		
FY 2018	- / -		- / -		- / -		- / -		- / -		- / -		
Total	1 / 0.825		- / -		- / -		- / -		- / -		- / -		

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy										<b>Date:</b> May 2017			
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 5					<b>P-1 Line Item Number / Title:</b> 2360 / Shipboard IW Exploit					<b>Modification Number / Title:</b> 2 / 1U018/1U019 Paragon-Graywing			
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :								<b>MDAP/MAIS Code:</b>					
<b>Modification Item 1 of 1:</b> 1U018/1U019 Paragon-Graywing													
<b>Installation Information</b>													
<b>Method of Implementation:</b> Ship:: Installation Name: LRIP Retrofit Kit													
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	1	-	-	-	-	-	-	-	-	-	-	-	-
Out	1	-	-	-	-	-	-	-	-	-	-	-	-

**Footnotes:**

<sup>(7)</sup> Beginning in FY15, Paragon capabilities are collapsed into Graywing hardware resulting in cost efficiencies. First quarter installations reflected in the Installation Schedule are funded in the prior year in order to be able to fund the installation contracts 90 days prior to the beginning of shipboard installation work. 90 days are needed to allow sufficient time for the contractor to plan the work schedule, order material, and perform necessary fabrication. This procedure allows installations to be scheduled in the first quarter thereby supporting Fleet availability.

<sup>(8)</sup> FY17 administrative leadtime is delayed pending milestone decision awaiting a test event and supporting ship schedule.

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Exhibit P-3a, Individual Modification: FY 2018 Navy				Date: May 2017			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5		P-1 Line Item Number / Title: 2360 / Shipboard IW Exploit			Modification Number / Title: 3 / 1U014 Engineering Change Proposal (ECP) Increment F		
ID Code (A=Service Ready, B=Not Service Ready) :				MDAP/MAIS Code:			
Resource Summary		Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Procurement Quantity (Units in Each)		-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)		21.534	28.219	26.739	20.916	0.000	20.916
Less PY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)		21.534	28.219	26.739	20.916	0.000	20.916
Plus CY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)		21.534	28.219	26.739	20.916	0.000	20.916
(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: Engineering Change Proposal (ECP)/Obsolescence procures Commercial Off-The-Shelf/Non-Developmental Item (COTS/NDI) equipment to replace obsolete and end-of-life (EOL) equipment for the Ship's Signal Exploitation Equipment (SSEE) Increment F program. ECP incorporates Pre-Planned Product Improvements (P3I) for the acquisition and localization of the latest Signals of Interest (SOI) and Information Operations (IO). ECP maintains and improves upon SSEE Increment F's capability and relevance within a rapidly evolving threat environment. ECP equipment will be used to enable TCS to meet its scalable and modular capacity.  [Next Generation Chassis] Next Generation Chassis provides open-architecture VITA 49-VPX technology, enhanced data processing, and greater exposure of existing system services allowing hosting and integration of third party/Signal Intelligence (SIGINT) community capabilities, thereby expanding in-theater Electronic Warfare (EW) and Information Operations (IO) missions across the enterprise.  [Next Generation Chassis FY21] Next Generation Chassis will be installed with Blade Replacement Kits and Processing Upgrades Workstations I and II FY18-20 for cost savings. FY21 will be the only standalone year for Next Generation Chassis installation.  [Processing Upgrades Workstations I] Upgrades workstations to a modernized processing version to provide hardware/software compatibility for new software releases and ensure continued high system performance while standardizing configurations, thus improving sustainment and supportability. The Workstation Refresh further supports future expansion into mission modules and provides enhanced user experience during system operation.  [Processing Upgrades Workstations II] Upgrades workstations to a modernized processing version to provide hardware/software compatibility for new software releases and ensure continued high system performance while standardizing configurations, thus improving sustainment and supportability. The Workstation Refresh further supports future expansion into mission modules and provides enhanced user experience during system operation.  [Fury Data Rights] Funds the purchase of data rights for SSEE systems tested at FURY range.  [TCS ECP Next Generation Chassis] Next Generation Chassis provides open-architecture VITA 49-VPX industry backplane technology standards into the SSEE Increment F system providing enhanced data processing, and greater exposure of existing system services to allow hosting and integration of third party/SIGINT community capabilities, maximizing modularity for mission-tailorable capability specifically required for National/Tactical integration, thereby expanding in-theater EW and IO missions across the enterprise while also meeting constricting Space, Weight, Power and Cooling (SWaPC) requirements on ships.							

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 5	<b>P-1 Line Item Number / Title:</b> 2360 / Shipboard IW Exploit	<b>Modification Number / Title:</b> 3 / 1U014 Engineering Change Proposal (ECP) Increment F
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :		<b>MDAP/MAIS Code:</b>
<p>[Blade Replacement Kits] Procurement of Blade Replacement Kits to address IBM/Lenovo server replacement (Lenovo servers are being sold to foreign owners). These kits will be able to support system Technical Refresh, Windows 10 operating system compliance and replace obsolete parts.</p> <p>[TCS RFCU Kits] Radio Frequency Conditioning Unit (RFCU): A system for conditioning a received signal prior to transmission. The signal is separated into different signal components in respective contiguous frequency channels then routed through either time domain or frequency domain processing circuitry with a sample of the signal component routed through control signal generation circuitry. The outputs of each frequency channel are then combined into an output signal for transmission. This capability will be included in the baseline configuration of TCS beginning in FY18.</p>		

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Exhibit P-3a, Individual Modification: FY 2018 Navy					Date: May 2017	
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 5		P-1 Line Item Number / Title: 2360 / Shipboard IW Exploit			Modification Number / Title: 3 / 1U014 Engineering Change Proposal (ECP) Increment F	
ID Code (A=Service Ready, B=Not Service Ready) :				MDAP/MAIS Code:		
Models of Systems Affected: SSEE Inc F		Modification Type: Upgrade			Related RDT&E PEs: 0304785N	
Financial Plan	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
	Qty (Each) / Total Cost (\$ M)	Qty (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: 1U014 Engineering Change Proposal (ECP) Increment F						
B Kits						
Recurring						
1.1.1) CUB Replacement (Prior Year) - Organic	1 / 5.520	- / -	- / -	- / -	- / -	- / -
1.1.2) Next Generation Chassis - Organic <sup>(9)</sup>	- / -	- / -	- / -	5 / 2.625	- / -	5 / 2.625
1.1.4) Processing Upgrades Workstations I - Organic	- / -	- / -	- / -	5 / 0.100	- / -	5 / 0.100
1.1.5) Processing Upgrades Workstations II - NonOrganic	- / -	- / -	- / -	7 / 0.140	- / -	7 / 0.140
1.1.6) Fury Data Rights - Organic	- / -	- / -	- / -	1 / 1.600	- / -	1 / 1.600
1.1.7) LRIP to FRP BackFit Kit - NonOrganic	4 / 8.159	- / -	- / -	- / -	- / -	- / -
1.1.8) Red Falcon Upgrade Kits - NonOrganic <sup>(10)</sup>	- / -	10 / 1.630	- / -	- / -	- / -	- / -
1.1.9) TCS ECP IO Equipment - Organic	- / -	4 / 2.752	6 / 4.200	7 / 4.977	- / -	7 / 4.977
1.1.10) TCS ECP Next Generation Chassis - Organic	- / -	- / -	6 / 3.096	6 / 3.150	- / -	6 / 3.150
1.1.11) TCS ECP Red Falcon - Organic	- / -	4 / 0.876	6 / 1.338	5 / 1.130	- / -	5 / 1.130
1.1.12) TCS ECP Medusa - Organic	- / -	2 / 0.560	- / -	- / -	- / -	- / -
1.1.13) Blade Replacement Kits - NonOrganic	8 / 5.584	12 / 7.800	12 / 7.932	7 / 4.585	- / -	7 / 4.585
1.1.14) Blade Replacement Delta Kit - Organic	- / -	12 / 2.640	- / -	- / -	- / -	- / -
1.1.15) LBTF Refresh Kits - Organic	- / -	6 / 3.540	- / -	- / -	- / -	- / -
1.1.16) Pentax Wide Band Recorders for LBTF - Organic	- / -	2 / 0.244	3 / 0.381	- / -	- / -	- / -
1.1.17) TCS RFCU Kits - Organic	- / -	4 / 2.712	10 / 6.780	- / -	- / -	- / -
Subtotal: Recurring	- / 19.263	- / 22.754	- / 23.727	- / 18.307	- / -	- / 18.307
Subtotal: 1U014 Engineering Change Proposal (ECP) Increment F	13 / 19.263	56 / 22.754	43 / 23.727	43 / 18.307	- / -	43 / 18.307
Subtotal: Procurement, All Modification Items	- / 19.263	- / 22.754	- / 23.727	- / 18.307	- / -	- / 18.307
Support (All Modification Items)						
2.1) Production Support	- / 0.802	- / 1.267	- / 1.356	- / 1.002	- / -	- / 1.002
2.2) Production Support Red Falcon Upgrade Kits	- / -	- / 0.150	- / -	- / -	- / -	- / -
2.3) DSA	- / 1.089	- / 0.865	- / 0.804	- / 0.647	- / -	- / 0.647
2.4) DSA Red Falcon Upgrade Kits	- / -	- / 0.270	- / -	- / -	- / -	- / -
Subtotal: Support	- / 1.891	- / 2.552	- / 2.160	- / 1.649	- / -	- / 1.649

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 5			<b>P-1 Line Item Number / Title:</b> 2360 / Shipboard IW Exploit		<b>Modification Number / Title:</b> 3 / 1U014 Engineering Change Proposal (ECP) Increment F	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Models of Systems Affected:</b> SSEE Inc F		<b>Modification Type:</b> Upgrade			<b>Related RDT&amp;E PEs:</b> 0304785N	
Financial Plan	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
<b>Installation</b>						
<i>Modification Item 1 of 1:</i> 1U014 Engineering Change Proposal (ECP) Increment F	- / 0.380	- / 2.913	- / 0.852	- / 0.960	- / 0.000	- / 0.960
<i>Subtotal: Installation</i>	- / 0.380	- / 2.913	- / 0.852	- / 0.960	- / -	- / 0.960
<b>Total</b>						
<b>Total Cost (Procurement + Support + Installation)</b>	<b>21.534</b>	<b>28.219</b>	<b>26.739</b>	<b>20.916</b>	<b>0.000</b>	<b>20.916</b>

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy				<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 5		<b>P-1 Line Item Number / Title:</b> 2360 / Shipboard IW Exploit		<b>Modification Number / Title:</b> 3 / 1U014 Engineering Change Proposal (ECP) Increment F		
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :			<b>MDAP/MAIS Code:</b>			
<b>Modification Item 1 of 1:</b> 1U014 Engineering Change Proposal (ECP) Increment F						
<b>Manufacturer Information</b>						
Manufacturer Name: Next Generation Chassis			Manufacturer Location: Fairfax, VA			
Administrative Leadtime (in Months): 3			Production Leadtime (in Months): 12			
<b>Dates</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>			
Contract Dates			Jan 2018			
Delivery Dates			Jan 2019			
Manufacturer Name: Processing Upgrades Workstations			Manufacturer Location: Fairfax, VA			
Administrative Leadtime (in Months): 3			Production Leadtime (in Months): 12			
<b>Dates</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>			
Contract Dates			Jan 2018			
Delivery Dates			Jan 2019			
Manufacturer Name: Blade Replacement Kits			Manufacturer Location: Fairfax, VA			
Administrative Leadtime (in Months): 3			Production Leadtime (in Months): 12			
<b>Dates</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>			
Contract Dates	Aug 2016	Jan 2017	Jan 2018			
Delivery Dates	Aug 2017	Jan 2018	Jan 2019			
Manufacturer Name: Classified Manufacturer/USAF - Red Falcon			Manufacturer Location: TBD			
Administrative Leadtime (in Months): 3			Production Leadtime (in Months): 7			
<b>Dates</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>			
Contract Dates	Jan 2016					
Delivery Dates	Aug 2016					
<b>Installation Information</b>						
<b>Method of Implementation:</b> IMO:: Installation Name: ECP INC F						
<b>Installation Cost</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	8 / 0.560	- / -	- / -	- / -	- / -
FY 2016	- / -	- / -	12 / 0.852	- / -	- / -	- / -
FY 2017	- / -	- / -	- / -	12 / 0.960	0 / 0.000	12 / 0.960
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -
<b>Total</b>	<b>- / -</b>	<b>8 / 0.560</b>	<b>12 / 0.852</b>	<b>12 / 0.960</b>	<b>0 / 0.000</b>	<b>12 / 0.960</b>

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy										<b>Date:</b> May 2017			
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 5					<b>P-1 Line Item Number / Title:</b> 2360 / Shipboard IW Exploit					<b>Modification Number / Title:</b> 3 / 1U014 Engineering Change Proposal (ECP) Increment F			
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :								<b>MDAP/MAIS Code:</b>					
<b>Modification Item 1 of 1:</b> 1U014 Engineering Change Proposal (ECP) Increment F													
<b>Installation Information</b>													
<b>Method of Implementation:</b> IMO:: Installation Name: ECP INC F													
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	-	-	2	2	2	2	3	3	3	3	3	3	3
Out	-	-	-	2	2	2	2	3	3	3	3	3	3
<b>Method of Implementation:</b> Ship:: Installation Name: LRIP to FRP BackFit Kit													
<b>Installation Cost</b>	<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>		
	Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total 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 / 0.380		3 / 1.983		- / -		- / -		- / -		- / -		
FY 2016	- / -		- / -		- / -		- / -		- / -		- / -		
FY 2017	- / -		- / -		- / -		- / -		- / -		- / -		
FY 2018	- / -		- / -		- / -		- / -		- / -		- / -		
Total	1 / 0.380		3 / 1.983		- / -		- / -		- / -		- / -		
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	1	-	1	1	1	-	-	-	-	-	-	-	-
Out	1	-	-	1	1	1	-	-	-	-	-	-	-
<b>Method of Implementation:</b> Ship:: Installation Name: Red Falcon Upgrade Kits													
<b>Installation Cost</b>	<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>		
	Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total 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 2016	- / -		10 / 0.370		- / -		- / -		- / -		- / -		
FY 2017	- / -		- / -		- / -		- / -		- / -		- / -		
FY 2018	- / -		- / -		- / -		- / -		- / -		- / -		
Total	- / -		10 / 0.370		- / -		- / -		- / -		- / -		



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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 5	<b>P-1 Line Item Number / Title:</b> 2360 / Shipboard IW Exploit	<b>Modification Number / Title:</b> 3 / 1U014 Engineering Change Proposal (ECP) Increment F

<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :	<b>MDAP/MAIS Code:</b>
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**Modification Item 1 of 1:** 1U014 Engineering Change Proposal (ECP) Increment F

## Installation Information

**Method of Implementation:** Ship:: Installation Name: Red Falcon Upgrade Kits

## Installation Schedule

	PYS	FY 2016				FY 2017				FY 2018			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
In	-	-	-	-	4	6	-	-	-	-	-	-	-
Out	-	-	-	-	-	4	6	-	-	-	-	-	-

### Footnotes:

<sup>(9)</sup> First quarter installations reflected in the Installation Schedule are funded in the prior year in order to be able to fund the installation contracts 90 days prior to the beginning of shipboard installation work. 90 days are needed to allow sufficient time for the contractor to plan the work schedule, order material, and perform necessary fabrication. This procedure allows installations to be scheduled in the first quarter thereby supporting Fleet availability.

<sup>(10)</sup> Unit Cost of Red Falcon consists of the V(2) Upgrade kit and accompanying antenna.

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy										<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 5: Reconnaissance Equipment							<b>P-1 Line Item Number / Title:</b> 2361 / Automatic Identification System (AIS)					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A				<b>Program Elements for Code B Items:</b> N/A				<b>Other Related Program Elements:</b> N/A				
<b>Line Item MDAP/MAIS Code:</b> N/A												
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>To Complete</b>	<b>Total</b>
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	4.506	0.152	0.958	0.510	0.000	0.510	4.660	5.582	3.818	3.835	Continuing	Continuing
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	4.506	0.152	0.958	0.510	0.000	0.510	4.660	5.582	3.818	3.835	Continuing	Continuing
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>4.506</b>	<b>0.152</b>	<b>0.958</b>	<b>0.510</b>	<b>0.000</b>	<b>0.510</b>	<b>4.660</b>	<b>5.582</b>	<b>3.818</b>	<b>3.835</b>	<b>Continuing</b>	<b>Continuing</b>
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares ( <i>\$ in Millions</i> )	-	-	-	0.010	-	0.010	0.029	0.035	0.026	0.008	Continuing	Continuing
Flyaway Unit Cost ( <i>\$ in Thousands</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ( <i>\$ in Thousands</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Description:</b> 1U030: Automatic Identification System (AIS) is an international maritime Very High Frequency (VHF) communication system that allows ships to exchange information (machine to machine) on navigation (position, course, speed, etc), ship information (ship name, call sign, length/beam), cargo information (draft, type, destination, route, estimated time of arrival), and messaging (safety, text). This technology improves capability in three diverse areas: (a) situational awareness/common operational picture, (b) navigation/safety of ship and, (c) other intelligence gathering/correlation. AIS will procure Commercial Off-The-Shelf (COTS) AIS gear and install them on Navy warships. This provides the fleet with an operating capability to send unclassified data to the Maritime Operations Center (MOC). AIS provides an integrated AIS capability on force level United States (US) surface warships and submarines, including interfaces with ship's Global Command and Control System-Maritime/Common Operational Picture, and combat systems as defined by fleet requirements and concept of operations. The program provides Maritime Domain Awareness (MDA) AIS Sensor Server equipment to the MOC for publishing AIS data to the MDA Data Sharing Community of Interest. Funds will procure and install AIS systems for ships, submarines and shore sites consisting of a combination of modified COTS and government/commercial software, such as omni-directional VHF, Global Positioning System antennas, AIS transponders, displays and associated cables, servers, power supplies, laptop computers, junction boxes, switches and radio frequency couplers.												
<b>Justification:</b> FY18 funds provide for the procurement of two AIS submarine system, integration testing to support AIS installations on SSBN class submarines, installation funding for one submarine, and associated Design Services Allocation.												

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**Exhibit P-40, Budget Line Item Justification:** FY 2018 Navy **Date:** May 2017

<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 6: Submarine Surveillance Equipment	<b>P-1 Line Item Number / Title:</b> 2560 / Submarine Supt Equip Prog
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<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A	<b>Program Elements for Code B Items:</b> N/A	<b>Other Related Program Elements:</b> 0604503N, 0603562N
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**Line Item MDAP/MAIS Code:** N/A

Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	875.264	83.472	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	958.736
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	875.264	83.472	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	958.736
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>875.264</b>	<b>83.472</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>-</b>	<b>958.736</b>
<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> )	-	1.972	-	-	-	-	-	-	-	-	-	1.972
Flyaway Unit Cost ( <i>\$ in Dollars</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ( <i>\$ in Dollars</i> )	-	-	-	-	-	-	-	-	-	-	-	-

## Description:

Note: Submarine Electromagnetic Systems including Imaging, Electronic Warfare and Radar programs are managed by PMS435. Imaging Budget Line Item 0831 and Electronic Warfare Budget Line Item 2560 (including Radar) OPN funds will consolidate under BLI 0840 in FY17 and out.

(U) 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. The Electronic Warfare Support (ES) Operational Requirements Document (ORD) Serial. No. 570-77-00 dated 20 Dec. 2000, established funding to procure AN/BLQ-10 Electronic Warfare Support and Improved Communication Acquisition/Direction Finding (ICADF) systems to provide a modern ES capability to LOS ANGELES, SEAWOLF, and SSGN Class submarines. Funds procure AN/BLQ-10B(V) Non-Recurring Engineering (NRE), Pre-Production Units (PPU) and augmentation systems for ES Modernization upgrades for all submarine platforms. Funds also procure modification kits for the AN/BLQ-10(V) ES System, VIRGINIA Class ES Modernization upgrades, 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 unique equipment in limited quantities that are maintained in a 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.

ML005 - Procures Legacy Submarine Electronic Surveillance Measures (SubESM) AN/BRD-7 Reliability and Maintainability (R&M) obsolescence and operational Field Change Kits, e.g., Analog relay replacement, antenna cabling replacement, related Hull, Mechanical & Electrical (H,M&E) sail components and associated Integrated Logistics Support (ILS), and technical data.

ML007 - Procures the ICADF communications direction finding system below deck units for installation on LOS ANGELES and SEAWOLF Class submarines.

ML008 - Procures the ICADF Multi-Function Modular Mast (MMM) Antenna for installation on LOS ANGELES Class submarines. Procures spare MMMs to support fleet replacement in the event of catastrophic failure.

ML009 - Procures Capability Insertions for installation on LOS ANGELES, SSGN, and SEAWOLF Class submarines that provide incremental improvements to the AN/BLQ-10(V) baseline system for improved capability against new threats, to reduce size, procurement costs, power requirements and maintenance, while increasing system availability. Includes: Embedded National Tactical Receiver (ENTR)/Generic

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 6: Submarine Surveillance Equipment		P-1 Line Item Number / Title: 2560 / Submarine 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: 0604503N, 0603562N
Line Item MDAP/MAIS Code: N/A		
Area Limitation Environment (GALE) upgrade, Info Assurance (IA)/Solaris upgrade, Exterior Communication System (ECS) Point to Point upgrade, Low Probability of Intercept (LPI) Radar Receiver, and associated Integrated Logistics Support (ILS), and technical data.		
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) 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 TI-12, TI-14, TI-16, and TI-18.		
ML011 -Procures Legacy Submarine Electronic Surveillance Measures (SubESM) including AN/WLR-8 Reliability and Maintainability (R&M) 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 and associated Integrated Logistics Support (ILS), and technical data.		
ML015 - Procures the AN/BLQ-10(V)2/3/4 ES System for installation on LOS ANGELES, SEAWOLF, 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. Provide AN/BLQ-10 intermediate level repairs, changes and maintenance activities and associated materials that improve the overall Reliability, Maintainability and Availability of fielded SubESM systems. Procures maintenance and sustainment efforts for AN/BLQ-10 active, deploying fleet assets. Increased funding starting FY16 provided to address growing obsolescence and reliability issues as basic AN/BLQ-10 system continues to age.		
ML018 - Funds procure ES Modernization upgrades to the VIRGINIA Class AN/BLQ-10(V)1 ES System including Photonics ES Product Improvement (PEPI-3), PATRIOT Phase B range finder and Technical Insertions (TI).		
ML019 - Procures ESM spares to provide Ready for Issue (RFI) assets to maintain system operational availability.		
ML020 - Funds procure AN/BLQ-10B(V) Non-Reoccurring Engineering (NRE) and modernization kits for ES Modernization upgrades on all SSN/SSGN platforms. OPNAV direction provided for Next Generation EW Digital Submarine Electronic Warfare System Serial N97/12U144403 dated 17 June 12. The AN/BLQ-10B(V) efforts will transform the current AN/BLQ-10(V) system to a digital hardware system that will enable a sustainable, cost effective, software application based modernization process for the rapid fielding of required capabilities to address changing and emerging threats in the Radio Frequency (RF) spectrum. AN/BLQ-10B(V) incorporates a five layered approach including: RF, Digitizing, Interface, Processing, and Display. These layers serve as building blocks to the AN/BLQ-10(V) Modular, Open system, Scalable Architecture (MOSA) approach.		
ML021 - Procure BPS 15/16 Reliability and Maintainability (R&M) Field Change Kits and other materials for Obsolescence Mitigation. Provide 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. Also provides for interface with the conjoined Voyage Management System (VMS) and Electronic Chart & Display Information System - Navy (ECDIS-N). BPS 15/16 funding transferred as zero sum adjustment from BLI 0670 where these requirements were previously supported. Transfer done to provide more focused, submarine centric oversight of these ship safety required systems.		
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 ES Systems and upgrades.		
ML927 - Provides for the Installation of Equipment including Fleet Modernization Program Installations for shipboard systems.		
ML4M7 - Provides for the Installation of non-Fleet Modernization Program Equipment.		
Justification:		

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 6: Submarine Surveillance Equipment		<b>P-1 Line Item Number / Title:</b> 2560 / Submarine Supt Equip Prog
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A	<b>Program Elements for Code B Items:</b> N/A	<b>Other Related Program Elements:</b> 0604503N, 0603562N
<b>Line Item MDAP/MAIS Code:</b> N/A		
Note: Submarine Electromagnetic Systems including Imaging, Electronic Warfare and Radar programs are managed by PMS435. Imaging Budget Line Item 0831 and Electronic Warfare Budget Line Item 2560 (including Radar) OPN funds will consolidate under BLI 0840 in FY17 and out.		

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy										<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment							<b>P-1 Line Item Number / Title:</b> 2606 / Cooperative Engagement Capability					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A				<b>Program Elements for Code B Items:</b> 0607658N, 0603658N				<b>Other Related Program Elements:</b> N/A				
<b>Line Item MDAP/MAIS Code:</b> N/A												
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>To Complete</b>	<b>Total</b>
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	790.664	25.695	22.034	23.892	0.000	23.892	37.483	32.467	32.142	32.791	40.774	1,037.942
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	790.664	25.695	22.034	23.892	0.000	23.892	37.483	32.467	32.142	32.791	40.774	1,037.942
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>790.664</b>	<b>25.695</b>	<b>22.034</b>	<b>23.892</b>	<b>0.000</b>	<b>23.892</b>	<b>37.483</b>	<b>32.467</b>	<b>32.142</b>	<b>32.791</b>	<b>40.774</b>	<b>1,037.942</b>
<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> )	-	1.413	1.078	1.492	-	1.492	1.203	2.239	1.890	1.459	Continuing	Continuing
Flyaway Unit Cost ( <i>\$ in Dollars</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ( <i>\$ in Dollars</i> )	-	-	-	-	-	-	-	-	-	-	-	-

**Description:**

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

CEC consists of the Data Distribution System (DDS), the Cooperative Engagement Processor (CEP), and Combat System modifications. The DDS encodes and distributes ownship sensor and engagement data and is a high capacity, jam resistant, directive system providing a precision gridlocking and high throughput of data. The CEP is a high capacity distributed processor that is able to process force levels of data in near real-time. This data is passed to the ship's combat system as high quality data for which the ship can cue its onboard sensors or use the data to engage targets without actually tracking them. The Navy has begun implementation of a Pre-Planned Product Improvement (P3I) approach to modify the current equipment to meet reduced size, weight, cost, power and cooling objectives. This P3I approach also supports continuity for interoperability improvements and program protection, as well as supporting open architecture initiatives and comms independence. P3I will provide hardware which complies with Category 3 Open Architecture Core Environment (OACE) standards with rehosted existing software, which will be fielded fleet-wide to allow affordable replacement of obsolete computing system components and eliminate dependencies on "closed" equipment, operating systems, and middleware.

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

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

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment		P-1 Line Item Number / Title: 2606 / Cooperative Engagement Capability
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: 0607658N, 0603658N	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>[P40A / UC004 - ECP/KIT PROCUREMENT]: These funds are for the procurement and installation of Engineering Change Proposals (ECPs)(AN/USG-2 to AN/USG-2B upgrades/AN/USG-2A to AN/USG-2B upgrades) Field Change Kits to address CEC parts obsolescence associated with interfacing systems on multiple platforms..</p> <p>[P40A / UC005 - NON-RECURRING DEPOT COST]: This is a sunk cost to establish a depot for the CEC system.</p> <p>[P40A / UC006 - VISUAL INTERACTIVE SIMULATED TRAINING APPLICATION (VISTA) TRAINING]: This is a sunk cost to fund VISTA training related to the CEC system.</p> <p>[P40A / UC008 - SUPPLY SUPPORT]: This is a sunk cost for Supply Support for the CEC system.</p> <p>[P40A / UC011 - SIGNAL DATA PROCESSORS (SDP) BACKFITS (LBTS)]: Funds are for the procurement of Signal Data Processors (SDP) backfits at Land Based Test Sites (LBTSS). There are no installation costs associated with these procurements because the installations will be performed by employees at the LBTSS.</p> <p>[P40A / UC013 - AN/USG-2B HARDWARE CONVERSION KITS (AN/USG-2)]: Funds are for the procurement of AN/USG-2B hardware conversion kits for the CEC AN/USG-2 system configuration.</p> <p>[P40A / UC014 - AN/USG-2B HARDWARE CONVERSION KITS (AN/USG-2A)]: Funds are for the procurement of AN/USG-2B hardware conversion kits for the AN/USG-2A CEC system configuration.</p> <p>[P40A / UC015 - AN/USG-2B HARDWARE CONVERSION KITS (LBTS)]: Funds are for the procurement of AN/USG-2B hardware conversion kits for CEC Land Based Test Sites.</p> <p>[P40A / UC830 - PRODUCTION ENGR. SUPPORT]: These funds are for production engineering support for CEC systems.</p> <p>[P40A / UCCA1 - CONGRESSIONAL ADD]: These are Congressional add funds.</p> <p>[P40AMOD / UC001 - COOPERATIVE ENGAGEMENT TRANSMISSION PROCESSING SET (USG-2/2A/2B)]: These funds are for the procurement of CEC to backfit CG, DDG, CV/CVN, and LHD ship classes, as well as Land Based Test Sites (LBTSS).</p> <p>[P40AMOD / UC003 - PAAA BACKFIT KITS]: These funds are for the procurement of Planar Antenna Array Assembly (PAAA) backfit kits.</p> <p>[P40AMOD / UC009 - SIGNAL DATA PROCESSOR (SDP) BACKFITS (AN/USG-2)]: Funds are for the procurement of Signal Data Processors (SDP) backfits.</p> <p>[P40AMOD / UC010 - SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2A)]: Funds are for the procurement of Signal Data Processors (SDP) backfits for AN/USG-2A equipment.</p> <p>[P40AMOD / UC012 - COMMON ARRAY BLOCK (CAB) ANTENNA - SHIPBOARD]: Funds are for the procurement of Common Array Block (CAB) antennas for shipboard AN/USG-2B systems.</p>		

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy			Date: May 2017		
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment			P-1 Line Item Number / Title: 2606 / Cooperative Engagement Capability		
ID Code (A=Service Ready, B=Not Service Ready): A		Program Elements for Code B Items: 0607658N, 0603658N		Other Related Program Elements: N/A	
Line Item MDAP/MAIS Code: N/A					

Exhibits Schedule					Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	COOPERATIVE ENGAGEMENT CAPABILITY				- / 268.446	- / 5.975	- / 7.922	- / 11.235	- / -	- / 11.235
P-40a	UC001 - COOPERATIVE ENGAGEMENT TRANSMISSION PROCESSING SET (USG-2/2A/2B)				- / 437.582	- / 4.895	- / 0.182	- / 6.879	- / 0.000	- / 6.879
P-40a	UC003 - PAAA BACKFIT KITS				- / 50.751	- / 7.044	- / 2.644	- / 1.508	- / 0.000	- / 1.508
P-40a	UC009 - SIGNAL DATA PROCESSOR (SDP) BACKFITS (AN/USG-2)				- / 19.225	- / 4.958	- / 3.839	- / 3.285	- / 0.000	- / 3.285
P-40a	UC010 - SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2A)				- / 11.260	- / 2.240	- / 1.217	- / 0.392	- / 0.000	- / 0.392
P-40a	UC012 - COMMON ARRAY BLOCK (CAB) ANTENNA - SHIPBOARD				- / 3.400	- / 0.583	- / 6.230	- / 0.593	- / 0.000	- / 0.593
P-40	<b>Total Gross/Weapon System Cost</b>				<b>- / 790.664</b>	<b>- / 25.695</b>	<b>- / 22.034</b>	<b>- / 23.892</b>	<b>- / 0.000</b>	<b>- / 23.892</b>

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

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

**Justification:**

Funds are to procure hardware and provide associated support for the CEC system. Requirements are driven by planned procurements of CEC for LHD 2-6, Planar Antenna Array Assembly (PAAA) antennas, and Signal Data Processor (SDP) backfit kits. Increase to FY 18 requirements are to procure hardware in alignment with Fleet Modernization Procurement and Installation Plan for CEC Backfit to CG, DDG, CVN, and LHD ship classes as well as Land Based Test Sites (LBTS)

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy															Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7						P-1 Line Item Number / Title: 2606 / Cooperative Engagement Capability									Aggregated Items Title: COOPERATIVE ENGAGEMENT CAPABILITY					
Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
1) UC002 - AN/UYQ-70 DISPLAY																				
1.1) AN/UYQ-70 DISPLAY	A		-	-	21.493	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) UC002 - AN/UYQ-70 DISPLAY			-	-	21.493	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2) UC004 - ECP/KIT PROCUREMENT <sup>(1)</sup>																				
2.1) ECP/KIT PROCUREMENT	A		-	-	97.844	-	-	2.698	-	-	2.993	-	-	3.279	-	-	-	-	-	3.279
Subtotal: 2) UC004 - ECP/KIT PROCUREMENT			-	-	97.844	-	-	2.698	-	-	2.993	-	-	3.279	-	-	-	-	-	3.279
3) UC005 - NON-RECURRING DEPOT COST																				
3.1) NON- RECURRING DEPOT SUPPORT	A		-	-	4.500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 3) UC005 - NON- RECURRING DEPOT COST			-	-	4.500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4) UC006 - VISUAL INTERACTIVE SIMULATED TRAINING APPLICATION (VISTA) TRAINING																				
4.1) VISUAL INTERACTIVE SIMULATED TRAINING APPLICATION (VISTA) TRAINING	A		-	-	0.700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 4) UC006 - VISUAL INTERACTIVE SIMULATED TRAINING APPLICATION (VISTA) TRAINING			-	-	0.700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5) UC008 - SUPPLY SUPPORT																				
5.1) SUPPLY SUPPORT	A		-	-	6.094	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 5) UC008 - SUPPLY SUPPORT			-	-	6.094	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6) UC011 - SIGNAL DATA PROCESSORS (SDP) BACKFITS (LBTS)																				
6.1) SIGNAL DATA PROCESSORS (SDP) BACKFITS (LBTS)	A		405,846.15	13	5.276	-	-	-	227,154.00	2	0.454	231,697.00	5	1.158	-	-	-	231,697.00	5	1.158
Subtotal: 6) UC011 - SIGNAL DATA PROCESSORS (SDP) BACKFITS (LBTS)			-	-	5.276	-	-	-	-	-	0.454	-	-	1.158	-	-	-	-	-	1.158
7) UC013 - AN/USG-2B HARDWARE CONVERSION KITS (AN/USG-2)																				
7.1) AN/USG-2B HARDWARE	A		365,375.00	16	5.846	224,500.00	2	0.449	383,833.33	1	0.384	391,600.00	3	1.175	-	-	-	391,600.00	3	1.175

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy																Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7									P-1 Line Item Number / Title: 2606 / Cooperative Engagement Capability							Aggregated Items Title: COOPERATIVE ENGAGEMENT CAPABILITY					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total			
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	
CONVERSION KITS (AN/USG-2)																					
Subtotal: 7) UC013 - AN/USG-2B HARDWARE CONVERSION KITS (AN/USG-2)			-	-	5.846	-	-	0.449	-	-	0.384	-	-	1.175	-	-	-	-	-	1.175	
8) UC014 - AN/USG-2B HARDWARE CONVERSION KITS (AN/USG-2A)																					
8.1) AN/USG-2B HARDWARE CONVERSION KIT (AN/USG-2A)	A		277,700.00	10	2.777	168,000.00	1	0.168	293,000.00	1	0.293	299,000.00	1	0.299	-	-	-	299,000.00	1	0.299	
Subtotal: 8) UC014 - AN/USG-2B HARDWARE CONVERSION KITS (AN/USG-2A)			-	-	2.777	-	-	0.168	-	-	0.293	-	-	0.299	-	-	-	-	-	0.299	
9) UC015 - AN/USG-2B HARDWARE CONVERSION KITS (LBTS) <sup>(2)</sup>																					
9.1) AN/USG-2B HARDWARE CONVERSION KITS (LBTS)	A		367,200.00	5	1.836	-	-	-	386,509.00	2	0.773	394,300.00	5	1.972	-	-	-	394,300.00	5	1.972	
Subtotal: 9) UC015 - AN/USG-2B HARDWARE CONVERSION KITS (LBTS)			-	-	1.836	-	-	-	-	-	0.773	-	-	1.972	-	-	-	-	-	1.972	
10) UC830 - PRODUCTION ENGR. SUPPORT <sup>(3)</sup>																					
10.1) PRODUCTION ENGR. SUPPORT	A		-	-	84.541	-	-	2.660	-	-	3.025	-	-	3.352	-	-	-	-	-	3.352	
Subtotal: 10) UC830 - PRODUCTION ENGR. SUPPORT			-	-	84.541	-	-	2.660	-	-	3.025	-	-	3.352	-	-	-	-	-	3.352	
11) UCCA1 - CONGRESSIONAL ADD																					
11.1) CONGRESSIONAL ADD	A		-	-	23.249	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Subtotal: 11) UCCA1 - CONGRESSIONAL ADD			-	-	23.249	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
12) UC6IN - NON-FMP INSTALLATION																					
12.1) NON-FMP INSTALLATION	A		-	-	14.290	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Subtotal: 12) UC6IN - NON-FMP INSTALLATION			-	-	14.290	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total			-	-	268.446	-	-	5.975	-	-	7.922	-	-	11.235	-	-	-	-	-	11.235	
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																					
Footnotes:																					

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<b>Exhibit P-40a, Budget Item Justification For Aggregated Items:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 7	<b>P-1 Line Item Number / Title:</b> 2606 / Cooperative Engagement Capability	<b>Aggregated Items Title:</b> COOPERATIVE ENGAGEMENT CAPABILITY

<sup>(1)</sup> These funds are for the procurement and installation of Engineering Change Proposals (ECPs)(AN/USG-2 to AN/USG-2B upgrades/AN/USG-2A to AN/USG-2B upgrades) Field Change Kits to address CEC parts obsolescence associated with interfacing systems on multiple platforms.

<sup>(2)</sup> FY 18 requirements are for the procurement of additional AN/USG-2B hardware conversion kits for CEC Land Based Test Sites in order for hardware to current reflect Fleet configurations.

<sup>(3)</sup> These funds are for production engineering support for CEC systems.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy										Date: May 2017	
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7					P-1 Line Item Number / Title: 2606 / Cooperative Engagement Capability					Aggregated Items Title: UC001 - COOPERATIVE ENGAGEMENT TRANSMISSION PROCESSING SET (USG-2/2A/2B)	

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring																				
COOPERATIVE ENGAGEMENT TRANSMISSION PROCESSING SET (USG-2/2A/2B) -- Procurement <sup>(4)</sup>	A		7,594K	48	364.527	3,448K	1	3.448	-	-	-	5,276K	1	5.276	-	-	-	5,276K	1	5.276
COOPERATIVE ENGAGEMENT TRANSMISSION PROCESSING SET (USG-2/2A/2B) -- Installation	A		-	-	73.055	-	-	1.447	-	-	0.182	-	-	1.603	-	-	-	-	-	1.603
Subtotal: B Kits/Recurring			-	-	437.582	-	-	4.895	-	-	0.182	-	-	6.879	-	-	-	-	-	6.879
Total			-	-	437.582	-	-	4.895	-	-	0.182	-	-	6.879	-	-	0.000	-	-	6.879

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

**Remarks:**

Models of Systems Affected: UC001 COOPERATIVE ENGAGEMENT TRANSMISSION PROCESSING SET (CETPS) (AN/USG-2/2A/2B)  
Type Modification: SGAAW

Strike Group Anti-Air Warfare (AAW) Improvement. These funds are for the procurement of CEC to backfit CG, DDG, CV/CVN, and LHD ship classes, as well as various Land Based Test Sites (LBTs). Increases in cost to the USG-2B system from FY 16 to FY 18 is attributed to procuring a new type of hardware - a Common Block Array (CAB) Antenna vice PAAA antenna for LHD class ships in FY 18.

**Footnotes:**

<sup>(4)</sup> Funds in FY 17 are required for installation planning activities in preparation for installation in FY 18. Funds in FY 19 are required for installation planning activities in preparation for installation in FY 20

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy															Date: May 2017						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7						P-1 Line Item Number / Title: 2606 / Cooperative Engagement Capability									Aggregated Items Title: UC003 - PAAA BACKFIT KITS						
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)	
B Kits/Non-Recurring																					
PAAA BACKFIT KITS -- Procurement		A		3,436K	11	37.801	2,755K	2	5.511	-	-	-	-	-	-	-	-	-	-	-	
PAAA BACKFIT KITS -- Installation		A		-	-	12.950	-	-	1.533	-	-	2.644	-	-	1.508	-	-	-	-	1.508	
Subtotal: B Kits/Non-Recurring				-	-	50.751	-	-	7.044	-	-	2.644	-	-	1.508	-	-	-	-	-	1.508
Total				-	-	50.751	-	-	7.044	-	-	2.644	-	-	1.508	-	-	0.000	-	-	1.508

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

**Remarks:**

Models of Systems Affected: UC003 PAAA BACKFIT KITS  
Type Modification: SGAAW

Strike Group Anti-Air Warfare (AAW) Improvement. The PAAA Backfit Kit procurements will be replaced with Common Array Block (CAB) - Shipboard Antenna procurements commencing in FY16. PAAA Backfit Kits are installed on CG, DDG, CVN, LPD, and LHD ship classes  
The 2 PAAA antennas being procured in FY15 and 1 PAAA being procured in FY16 will replace 3 older SBAA antennas currently in the Fleet. These SBAA's are very expensive to maintain and some of the parts are becoming obsolete. PAAA Backfit Kits are installed on CG, DDG, CVN, LPD, and LHD ship classes



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<b>Exhibit P-40a, Budget Item Justification For Aggregated Items:</b> FY 2018 Navy															<b>Date:</b> May 2017				
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 7								<b>P-1 Line Item Number / Title:</b> 2606 / Cooperative Engagement Capability							<b>Aggregated Items Title:</b> UC009 - SIGNAL DATA PROCESSOR (SDP) BACKFITS (AN/USG-2)				

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring																				
SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2) -- Procurement <sup>(5)</sup>	A		440,518.52	27	11.894	185,786.00	2	0.372	227,154.00	1	0.227	231,697.00	3	0.695	-	-	-	231,697.00	3	0.695
SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2) -- Installation	A		-	-	7.331	-	-	4.586	-	-	3.612	-	-	2.590	-	-	-	-	-	2.590
Subtotal: B Kits/Recurring			-	-	19.225	-	-	4.958	-	-	3.839	-	-	3.285	-	-	-	-	-	3.285
Total			-	-	19.225	-	-	4.958	-	-	3.839	-	-	3.285	-	-	0.000	-	-	3.285

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

**Remarks:**

Models of Systems Affected: UC009 SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2)  
Type Modification: SGAAW

Strike Group Anti-Air Warfare (AAW) Improvement. Funds are for the procurement of Signal Data Processors (SDP) backfits in alignment with Fleet Modernization Procurement and Installation Plan for CEC Backfit to CG, DDG, CVN, and LHD ship classes  
Prior Year and FY12 includes funding to procure AN/USG-2B hardware conversion kits. A new cost code (UC013) was created and the funding for the hardware conversion kits has been realigned to this cost code for FY13-18.

**Footnotes:**

<sup>(5)</sup> A new cost code (UC013) was created and the funding for the hardware conversion kits has been realigned to this cost code for FY13-18. Funds are for the procurement of Signal Data Processors (SDP) backfits in alignment with Fleet Modernization Procurement and Installation Plan for CEC Backfit to CG, DDG, CVN, and LHD ship classes

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy															Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7								P-1 Line Item Number / Title: 2606 / Cooperative Engagement Capability							Aggregated Items Title: UC010 - SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2A)					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurrring																				
SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2A) -- Procurement <sup>(6)</sup>	A		365,500.00	20	7.310	185,786.00	1	0.186	227,154.00	1	0.227	231,697.00	1	0.232	-	-	-	231,697.00	1	0.232
SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2A) -- Installation	A		-	-	3.950	-	-	2.054	-	-	0.990	-	-	0.160	-	-	-	-	-	0.160
Subtotal: B Kits/Recurring			-	-	11.260	-	-	2.240	-	-	1.217	-	-	0.392	-	-	-	-	-	0.392
Total			-	-	11.260	-	-	2.240	-	-	1.217	-	-	0.392	-	-	0.000	-	-	0.392
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
Remarks: Models of Systems Affected: UC010 SIGNAL DATA PROCESSORS (SDP) BACKFITS (AN/USG-2A) Type Modification: SGAAW  Strike Group Anti-Air Warfare (AAW) Improvement. Funds are for the procurement of Signal Data Processors (SDP) backfits for AN/USG-2A equipment in alignment with Fleet Modernization Procurement and Installation Plan for CEC Backfit to CG, DDG, CVN, and LHD ship classes  Footnotes: <sup>(6)</sup> Funds are for the procurement of Signal Data Processors (SDP) backfits for AN/USG-2A equipment in alignment with Fleet Modernization Procurement and Installation Plan for CEC Backfit to CG, DDG, CVN, and LHD ship classes. First Delivery from Competitively awarded May 2017 contract in will be November 2018.																				

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy														Date: May 2017						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7						P-1 Line Item Number / Title: 2606 / Cooperative Engagement Capability									Aggregated Items Title: UC012 - COMMON ARRAY BLOCK (CAB) ANTENNA - SHIPBOARD					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurrring																				
COMMON ARRAY BLOCK (CAB) ANTENNA - SHIPBOARD -- Procurement <sup>(7)</sup>	A		1,700K	2	3.400	-	-	-	2,204K	2	4.408	-	-	-	-	-	-	-	-	-
COMMON ARRAY BLOCK (CAB) ANTENNA - SHIPBOARD -- Installation	A		-	-	-	-	-	0.583	-	-	1.822	-	-	0.593	-	-	-	-	-	0.593
Subtotal: B Kits/Recurring			-	-	3.400	-	-	0.583	-	-	6.230	-	-	0.593	-	-	-	-	-	0.593
Total			-	-	3.400	-	-	0.583	-	-	6.230	-	-	0.593	-	-	0.000	-	-	0.593
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
Remarks: Models of Systems Affected: UC012 COMMON ARRAY BLOCK (CAB) ANTENNA - SHIPBOARD Type Modification: SGAAW  Strike Group Anti-Air Warfare (AAW) Improvement. Funds are for the procurement of Common Array Block (CAB) antennas for shipboard AN/USG-2B systems in alignment with Fleet Modernization Procurement and Installation Plan for CEC Backfit to CG, DDG, CVN, and LHD ship classes,  Footnotes: <sup>(7)</sup> The unit price of the CAB increased by approximately \$400K from the PB-16 budget starting in FY17. This increase is driven by the requirement to procure 1 new Environmental Control System Controller (ECSC) for each CAB that is procured.																				

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy										<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment							<b>P-1 Line Item Number / Title:</b> 2608 / Trusted Information System (TIS)					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A				<b>Program Elements for Code B Items:</b> N/A				<b>Other Related Program Elements:</b> 0304231N				
<b>Line Item MDAP/MAIS Code:</b> N/A												
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>To Complete</b>	<b>Total</b>
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	11.495	0.284	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	11.779
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	11.495	0.284	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	11.779
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority</b> <i>(\$ in Millions)</i>	<b>11.495</b>	<b>0.284</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>-</b>	<b>11.779</b>
<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>	-	0.008	0.004	-	-	-	-	-	-	-	-	0.012
Flyaway Unit Cost <i>(\$ in Thousands)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>	-	-	-	-	-	-	-	-	-	-	-	-
<b>Description:</b> Trusted Information System (TIS) Radiant Mercury (RM) system provides the core on-line, automated guarding, sanitization, and transliteration services that provides the United State Navy (USN)'s primary command and control systems with the capability to move data between multiple security domains. RM is a critical component in a wide variety of Navy architectures to include Consolidated Afloat Network Enterprise Services (CANES) and the Maritime Operations Centers (MOC). RM supports numerous programs to include the Navy's Automated Identification System (AIS), Global Command Control Systems-Maritime (GCCS-M), Distributed Common Ground System-Navy (DCGS-N), and Navy Tactical Ranges, Naval Modular Automated Communications System (NAVMACS), and Mobile User Objective System (MUOS). RM architecture provides the capability to move data between security domains in order to maintain Maritime Domain Awareness (MDA) and effectively share information. As the Department of Defense (DoD) Executive Agent for RM the USN also maintains the RM development team, Independent Validation and Verification (IV&V) team, and test facilities for both the DoD and the Intelligence Community. RM is deployed at over 380 sites worldwide with approximately 600 fielded systems. Funds continuous hardware tech refresh at the prime developer and at certification test locations.  Funding in FY17 and out was realigned to OMN AGSAG 1C1C due to the increased level of national-level Cybersecurity certification and accreditation requirements.												

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy										<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment							<b>P-1 Line Item Number / Title:</b> 2611 / Naval Tact Cmd Supt Sys (NTCSS)					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A				<b>Program Elements for Code B Items:</b> N/A				<b>Other Related Program Elements:</b> N/A				
<b>Line Item MDAP/MAIS Code:</b> N/A												
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>To Complete</b>	<b>Total</b>
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	606.170	14.416	12.336	10.741	0.000	10.741	9.946	17.657	18.015	18.375	Continuing	Continuing
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	606.170	14.416	12.336	10.741	0.000	10.741	9.946	17.657	18.015	18.375	Continuing	Continuing
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>606.170</b>	<b>14.416</b>	<b>12.336</b>	<b>10.741</b>	<b>0.000</b>	<b>10.741</b>	<b>9.946</b>	<b>17.657</b>	<b>18.015</b>	<b>18.375</b>	<b>Continuing</b>	<b>Continuing</b>
<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> )	-	0.219	0.122	0.204	-	0.204	0.290	0.562	0.321	0.283	Continuing	Continuing
Flyaway Unit Cost ( <i>\$ in Thousands</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ( <i>\$ in Thousands</i> )	-	-	-	-	-	-	-	-	-	-	-	-

**Description:**

The Naval Tactical Command Support System (NTCSS) is a multi-function program designed to provide standard tactical support information systems to various afloat and associated shore-based fleet activities. The mission is to provide the full range of responsive tactical support Automated Data Processing (ADP) hardware and software in support of the management of information, personnel, material and funds required to maintain and operate ships, submarines, and aircraft. NTCSS is to provide an efficient management of afloat tactical support data, through the use of standardized hardware and software, to meet the mission support information management requirements for force sustainment.

NTCSS incorporates the functionality of the Shipboard Non-Tactical ADP Program (SNAP) systems, the Naval Aviation Logistics Command Management Information System (NALCOMIS), and the Maintenance Resource Management System (MRMS).

SNAP is an automated information system that supports organizational level maintenance, supply, financial and administrative functions on afloat units, at Marine Aviation Logistics Squadrons (MALs) and at associated shore activities. SNAP improves equipment supportability and maintainability and thus readiness through: improvement in the accuracy of maintenance, supply, financial and related support data maintained and reported by the ship; and acceleration of management report preparation and data transmission. The scope of SNAP includes approximately 300 sites.

NALCOMIS is an automated, real time, interactive, management information system that provides a modern management tool for day-to-day management of aircraft maintenance at the organizational and intermediate levels. NALCOMIS automates management of the aviation repairables inventory, providing nose-to-tail tracking through the repair and operations cycles. The scope of NALCOMIS includes 66 aviation intermediate maintenance activities located afloat (CVN/LHA/LHD/MALS), at Naval Air Stations (NAS), and approximately 326 Navy and Marine Squadrons.

MRMS is an automated information system that supports ship intermediate maintenance management of the Atlantic and Pacific Fleets. MRMS supports Type Commands, Group Commanders, Area Coordinators, Readiness Support Groups, Submarine Squadrons, Ship Repair Facilities, and various Intermediate Maintenance Activities, both afloat and ashore, for budgeting, planning, production and analysis of ship maintenance. MRMS improves ship readiness through improved maintenance and ship repair management, information resource management, and maintenance data processing. The scope of MRMS includes approximately 16 shipboard and 65 shore based intermediate and maintenance and planning activities.

DY005, Ship Set Equipment Upgrades procures afloat ruggedized, commercial-off-the-shelf (COTS) computing equipment, which includes servers to support the NTCSS application and database, personal computers (PCs) that will interface with the servers for maintenance and supply transactions, and printers to display output. COTS software, which includes the operating system, comes loaded on the servers and PCs.

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment		<b>P-1 Line Item Number / Title:</b> 2611 / Naval Tact Cmd Supt Sys (NTCSS)
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A	<b>Program Elements for Code B Items:</b> N/A	<b>Other Related Program Elements:</b> N/A
<b>Line Item MDAP/MAIS Code:</b> N/A		
DY006, MALS/Shore Equipment Upgrades procures ashore ruggedized, COTS computing equipment, which includes servers to support the NTCSS application and database, PCs that will interface with the servers for maintenance and supply transactions, and printers to display output. COTS software, which includes the operating system, comes loaded on the servers and PCs.		
<b>Justification:</b> Funding for FY18 procures: 1) NTCSS system upgrades for ships; 2) NTCSS system upgrades for Naval Air Stations (NAS), Squadrons, Shore Support Facilities, Fleet Training Centers, Marine Aviation Logistics Squadrons (MALs), Navy Expeditionary Combat Command sites, Special Warfare units, and Commander Naval Surface Forces; and 3) necessary production engineering and installation support.  NTCSS-Optimized software will continue to be fielded at program-of-record (POR) afloat and ashore sites. Ship set and MALS/Shore equipment upgrades continue; hardware and software upgrades required for obsolescence avoidance.		



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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy										<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment							<b>P-1 Line Item Number / Title:</b> 2614 / Adv Tact Data Link Sys (ATDLS)					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): B				<b>Program Elements for Code B Items:</b> N/A				<b>Other Related Program Elements:</b> 0205604N				
<b>Line Item MDAP/MAIS Code:</b> N/A												
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>To Complete</b>	<b>Total</b>
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	18.389	22.169	30.105	38.016	0.000	38.016	34.696	37.983	40.912	46.829	Continuing	Continuing
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	18.389	22.169	30.105	38.016	0.000	38.016	34.696	37.983	40.912	46.829	Continuing	Continuing
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>18.389</b>	<b>22.169</b>	<b>30.105</b>	<b>38.016</b>	<b>0.000</b>	<b>38.016</b>	<b>34.696</b>	<b>37.983</b>	<b>40.912</b>	<b>46.829</b>	<b>Continuing</b>	<b>Continuing</b>
<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> )	-	1.225	0.824	5.647	-	5.647	9.900	3.682	2.928	0.701	Continuing	Continuing
Flyaway Unit Cost ( <i>\$ in Thousands</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ( <i>\$ in Thousands</i> )	-	-	-	-	-	-	-	-	-	-	-	-

**Description:**

The Advanced Tactical Data Link Systems (ATDLS) funds the Time Division Multiple Access family of Link 16 terminals including the Multifunctional Information Distribution System - Low Volume Terminal, Multifunctional Information Distribution System - Joint Tactical Radio System, Joint Tactical Information Distribution System (JTIDS) and the Tactical Digital Information Link - Joint (TADIL-J) message standard databases resident in the Command & Control Processor (C2P)/ Common Data Link Management System (CDLMS). ATDLS funds the Command and Control Processor (C2P) Technology Refresh, Next Generation (NG) C2P (NGC2P) upgrades to meet LHD combat system upgrades, Link-22 capability upgrades, Link 16 terminal upgrades and replacements, Link 16 antenna replacements, Link Monitoring Management Tool, and other ATDLS integration.

Command and Control Processor (C2P) Technology Refresh Full Systems Ship/Shore (DR003): C2P computer processing boards are obsolete and have antiquated software code with no industrial base support. Technology refresh is required for C2P software modernization. Additionally, C2P configuration is not shock qualified. Full Systems upgrades are required to achieve 901D shock certification.

Command and Control Processor (C2P) Amphibious Assault Ship (LHD) Upgrades (DR003): Changes to LHD combat systems starting in FY13 will require NGC2P/CDLMS upgrades in order to maintain critical data link functions including simultaneous processing of Link 11, Link 16 and JRE.

Link 16 Upgrade Kits Ship/Shore (DR012): Link 16 terminals will be upgraded on U.S. Navy surface platforms. Existing Link 16 Joint Tactical Information Distribution System terminals and Multifunctional Information Distribution System on Ship (MOS) terminals will be implemented with Frequency Remapping (FR) and Crypto Modernization (CM) mandated upgrades. The product improvement will bring the Link 16 terminals in compliance with the Department of Defense / Department of Transportation Memorandum of Agreement (31DEC02) and updated National Security Agency approved cryptographic algorithms.

Link 16 MOS Modernization (MOS MOD) Replacement Ship/Shore (DR012): CVN's and ships which currently are outfitted with JTIDS terminals will have Link 16 terminals replaced with modernized MOS terminals in addition to meeting Frequency Remapping and Crypto Modernization mandated upgrades. MOS Mod units will transition to the use of Multifunctional Information Distribution System Joint Tactical Radio System (MIDS-J) Current Multi-Netting (CMN) terminal vice MIDS-J Core terminals.

Link 16 Antenna Replacement (DR012): Existing obsolete dedicated Link 16 shipboard antenna will be replaced.

Link 16 MOS Terminal Controller Central Processing Unit (TC CPU Update): TC CPU update is required to address obsolescence issue in the TC CPU as well as provide mandated transition to Windows 10 operating system. Will be fielded on all MOS ships.

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment		<b>P-1 Line Item Number / Title:</b> 2614 / Adv Tact Data Link Sys (ATDLS)
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): B	<b>Program Elements for Code B Items:</b> N/A	<b>Other Related Program Elements:</b> 0205604N
<b>Line Item MDAP/MAIS Code:</b> N/A		
<p>Link Monitoring Management Tool (LMMT) Ship/Shore (DR014): LMMT is required to enable Joint Interface Control Officers (JICOs) to effectively monitor and manage the performance of tactical data link networks. Funds procurement and installation of LMMT hardware on ships and shore sites. The Multifunctional Information Distribution System (MIDS) will also be procured and installed for the CVNs.</p> <p>Advanced Tactical Data Link Systems (ATDLS) Training (DR666): Develop initial end-to-end training curriculum and simulators.</p>		

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy								<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment						<b>P-1 Line Item Number / Title:</b> 2614 / Adv Tact Data Link Sys (ATDLS)				
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): B			<b>Program Elements for Code B Items:</b> N/A			<b>Other Related Program Elements:</b> 0205604N				
<b>Line Item MDAP/MAIS Code:</b> N/A										
Exhibits Schedule					Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / Adv Tact Data Link Sys (ATDLS)	P-5a			- / 18.389	- / 16.848	- / 14.140	- / 10.945	- / 0.000	- / 10.945
P-3a	1 / Adv Tact Data Link Sys (ATDLS) (TBD)				- / 0.000	- / 5.321	- / 15.965	- / 27.071	- / 0.000	- / 27.071
<b>P-40</b>	<b>Total Gross/Weapon System Cost</b>				<b>- / 18.389</b>	<b>- / 22.169</b>	<b>- / 30.105</b>	<b>- / 38.016</b>	<b>- / 0.000</b>	<b>- / 38.016</b>
<p>*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.</p> <p>Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.</p>										
<p><b>Justification:</b> Advanced Tactical Data Link Systems (ATDLS) procure command and control equipment for both shipboard and shore units including the Multifunctional Information Distribution System on Ship (MOS) Modernization (MOD) Terminals, Link 16 Network Program Antennas, Command and Control Processor (C2P) hardware and software, and increase in Link Monitoring Management Tool (LMMT) hardware and software to address Air Defense System Integrator (ADSI) obsolesce issues.</p> <p>FY2018: The increase in ATDLS OPN budget is required to address significant C2P system hardware obsolescence issues with the legacy installed base. These obsolescence issues are negatively impacting system Ao (availability). Additionally, C2P Tech Refresh production is increasing significantly to support mission requirements for both AEGIS Ballistic Missile Defense (BMD) and accelerated Amphibious ship C5I connectivity requirements to support F35 strike fighter data link communications. It should be noted that Link 16 Network JTIDS, MOS, and MOS MOD production efforts have moved to FY19 and beyond and are still under OSD mandate to fully field Link 16 Frequency Remapping capabilities on all platforms by 2025.</p> <p>Link 16 Antenna Upgrade unit cost increase is due to an upgrade to AS4775, which will improve capability to receive/transit on increased frequency spectrum and improve elevation angle and strengthen mast extensions.</p>										

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Exhibit P-5, Cost Analysis: FY 2018 Navy												Date: May 2017							
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7						P-1 Line Item Number / Title: 2614 / Adv Tact Data Link Sys (ATDLS)							Item Number / Title [DODIC]: 1 / Adv Tact Data Link Sys (ATDLS)						
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:									
Resource Summary				Prior Years		FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total					
Procurement Quantity <i>(Units in Each)</i>				-		-		-		-		-		-					
Gross/Weapon System Cost <i>(\$ in Millions)</i>				18.389		16.848		14.140		10.945		0.000		10.945					
Less PY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-					
Net Procurement (P-1) <i>(\$ in Millions)</i>				18.389		16.848		14.140		10.945		0.000		10.945					
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-					
Total Obligation Authority <i>(\$ in Millions)</i>				18.389		16.848		14.140		10.945		0.000		10.945					
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																			
Initial Spares <i>(\$ in Millions)</i>				-		-		-		-		-		-					
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>				-		-		-		-		-		-					
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																			
Cost Elements		Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
		Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Flyaway - Adv Tact Data Link Sys (ATDLS) - DR003 C2P Cost																			
Recurring Cost																			
1.1.1) C2P - Technology Refresh Full System Shore <sup>(†)</sup>		975.000	5	4.875	994.000	3	2.982	1,014.000	2	2.028	-	-	0.000	-	-	0.000	-	-	0.000
1.1.2) C2P - LHD Upgrade <sup>(†)</sup>		975.000	1	0.975	-	-	0.000	1,014.000	1	1.014	1,034.000	1	1.034	-	-	0.000	1,034.000	1	1.034
Subtotal: Recurring Cost		-	-	5.850	-	-	2.982	-	-	3.042	-	-	1.034	-	-	0.000	-	-	1.034
Subtotal: Flyaway - Adv Tact Data Link Sys (ATDLS) - DR003 C2P Cost		-	-	5.850	-	-	2.982	-	-	3.042	-	-	1.034	-	-	0.000	-	-	1.034
Flyaway - Adv Tact Data Link Sys (ATDLS) - DR012 LINK 16 Cost																			
Recurring Cost																			
2.1.1) Link 16 - JTIDS CM/FR Ship		251.000	3	0.753	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
2.1.2) Link 16 - JTIDS CM/FR Shore		213.000	5	1.065	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
2.1.3) Link 16 - MOS CM/FR Ship <sup>(†)</sup>		-	-	0.000	74.000	2	0.148	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
2.1.4) Link 16 - MOS CM/FR Shore <sup>(†)</sup>		-	-	0.000	74.000	1	0.074	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
2.1.5) Link 16 - MOS MOD Shore <sup>(†)</sup>		-	-	0.000	805.000	2	1.610	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000

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Exhibit P-5, Cost Analysis: FY 2018 Navy													Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7							P-1 Line Item Number / Title: 2614 / Adv Tact Data Link Sys (ATDLS)						Item Number / Title [DODIC]: 1 / Adv Tact Data Link Sys (ATDLS)					
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
2.1.6) Link 16 - Upgrade Antenna <sup>(†)</sup>	185.000	5	0.925	-	-	0.000	185.000	1	0.185	213.000	1	0.213	-	-	0.000	213.000	1	0.213
2.1.7) Link 16 - Antennas (ESB-4) <sup>(†)</sup>	-	-	0.000	-	-	0.000	-	-	0.000	130.000	1	0.130	-	-	0.000	130.000	1	0.130
Subtotal: Recurring Cost	-	-	2.743	-	-	1.832	-	-	0.185	-	-	0.343	-	-	0.000	-	-	0.343
Subtotal: Flyaway - Adv Tact Data Link Sys (ATDLS) - DR012 LINK 16 Cost	-	-	2.743	-	-	1.832	-	-	0.185	-	-	0.343	-	-	0.000	-	-	0.343
Flyaway - Adv Tact Data Link Sys (ATDLS) - DR014 LINK MONITORING MANAGEMENT TOOL (LMMT) Cost																		
Recurring Cost																		
3.1.1) LMMT - Ship (L Class) <sup>(†)</sup>	-	-	0.000	-	-	0.000	130.000	10	1.300	133.000	9	1.197	-	-	0.000	133.000	9	1.197
3.1.2) LMMT - Shore <sup>(†)</sup>	-	-	0.000	151.000	15	2.265	93.000	20	1.860	95.000	4	0.380	-	-	0.000	95.000	4	0.380
Subtotal: Recurring Cost	-	-	0.000	-	-	2.265	-	-	3.160	-	-	1.577	-	-	0.000	-	-	1.577
Subtotal: Flyaway - Adv Tact Data Link Sys (ATDLS) - DR014 LINK MONITORING MANAGEMENT TOOL (LMMT) Cost	-	-	0.000	-	-	2.265	-	-	3.160	-	-	1.577	-	-	0.000	-	-	1.577
Flyaway - INSTALLATION - DR776 NON-FMP Cost																		
Recurring Cost																		
4.1.1) C2P - Technology Refresh Full System Shore Install	-	-	0.000	-	-	2.730	-	-	1.638	-	-	1.310	-	-	0.000	-	-	1.310
4.1.2) C2P - Technology Refresh Full System Shore Design	-	-	0.325	-	-	0.478	-	-	0.307	-	-	0.000	-	-	0.000	-	-	0.000
4.1.3) Link 16 - JTIDS CM/FR Shore Install	-	-	0.000	-	-	0.000	-	-	0.210	-	-	0.000	-	-	0.000	-	-	0.000
4.1.4) Link 16 - JTIDS CM/FR Shore Design	-	-	0.175	-	-	0.066	-	-	0.022	-	-	0.000	-	-	0.000	-	-	0.000
4.1.5) Link 16 - MOS CM/FR Shore Install	-	-	0.000	-	-	0.000	-	-	0.042	-	-	0.000	-	-	0.000	-	-	0.000
4.1.7) Link 16 - MOS MOD Shore Install	-	-	0.000	-	-	0.000	-	-	0.960	-	-	0.000	-	-	0.000	-	-	0.000
4.1.8) Link 16 - MOS MOD Shore Design	-	-	0.000	-	-	0.155	-	-	0.052	-	-	0.000	-	-	0.000	-	-	0.000

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Exhibit P-5, Cost Analysis: FY 2018 Navy												Date: May 2017						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7						P-1 Line Item Number / Title: 2614 / Adv Tact Data Link Sys (ATDLS)						Item Number / Title [DODIC]: 1 / Adv Tact Data Link Sys (ATDLS)						
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
4.1.9) LMMT - Shore Install	-	-	0.000	-	-	2.565	-	-	1.500	-	-	0.308	-	-	0.000	-	-	0.308
4.1.10) LMMT - Shore Design	-	-	0.420	-	-	0.225	-	-	0.120	-	-	0.060	-	-	0.000	-	-	0.060
Subtotal: Recurring Cost	-	-	0.920	-	-	6.219	-	-	4.851	-	-	1.678	-	-	0.000	-	-	1.678
Subtotal: Flyaway - INSTALLATION - DR776 NON-FMP Cost	-	-	0.920	-	-	6.219	-	-	4.851	-	-	1.678	-	-	0.000	-	-	1.678
Flyaway - INSTALLATION - DR777 FMP Cost																		
Recurring Cost																		
5.1.1) C2P - NGC2P FCK Install	-	-	1.005	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
5.1.2) C2P - NGC2P FCK Design	-	-	0.161	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
5.1.3) C2P - LHD Upgrade Install	-	-	0.000	-	-	0.330	-	-	0.000	-	-	0.655	-	-	0.000	-	-	0.655
5.1.4) C2P - LHD Upgrade Design	-	-	0.478	-	-	0.021	-	-	0.102	-	-	0.122	-	-	0.000	-	-	0.122
5.1.5) Link 16 - JTIDS CM/FR Ship Install	-	-	0.000	-	-	0.000	-	-	0.084	-	-	0.086	-	-	0.000	-	-	0.086
5.1.6) Link 16 - JTIDS CM/FR Ship Design	-	-	0.175	-	-	0.025	-	-	0.048	-	-	0.250	-	-	0.000	-	-	0.250
5.1.7) Link 16 - MOS CM/FR Ship Install	-	-	0.000	-	-	0.000	-	-	0.084	-	-	0.000	-	-	0.000	-	-	0.000
5.1.9) Link 16 - Upgrade Antenna Install	-	-	0.581	-	-	0.198	-	-	0.000	-	-	0.205	-	-	0.000	-	-	0.205
5.1.10) Link 16 - Upgrade Antenna Design	-	-	0.370	-	-	0.008	-	-	0.026	-	-	0.035	-	-	0.000	-	-	0.035
5.1.12) LMMT - Ship (L Class) Install	-	-	0.000	-	-	0.000	-	-	0.400	-	-	0.714	-	-	0.000	-	-	0.714
5.1.13) LMMT - Ship (L Class) Design	-	-	0.000	-	-	0.060	-	-	0.158	-	-	0.169	-	-	0.000	-	-	0.169
Subtotal: Recurring Cost	-	-	2.770	-	-	0.642	-	-	0.902	-	-	2.236	-	-	0.000	-	-	2.236
Subtotal: Flyaway - INSTALLATION - DR777 FMP Cost	-	-	2.770	-	-	0.642	-	-	0.902	-	-	2.236	-	-	0.000	-	-	2.236
Support - DR555 PRODUCTION SUPPORT Cost																		

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Exhibit P-5, Cost Analysis: FY 2018 Navy												Date: May 2017						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7						P-1 Line Item Number / Title: 2614 / Adv Tact Data Link Sys (ATDLS)						Item Number / Title [DODIC]: 1 / Adv Tact Data Link Sys (ATDLS)						
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
6.1) C2P - Technology Refresh Full System Shore Production Support	-	-	0.224	-	-	0.149	-	-	0.147	-	-	0.000	-	-	0.000	-	-	0.000
6.2) C2P - LHD Upgrade Production Support	-	-	0.061	-	-	0.035	-	-	0.051	-	-	0.052	-	-	0.000	-	-	0.052
6.3) Link 16 - JTIDS CM/FR Ship Production Support	-	-	0.100	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
6.4) Link 16 - JTIDS CM/FR Shore Production Support	-	-	0.100	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
6.5) Link 16 - MOS CM/FR Ship Production Support	-	-	0.000	-	-	0.007	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
6.6) Link 16 - MOS CM/FR Shore Production Support	-	-	0.000	-	-	0.004	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
6.7) Link 16 - MOS MOD Shore Production Support	-	-	0.000	-	-	0.074	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
6.8) Link 16 - Upgrade Antenna Production Support	-	-	0.151	-	-	0.000	-	-	0.007	-	-	0.007	-	-	0.000	-	-	0.007
6.9) LMMT Ship - (L Class) Production Support	-	-	0.000	-	-	0.000	-	-	0.154	-	-	0.413	-	-	0.000	-	-	0.413
6.10) LMMT - Shore Production Support	-	-	0.000	-	-	0.041	-	-	0.042	-	-	0.034	-	-	0.000	-	-	0.034
Subtotal: Support - DR555 PRODUCTION SUPPORT Cost	-	-	0.636	-	-	0.310	-	-	0.401	-	-	0.506	-	-	0.000	-	-	0.506
Support - DR666 ATDLS Training Cost																		
7.1) ATDLS Training <sup>(†)</sup>	-	-	5.470	-	-	2.598	-	-	1.599	-	-	3.571	-	-	0.000	-	-	3.571
Subtotal: Support - DR666 ATDLS Training Cost	-	-	5.470	-	-	2.598	-	-	1.599	-	-	3.571	-	-	0.000	-	-	3.571
Gross/Weapon System Cost	-	-	18.389	-	-	16.848	-	-	14.140	-	-	10.945	-	-	0.000	-	-	10.945
Remarks: BLI 2614 procures data link components (e.g. circuit cards, routers, antennas, shock mounts, etc.) to replace obsolete ones. There is integration and testing of these components lasting 6-9 months, which causes procurements to be installed in the following fiscal year.  <sup>(†)</sup> indicates the presence of a P-5a																		

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<b>Exhibit P-5, Cost Analysis:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 7	<b>P-1 Line Item Number / Title:</b> 2614 / Adv Tact Data Link Sys (ATDLS)	<b>Item Number / Title [DODIC]:</b> 1 / Adv Tact Data Link Sys (ATDLS)
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :		<b>MDAP/MAIS Code:</b>
<p><b>Footnotes:</b></p> <p><sup>(1)</sup> ATDLS Training (DR666): Currently, each program of record (Link 16, C2P and LMMT) has its own unique school house training. These training dollars are required to develop an integrated end-to-end operational training product for all tactical data link (TDL) functionality including those TDL functions performed by other Programs of Record (shipboard combat systems and shipboard networking components). Total ADTSL End-to-End training curriculum and simulator costs aligned with a multi-year development schedule. FY18 increase is required to complete training manuals and field simulators required for end-to-end training of the C2P, LMMT and MOS Mod systems. Completion of the training materials coincides with initial fielding of these new capabilities and is required in order to conduct end user training once systems are operational starting in FY18.</p>		



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Exhibit P-5a, Procurement History and Planning: FY 2018 Navy								Date: May 2017				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7			P-1 Line Item Number / Title: 2614 / Adv Tact Data Link Sys (ATDLS)					Item Number / Title [DODIC]: 1 / Adv Tact Data Link Sys (ATDLS)				
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$ K)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) C2P - Technology Refresh Full System Shore		2016	IDIQ MAC/FFP / San Diego	C / FFP	SPAWAR	Jul 2016	Jul 2017	3	994.000	Y		
1.1.1) C2P - Technology Refresh Full System Shore		2017	IDIQ MAC/FFP / San Diego	C / FFP	SPAWAR	Feb 2017	Feb 2018	2	1,014.000	Y		
1.1.2) C2P - LHD Upgrade		2017	IDIQ/MAC/FFP / San Diego	C / FFP	SPAWAR	Feb 2017	Jul 2017	1	1,014.000	Y		Mar 2016
1.1.2) C2P - LHD Upgrade		2018	TBD / TBD	C / TBD	SPAWAR	Jun 2018	Jun 2019	1	1,034.000	Y		Sep 2017
2.1.3) Link 16 - MOS CM/FR Ship		2016	Data Link Solutions / Cedar Rapids, IA	C / FFP	SPAWAR	Jun 2016	Dec 2016	2	74.000	Y		
2.1.4) Link 16 - MOS CM/FR Shore		2016	Data Link Solutions / Cedar Rapids, IA	C / FFP	SPAWAR	Jun 2016	Dec 2016	1	74.000	Y		
2.1.5) Link 16 - MOS MOD Shore		2016	Data Link Solutions / Cedar Rapids, IA	C / FFP	SPAWAR	Aug 2016	Aug 2017	2	805.000	Y		Oct 2012
2.1.6) Link 16 - Upgrade Antenna		2017	SPAWAR Pacific / San Diego	WR	SPAWAR	Jan 2017	Oct 2017	1	185.000	Y		Jun 2014
2.1.6) Link 16 - Upgrade Antenna		2018	SPAWAR Pacific / San Diego	WR	SPAWAR	Jan 2018	Oct 2018	1	213.000	Y		Jun 2014
2.1.7) Link 16 - Antennas (ESB-4)		2018	Naval Surface Warfare Center Dahlgren / Dahlgren, Va	WR	Dahlgren	May 2018	Feb 2019	1	130.000	Y		
3.1.1) LMMT - Ship (L Class)		2017	Venesco / Chantilly / Virginia	C / FFP	SPAWAR	Jun 2017	Sep 2017	10	130.000	Y		Apr 2017
3.1.1) LMMT - Ship (L Class)		2018	Venesco / Chantilly / Virginia	C / FFP	SPAWAR	Nov 2017	Feb 2018	9	133.000	Y		Oct 2017
3.1.2) LMMT - Shore		2016	Venesco / Chantilly / Virginia	C / FFP	SPAWAR	Mar 2016	Jun 2016	15	151.000	Y		Nov 2015
3.1.2) LMMT - Shore		2017	Venesco / Chantilly / Virginia	C / FFP	SPAWAR	Jun 2017	Sep 2017	20	93.000	Y		Mar 2017
3.1.2) LMMT - Shore		2018	Venesco / Chantilly / Virginia	C / FFP	SPAWAR	Nov 2017	Feb 2018	4	95.000	Y		Oct 2017

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 7			<b>P-1 Line Item Number / Title:</b> 2614 / Adv Tact Data Link Sys (ATDLS)		<b>Modification Number / Title:</b> 1 / Adv Tact Data Link Sys (ATDLS)	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	0.000	5.321	15.965	27.071	0.000	27.071
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	0.000	5.321	15.965	27.071	0.000	27.071
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
<b>Total Obligation Authority</b> <i>(\$ in Millions)</i>	<b>0.000</b>	<b>5.321</b>	<b>15.965</b>	<b>27.071</b>	<b>0.000</b>	<b>27.071</b>
<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>	-	-	-	-	-	-
<b>Description:</b> Command and Control Processor (C2P) Technology Refresh Full Systems Ship: C2P computer processing boards are obsolete and have antiquated software code with no industrial base support. Technology refresh is required for C2P software modernization. Additionally, C2P configuration is not shock qualified. Full Systems upgrades are required to achieve 901D shock certification.						

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Exhibit P-3a, Individual Modification: FY 2018 Navy					Date: May 2017	
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7		P-1 Line Item Number / Title: 2614 / Adv Tact Data Link Sys (ATDLS)			Modification Number / Title: 1 / Adv Tact Data Link Sys (ATDLS)	
ID Code (A=Service Ready, B=Not Service Ready) :				MDAP/MAIS Code:		
Models of Systems Affected: [No Model Specified]		Modification Type: TBD			Related RDT&E PEs: 0205604N	
Financial Plan	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Procurement						
Modification Item 1 of 1: Adv Tact Data Link Sys (ATDLS)						
B Kits						
Recurring						
1.1.1) Link 16 - MOS MOD Ship - NonOrganic <sup>(2)</sup>	- / -	- / -	3 / 2.469	- / -	- / -	- / -
1.1.2) LMMT Ship (CVN) - NonOrganic	- / -	- / -	6 / 4.818	4 / 3.224	- / -	4 / 3.224
1.1.3) C2P - Techonology Refresh Full System Ship - NonOrganic	- / -	5 / 4.970	4 / 4.056	15 / 15.510	- / -	15 / 15.510
Subtotal: Recurring	- / 0.000	- / 4.970	- / 11.343	- / 18.734	- / -	- / 18.734
Subtotal: Adv Tact Data Link Sys (ATDLS)	- / -	5 / 4.970	13 / 11.343	19 / 18.734	- / -	19 / 18.734
Subtotal: Procurement, All Modification Items	- / 0.000	- / 4.970	- / 11.343	- / 18.734	- / -	- / 18.734
Support (All Modification Items)						
2.1) Link 16 - MOS MOD Ship DSA	- / 0.000	- / 0.000	- / 0.237	- / 0.220	- / 0.000	- / 0.220
2.2) Link 16 - MOS MOD Ship Production Support	- / 0.000	- / 0.000	- / 0.254	- / 0.000	- / 0.000	- / 0.000
2.3) LMMT Ship (CVN) DSA	- / 0.000	- / 0.000	- / 0.141	- / 0.097	- / 0.000	- / 0.097
2.4) LMMT Ship (CVN) Production Support	- / 0.000	- / 0.000	- / 0.376	- / 0.450	- / 0.000	- / 0.450
2.5) C2P - Technology Refresh Full System Ship DSA	- / 0.000	- / 0.102	- / 0.648	- / 0.754	- / 0.000	- / 0.754
2.6) C2P - Techonology Refresh Full System Ship Production Support	- / 0.000	- / 0.249	- / 0.236	- / 0.521	- / 0.000	- / 0.521
Subtotal: Support	- / 0.000	- / 0.351	- / 1.892	- / 2.042	- / -	- / 2.042
Installation						
Modification Item 1 of 1: Adv Tact Data Link Sys (ATDLS)	- / 0.000	- / 0.000	- / 2.730	- / 6.295	- / 0.000	- / 6.295
Subtotal: Installation	- / 0.000	- / -	- / 2.730	- / 6.295	- / -	- / 6.295
Total						
Total Cost (Procurement + Support + Installation)	0.000	5.321	15.965	27.071	0.000	27.071

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy				<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 7		<b>P-1 Line Item Number / Title:</b> 2614 / Adv Tact Data Link Sys (ATDLS)		<b>Modification Number / Title:</b> 1 / Adv Tact Data Link Sys (ATDLS)		
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :			<b>MDAP/MAIS Code:</b>			
<b>Modification Item 1 of 1:</b> Adv Tact Data Link Sys (ATDLS)						
<b>Manufacturer Information</b>						
Manufacturer Name: Data Link Solutions			Manufacturer Location: Cedar Rapids, Indiana			
Administrative Leadtime (in Months): 8			Production Leadtime (in Months): 12			
<b>Dates</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>			
Contract Dates		Jun 2017				
Delivery Dates		Jun 2018				
Manufacturer Name: Venesco/Chantilly			Manufacturer Location: Virginia			
Administrative Leadtime (in Months): 8			Production Leadtime (in Months): 12			
<b>Dates</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>			
Contract Dates		Jun 2017		Jun 2018		
Delivery Dates		Sep 2017		Jun 2019		
Manufacturer Name: TBD			Manufacturer Location: TBD			
Administrative Leadtime (in Months): 8			Production Leadtime (in Months): 12			
<b>Dates</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>			
Contract Dates				Jun 2018		
Delivery Dates				Jun 2019		
Manufacturer Name: General Dynamics			Manufacturer Location: San Diego, CA			
Administrative Leadtime (in Months): 2			Production Leadtime (in Months): 12			
<b>Dates</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>			
Contract Dates		Jul 2016		Dec 2016		
Delivery Dates		Jul 2017		Dec 2017		
<b>Installation Information</b>						
<b>Method of Implementation:</b> [none specified]:: Installation Name: Link 16 - MOS MOD Ship						
<b>Installation Cost</b>	<b>Prior Years</b> Qty (Each) / Total Cost (\$ M)	<b>FY 2016</b> Qty (Each) / Total Cost (\$ M)	<b>FY 2017</b> Qty (Each) / Total Cost (\$ M)	<b>FY 2018 Base</b> Qty (Each) / Total Cost (\$ M)	<b>FY 2018 OCO</b> Qty (Each) / Total Cost (\$ M)	<b>FY 2018 Total</b> Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	- / -	- / -	- / -	- / -	- / -
FY 2016	- / -	- / -	- / -	- / -	- / -	- / -
FY 2017	- / -	- / -	- / -	3 / 1.035	0 / 0.000	3 / 1.035
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -
Total	- / -	- / -	- / -	3 / 1.035	0 / 0.000	3 / 1.035

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy											<b>Date:</b> May 2017			
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 7						<b>P-1 Line Item Number / Title:</b> 2614 / Adv Tact Data Link Sys (ATDLS)					<b>Modification Number / Title:</b> 1 / Adv Tact Data Link Sys (ATDLS)			
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :										<b>MDAP/MAIS Code:</b>				
<b>Modification Item 1 of 1:</b> Adv Tact Data Link Sys (ATDLS)														
<b>Installation Information</b>														
<b>Method of Implementation:</b> [none specified]:: Installation Name: Link 16 - MOS MOD Ship														
<b>Installation Schedule</b>														
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>				
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	
In	-	-	-	-	-	-	-	-	-	-	-	3	-	
Out	-	-	-	-	-	-	-	-	-	-	-	-	3	
<b>Method of Implementation:</b> [none specified]:: Installation Name: LMMT Ship (CVN)														
<b>Installation Cost</b>	<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>			
	Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total 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 2016	-		-		-		-		-		-			
FY 2017	-		-		-		6 / 2.640		0 / 0.000		6 / 2.640			
FY 2018	-		-		-		-		-		-			
Total	-		-		-		6 / 2.640		0 / 0.000		6 / 2.640			
<b>Installation Schedule</b>														
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>				
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	
In	-	-	-	-	-	-	-	-	-	-	-	6	-	
Out	-	-	-	-	-	-	-	-	-	-	-	-	6	
<b>Method of Implementation:</b> [none specified]:: Installation Name: C2P - Techonology Refresh Full System Ship														
<b>Installation Cost</b>	<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>			
	Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total 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 2016	-		-		5 / 2.730		-		-		-			
FY 2017	-		-		-		4 / 2.620		0 / 0.000		4 / 2.620			
FY 2018	-		-		-		-		-		-			
Total	-		-		5 / 2.730		4 / 2.620		0 / 0.000		4 / 2.620			

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy										<b>Date:</b> May 2017			
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 7					<b>P-1 Line Item Number / Title:</b> 2614 / Adv Tact Data Link Sys (ATDLS)					<b>Modification Number / Title:</b> 1 / Adv Tact Data Link Sys (ATDLS)			
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :								<b>MDAP/MAIS Code:</b>					
<b>Modification Item 1 of 1:</b> Adv Tact Data Link Sys (ATDLS)													
<b>Installation Information</b>													
<b>Method of Implementation:</b> [none specified]:: Installation Name: C2P - Techonology Refresh Full System Ship													
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	-	-	-	-	-	-	-	-	1	4	1	-	-
Out	-	-	-	-	-	-	-	-	1	-	5	-	-

**Footnotes:**

<sup>(2)</sup> Existing design of the MOS Mod High-Powered Amplifier (HPA) includes a component currently subject to an intellectual property suit. The program has identified an alternate HPA to be incorporated in the design however, the alternate component has caused an increase in unit cost in FY19.

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy								Date: May 2017				
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment						P-1 Line Item Number / Title: 2618 / Navy Command and Control System (NCCS)						
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A					Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	35.192	4.054	4.556	4.512	0.000	4.512	3.870	3.986	4.073	4.155	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	35.192	4.054	4.556	4.512	0.000	4.512	3.870	3.986	4.073	4.155	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	35.192	4.054	4.556	4.512	0.000	4.512	3.870	3.986	4.073	4.155	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	0.182	0.029	0.150	-	0.150	0.147	0.093	0.097	-	-	0.698
Flyaway Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-
Description:												
Funding includes Global Command and Control System-Maritime (GCCS-M), the Navy fielded portions of GCCS-Joint, and Joint Automated Deep Operations Coordination System (JADOCS). GCCS-M is further delineated by Afloat and Ashore.												
GCCS-M is the Maritime implementation of the United States (U.S.) Global Command and Control System (GCCS). It provides Maritime Commanders at all echelons of command with a single, integrated, scalable Command, Control, Communication, Computers and Intelligence (C4I) system that fuses, correlates, filters, maintains and displays location, and attribute information on friendly, hostile and neutral land, sea and air forces. It takes this information and integrates it with available intelligence and environmental information to support commander decision making. It operates in near real-time, constantly updating unit positions and other situational awareness data. GCCS-M also records data in appropriate databases and maintains a history of changes to those records. System operators use the data to construct relevant tactical pictures using maps, charts, topography overlays, oceanographic overlays, meteorological overlays, imagery and all-source intelligence information coordinated into a Common Operational Picture (COP) that can be shared locally and with other sites. GCCS-M is not a weapon system, but receives data from, and interfaces with Navy integrated weapons systems. Navy Commanders review and evaluate the general tactical situation, plan actions and operations, direct forces, synchronize tactical movements, and integrate force maneuver with firepower. GCCS-M operates on General Service (GENSER) Secret networks in a variety of environments and supports joint, coalition and allied forces. GCCS-M is implemented Afloat and at Ashore fixed command centers. Increment 1 includes all GCCS-M software versions 4.0 and earlier. Increment 2 is GCCS-M 4.1.												
[P5 / FA010 GCCS-M Afloat]: GCCS-M Afloat provides Command and Control capability to Force Level Ships (e.g., CVN Carriers, LCC Command Ships, LHA and LHD Amphibious Ships), Unit Level Ships (e.g., CG Cruisers, DDG Destroyers, MCM Mine Countermeasure Ships, LPD and LSD Amphibious Ships, FF/LCS Littoral Combat Ships, PC Coastal Patrol Ships), Submarines (e.g., SSN/SSBN/SSGN Submarines), the Software Support Activity (SSA), and the In-Service Engineering Activity (ISEA).												
[P5 / FA020 GCCS-M Ashore]: GCCS-M Ashore provides evolutionary systems and ancillary equipment upgrades to support Fleet Commanders, Force Anti-Submarine Warfare Commanders, Submarine Operating Authorities, Aegis Ashore Missile Defense Systems, and Technical Training Equipment Sites worldwide. GCCS-M Ashore provides systems that receive, process, display, maintain and/or assess unit characteristics, employment scheduling, material condition, combat readiness, war fighting capabilities, and positional information of own, allied, and hostile forces. GCCS-M Ashore provides the tools necessary for fleet and Shore based Commanders to execute plans, transmit tasking, and provide tactical information to subordinate forces.												
[P5 / FA040 GCCS (Joint) Support Equipment]: Global Command and Control System- Joint (GCCS-J) is a Department of Defense (DoD) Program of Record managed by the Defense Information Systems Agency (DISA) GCCS-J Program Management Office (PMO). The GCCS-J system requirements, software release schedule, and system fielding plan are determined by the DISA GCCS-J PMO in coordination												

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment		<b>P-1 Line Item Number / Title:</b> 2618 / Navy Command and Control System (NCCS)
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A	<b>Program Elements for Code B Items:</b> N/A	<b>Other Related Program Elements:</b> N/A
<b>Line Item MDAP/MAIS Code:</b> N/A with the Joint Staff. GCCS-J supports the Joint Staff and Combatant Commanders by providing Command, Control, Communication, Computers and Intelligence (C4I) data processing capabilities, including status of forces and support requirements for use in national security decision making, force preparation and operational planning and execution. Global Command and Control System- Joint (GCCS-J) provides support for Fleet Communications Center interfacing with deployed units and other fixed Fleet and Joint Command Centers.  [P5 / FA060 Joint Automated Deep Operations Coordination System (JADOCS)]: Provide funding for the fielding of JADOCS software on new installation hardware. JADOCS is required to provide the capability to coordinate joint targeting and mission assignment for time sensitive targets and other rapid-response missions across Functional Component Commanders, Joint and Combined Force Commanders, Geographic Combatant Commanders, and Special Operations Commanders.		
<b>Justification:</b> The FY 2018 budget procures and installs Global Command and Control System - Joint (GCCS-J) Ashore workstations, servers, Local Area Network (LAN) hardware and software, communications equipment; and Joint Automated Deep Operations Coordination System (JADOCS)and Global Command and Control System - Maritime (GCCS-M) software, to include Windows XP eradication efforts on GCCS-M afloat platforms.		



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**Exhibit P-40, Budget Line Item Justification:** FY 2018 Navy **Date:** May 2017

<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment	<b>P-1 Line Item Number / Title:</b> 2622 / Minesweeping System Replacement
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<b>ID Code</b> (A=Service Ready, B=Not Service Ready): B	<b>Program Elements for Code B Items:</b> 0603502N	<b>Other Related Program Elements:</b> N/A
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**Line Item MDAP/MAIS Code:** N/A

Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	514.313	21.014	56.675	31.531	0.000	31.531	45.174	43.084	42.517	43.092	Continuing	Continuing
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	514.313	21.014	56.675	31.531	0.000	31.531	45.174	43.084	42.517	43.092	Continuing	Continuing
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority (<i>\$ in Millions</i>)</b>	<b>514.313</b>	<b>21.014</b>	<b>56.675</b>	<b>31.531</b>	<b>0.000</b>	<b>31.531</b>	<b>45.174</b>	<b>43.084</b>	<b>42.517</b>	<b>43.092</b>	<b>Continuing</b>	<b>Continuing</b>
<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> )	-	0.498	0.830	1.202	-	1.202	-	-	-	-	-	2.530
Flyaway Unit Cost ( <i>\$ in Thousands</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ( <i>\$ in Thousands</i> )	-	-	-	-	-	-	-	-	-	-	-	-

## Description:

Provide systems, subsystems, and engineering change kits for minehunting, navigation, and tactical display operations by the surface Mine Countermeasure (MCM) force. Engineering change kits improve reliability and maintainability and correct deficiencies to allow equipment to perform in accordance with operational requirements.

[P5 / HME SHIP SYSTEMS]: A tech refresh is necessary to procure material and install the Integrated Ship Control System (ISCS) upgrades on MCM Class Ships forward deployed. Alteration SCD 78356 will upgrade five computer workstations, replace network switches, and replace the Windows NT operating system with Windows 7. Legacy sustainment will not provide the necessary support because the workstations and network hardware are beyond their intended service lives. In addition, the operating system is not supported by the provider. Parts obsolescence results in procurement delays of urgent warfighting upgrades for deployed ships. Specifically, there is an increased risk of loss of core propulsion, electric and auxiliary plant functionality. ISCS legacy sustainment inhibits MCM capability to get underway to conduct missions in a region of the world that is of vital strategic importance to the United States. Therefore, a tech refresh is necessary to support the MCM mine hunting and minesweeping capability whereas legacy sustainment is not feasible and would result in delays and obsolescence. This alteration has been identified as a priority because this capability is only found on the MCM Class Ships. The MCM Readiness Task Force Report identified implementation of this alteration as the #3 priority and the MCM Operational Advisory Group Brief identified implementation of this alteration as the #7 priority MCM alteration.

[P5 / LV082 - AFT DECK EQUIPMENT UPGRADE]: This program will install an inverter electric motor on the magnetic cable reel, acoustic cable reel, minesweeping winch and self contained hydraulic power unit on the stern crane.

[P5 / LV073 - MCM/MHC INTEGRATED SHIP CONTROL SYSTEM]: This program funds software integration and hardware upgrades to the MCM-1 class ships' Integrated Ship Control System. Ship change upgrades computer workstations, replaces network switches, and replaces the operating system.

[P5 - 2 / LV075 - MCM COMBAT SYSTEMS]: The MCM Combat System Upgrades program consists of a series of incremental upgrades to the current combat system via Engineering Change Kits. The upgrades improve reliability and maintainability and correct deficiencies to allow the equipment to perform in accordance with operational requirements. The current planned upgrades include:

- Supportability and Obsolescence Upgrade Engineering Changes - upgrade and modernization of the MCM-1 Class Ship combat systems to reduce current and emergent obsolescence and supportability issues with the SQQ-32, SSN-2, Battle Space Profiler, AAG, SLQ-48 Power Distribution Unit, and the AN/SLQ-48 Mine Neutralization System.
- Mine Neutralization System is installation of SEAFOX neutralizers on 4 MCM Avenger Class Ships by replacing the existing AN/SLQ-48 Mine Neutralization System.

# UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment		P-1 Line Item Number / Title: 2622 / Minesweeping System Replacement
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 0603502N	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>- Klein Sonar - Funds obsolescence upgrades to the Klein sonar. These efforts maintain the ability to rotate systems off of MCM-1's for required overhaul and system upgrades to increase system Operational Availability.</p> <p>- Mine Environmental Decision Aids Library (MEDAL) Expeditionary Systems - Installation of MEDAL onboard MCM Ships and to ashore MEDAL users. MEDAL EA mobile servers (expeditionary) installation on afloat units including MCM Class and LCS.- SSQ-94 System Trainer - Consists of an improved training systems to MCM Ships' integrating the SQQ-32 High Frequency Wide Band (HFWB) and SSN-2 PINS Upgrades and resolve obsolesence issues.</p> <p>[P5 - 2 / LV078 - AN/SQQ-30(V)4 HFWB]: AN/SQQ-32(V)4 HFWB is a technology upgrade to the SQQ-32 Towed Body which will incorporate HFWB technology into the detection sonar to address performance deficiencies against new mine threats in the littorals. This upgrade will be installed on MCM-1 Class ships with the SQQ-32(V)3 and will have new transducer modules, fiber optic cable and modified topside processing and display software.</p> <p>[P5 - 3 / LV079 - SMCM UUV W/LFBB (Knifefish)]: The Knifefish Surface Mine Countermeasure Unmanned Undersea Vehicle (SMCM UUV) (LV079) program procures Unmanned Underwater Vehicles (UUVs) to support clandestine mine detection capability against volume and bottom mines including buried mine detection. Equipment includes vehicles and associated systems support equipment.</p> <p>[P5 - 3 / SMCM UUV (Knifefish)]: The Knifefish Surface Mine Countermeasure Unmanned Undersea Vehicle (SMCM UUV) program procures Unmanned Underwater Vehicles to support clandestine mine detection capability against volume and bottom mines including buried mine detection. Equipment includes vehicles and associated systems support equipment.</p> <p>[P5 - 3 / LV080 - UNMANNED INFLUENCE SWEEP SYSTEM (UISS) Trainers]: Unmanned Influence Sweep System (UISS) (LV080): This line item procures the training units to support the UISS operational units procured for the Littoral Combat Ship Mission Modules. UISS consists of a Unmanned Surface Vehicle, power supply, control unit, winch, acoustic generator, magnetic tow cable, and a deploy and retrieve subsystem. UISS will provide long endurance and wide area magnetic and acoustic mine sweep capability onboard the Littoral Combat Ship class of ships.</p> <p>[P5 - 4 / LV085 - MAGNETIC SILENCING FACILITY UPGRADES]: This program is for hardware, auxiliary systems and support in association with the upgrade of the current aging CONUS and Outside Continental United States (OCONUS) Magnetic Silencing Facilities so the calibration of the new Open-Loop Magnetic Systems or Advanced Degaussing System ships and submarines can be accomplished for worldwide operation. The upgrade will also ensure that the ships/submarines will be able to meet OPNAV 8950.2G signature requirements and will be less susceptible to Electro-Magnetic threat systems.</p>		

# UNCLASSIFIED

**Exhibit P-40, Budget Line Item Justification:** FY 2018 Navy **Date:** May 2017

<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment	<b>P-1 Line Item Number / Title:</b> 2622 / Minesweeping System Replacement
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<b>ID Code</b> (A=Service Ready, B=Not Service Ready): B	<b>Program Elements for Code B Items:</b> 0603502N	<b>Other Related Program Elements:</b> N/A
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**Line Item MDAP/MAIS Code:** N/A

Exhibits Schedule					Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / HME SHIP SYSTEMS				- / 59.304	- / 3.623	- / 6.162	- / 2.375	- / 0.000	- / 2.375
P-5	2 / MINE COUNTERMEASURES				- / 192.412	- / 8.524	- / 8.075	- / 8.328	- / 0.000	- / 8.328
P-5	3 / UNMANNED SYSTEMS [UNMAN]	P-5a			- / 0.000	- / 0.000	- / 24.477	- / 3.010	- / 0.000	- / 3.010
P-5	4 / OTHER SYSTEMS [OTHER]				- / 262.597	- / 8.867	- / 17.961	- / 17.818	- / 0.000	- / 17.818
P-40	<b>Total Gross/Weapon System Cost</b>				<b>- / 514.313</b>	<b>- / 21.014</b>	<b>- / 56.675</b>	<b>- / 31.531</b>	<b>- / 0.000</b>	<b>- / 31.531</b>

\*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 2018 funds the baseline program in order to outfit the current MCM Fleet with Navy's latest technology to combat Mine Warfare Countermeasures around the world. This includes the continued upgrades of SLQ-48 Mine Neutralization systems and the Unmanned Influence Sweep System (UISS) trainers. Additionally, to meet the increased operational demand, funding will go towards the installation of the MEDAL EA Mine Warfare Planning upgrades.

## UNCLASSIFIED

Exhibit P-5, Cost Analysis: FY 2018 Navy												Date: May 2017						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7						P-1 Line Item Number / Title: 2622 / Minesweeping System Replacement						Item Number / Title [DODIC]: 1 / HME SHIP SYSTEMS						
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Resource Summary				Prior Years		FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total				
Procurement Quantity <i>(Units in Each)</i>				-		-		-		-		-		-				
Gross/Weapon System Cost <i>(\$ in Millions)</i>				59.304		3.623		6.162		2.375		0.000		2.375				
Less PY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Net Procurement (P-1) <i>(\$ in Millions)</i>				59.304		3.623		6.162		2.375		0.000		2.375				
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Total Obligation Authority <i>(\$ in Millions)</i>				59.304		3.623		6.162		2.375		0.000		2.375				
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																		
Initial Spares <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>				-		-		-		-		-		-				
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Hardware - LV081 - BOW THRUSTER IMPROVEMENT Cost																		
Recurring Cost																		
1.1.1) BOW THRUSTER IMPROVEMENT	-	-	3.958	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	3.958	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Hardware - LV081 - BOW THRUSTER IMPROVEMENT Cost	-	-	3.958	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Hardware - LV082 - AFT DECK EQUIPMENT UPGRADE Cost																		
Recurring Cost																		
2.1.1) AFT DECK EQUIPMENT UPGRADE <sup>(1)</sup>	-	-	37.553	-	-	1.750	-	-	3.582	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	37.553	-	-	1.750	-	-	3.582	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Hardware - LV082 - AFT DECK EQUIPMENT UPGRADE Cost	-	-	37.553	-	-	1.750	-	-	3.582	-	-	0.000	-	-	0.000	-	-	0.000
Hardware - LV084 - 400HZ Cost																		
Non Recurring Cost																		
3.1.1) 400HZ	-	-	3.994	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Non Recurring Cost	-	-	3.994	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Hardware - LV084 - 400HZ Cost	-	-	3.994	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000

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Exhibit P-5, Cost Analysis: FY 2018 Navy													Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7						P-1 Line Item Number / Title: 2622 / Minesweeping System Replacement							Item Number / Title [DODIC]: 1 / HME SHIP SYSTEMS					
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Software - LV073 - MCM/MHC INTEGRATED SHIP CONTROL SYSTEM Cost																		
Recurring Cost																		
4.1.1) SOFTWARE INTEGRATION	-	-	13.799	-	-	1.873	-	-	2.580	-	-	2.375	-	-	0.000	-	-	2.375
Subtotal: Recurring Cost	-	-	13.799	-	-	1.873	-	-	2.580	-	-	2.375	-	-	0.000	-	-	2.375
Subtotal: Software - LV073 - MCM/MHC INTEGRATED SHIP CONTROL SYSTEM Cost	-	-	13.799	-	-	1.873	-	-	2.580	-	-	2.375	-	-	0.000	-	-	2.375
Gross/Weapon System Cost	-	-	59.304	-	-	3.623	-	-	6.162	-	-	2.375	-	-	0.000	-	-	2.375
Footnotes:																		
(1) Aft Deck equipment upgrade is a high priority of the MCM Task Force and MCM Operational Advisory Group.																		

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Exhibit P-5, Cost Analysis: FY 2018 Navy												Date: May 2017							
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7						P-1 Line Item Number / Title: 2622 / Minesweeping System Replacement						Item Number / Title [DODIC]: 2 / MINE COUNTERMEASURES							
ID Code (A=Service Ready, B=Not Service Ready) :									MDAP/MAIS Code:										
Resource Summary				Prior Years		FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total					
Procurement Quantity <i>(Units in Each)</i>				-		-		-		-		-		-					
Gross/Weapon System Cost <i>(\$ in Millions)</i>				192.412		8.524		8.075		8.328		0.000		8.328					
Less PY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-					
Net Procurement (P-1) <i>(\$ in Millions)</i>				192.412		8.524		8.075		8.328		0.000		8.328					
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-					
Total Obligation Authority <i>(\$ in Millions)</i>				192.412		8.524		8.075		8.328		0.000		8.328					
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																			
Initial Spares <i>(\$ in Millions)</i>				-		-		-		-		-		-					
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>				-		-		-		-		-		-					
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																			
Cost Elements		Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
		Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Hardware - LV075 - MCM COMBAT SYSTEMS Cost																			
Recurring Cost																			
1.1.1) SSQ-94 Trainer		-	-	0.000	-	-	0.993	-	-	1.928	-	-	0.993	-	-	0.000	-	-	0.993
1.1.2) MCM Combat Systems (MEDAL)		-	-	157.299	-	-	2.230	-	-	2.358	-	-	3.585	-	-	0.000	-	-	3.585
1.1.3) Obsolescence Upgrades (SLQ-48)		-	-	0.000	-	-	2.491	-	-	2.758	-	-	3.750	-	-	0.000	-	-	3.750
Subtotal: Recurring Cost		-	-	157.299	-	-	5.714	-	-	7.044	-	-	8.328	-	-	0.000	-	-	8.328
Subtotal: Hardware - LV075 - MCM COMBAT SYSTEMS Cost		-	-	157.299	-	-	5.714	-	-	7.044	-	-	8.328	-	-	0.000	-	-	8.328
Hardware - LV078 - AN/SQQ-30(V)4 HFWB Cost																			
Recurring Cost																			
2.1.1) AN/SQQ-32(V)4 HFWB Integration		3,213.000	10	32.130	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
2.1.2) H/W and S/W ECP		-	-	0.284	-	-	1.858	-	-	1.031	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost		-	-	32.414	-	-	1.858	-	-	1.031	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Hardware - LV078 - AN/SQQ-30(V)4 HFWB Cost		-	-	32.414	-	-	1.858	-	-	1.031	-	-	0.000	-	-	0.000	-	-	0.000
Hardware - PNNCM - Mine Countermeasures Map System Cost																			
Recurring Cost																			

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Exhibit P-5, Cost Analysis: FY 2018 Navy												Date: May 2017						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7						P-1 Line Item Number / Title: 2622 / Minesweeping System Replacement						Item Number / Title [DODIC]: 2 / MINE COUNTERMEASURES						
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
3.1.1) Mine Countermeasures Map System	-	-	2.699	-	-	0.952	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	2.699	-	-	0.952	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Hardware - PNNCM - Mine Countermeasures Map System Cost	-	-	2.699	-	-	0.952	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Gross/Weapon System Cost	-	-	192.412	-	-	8.524	-	-	8.075	-	-	8.328	-	-	0.000	-	-	8.328

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Exhibit P-5, Cost Analysis: FY 2018 Navy													Date: May 2017								
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7							P-1 Line Item Number / Title: 2622 / Minesweeping System Replacement						Item Number / Title [DODIC]: 3 / UNMANNED SYSTEMS [UNMAN]								
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:											
Resource Summary				Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
Procurement Quantity <i>(Units in Each)</i>				-			-			-			-			-			-		
Gross/Weapon System Cost <i>(\$ in Millions)</i>				0.000			0.000			24.477			3.010			0.000			3.010		
Less PY Advance Procurement <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Net Procurement (P-1) <i>(\$ in Millions)</i>				0.000			0.000			24.477			3.010			0.000			3.010		
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Total Obligation Authority <i>(\$ in Millions)</i>				0.000			0.000			24.477			3.010			0.000			3.010		
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																					
Initial Spares <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>				-			-			-			-			-			-		
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																					
Cost Elements		Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total				
		Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)		
Hardware - LV079 - SMCM UUV W/LFBB (Knifefish) Cost																					
Recurring Cost																					
1.1.1) SMCM UUV (Knifefish) <sup>(†)</sup>		-	-	0.000	-	-	0.000	8,680.000	2	17.360	-	-	0.000	-	-	0.000	-	-	0.000		
1.1.2) Ancillary Equipment		-	-	0.000	-	-	0.000	-	-	2.023	-	-	0.000	-	-	0.000	-	-	0.000		
Subtotal: Recurring Cost		-	-	0.000	-	-	0.000	-	-	19.383	-	-	0.000	-	-	0.000	-	-	0.000		
Non Recurring Cost																					
1.2.1) Production Engineering - Knifefish		-	-	0.000	-	-	0.000	-	-	1.104	-	-	0.000	-	-	0.000	-	-	0.000		
Subtotal: Non Recurring Cost		-	-	0.000	-	-	0.000	-	-	1.104	-	-	0.000	-	-	0.000	-	-	0.000		
Subtotal: Hardware - LV079 - SMCM UUV W/LFBB (Knifefish) Cost		-	-	0.000	-	-	0.000	-	-	20.487	-	-	0.000	-	-	0.000	-	-	0.000		
Hardware - LV080 - UNMANNED INFLUENCE SWEEP SYSTEM (UISS) Trainers Cost																					
Recurring Cost																					
2.1.1) UISS Trainers <sup>(†)</sup>		-	-	0.000	-	-	0.000	1,995.000	2	3.990	1,505.000	2	3.010	-	-	0.000	1,505.000	2	3.010		
Subtotal: Recurring Cost		-	-	0.000	-	-	0.000	-	-	3.990	-	-	3.010	-	-	0.000	-	-	3.010		
Subtotal: Hardware - LV080 - UNMANNED INFLUENCE SWEEP SYSTEM (UISS) Trainers Cost		-	-	0.000	-	-	0.000	-	-	3.990	-	-	3.010	-	-	0.000	-	-	3.010		
Gross/Weapon System Cost		-	-	0.000	-	-	0.000	-	-	24.477	-	-	3.010	-	-	0.000	-	-	3.010		



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<b>Exhibit P-5, Cost Analysis:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 7	<b>P-1 Line Item Number / Title:</b> 2622 / Minesweeping System Replacement	<b>Item Number / Title [DODIC]:</b> 3 / UNMANNED SYSTEMS [UNMAN]
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :		<b>MDAP/MAIS Code:</b>

(†) indicates the presence of a P-5a

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<b>Exhibit P-5a, Procurement History and Planning: FY 2018 Navy</b>									<b>Date:</b> May 2017			
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 7				<b>P-1 Line Item Number / Title:</b> 2622 / Minesweeping System Replacement					<b>Item Number / Title [DODIC]:</b> 3 / UNMANNED SYSTEMS [UNMAN]			
<b>Cost Elements</b>	<b>O C O</b>	<b>FY</b>	<b>Contractor and Location</b>	<b>Method/Type or Funding Vehicle</b>	<b>Location of PCO</b>	<b>Award Date</b>	<b>Date of First Delivery</b>	<b>Qty (Each)</b>	<b>Unit Cost (\$ K)</b>	<b>Specs Avail Now?</b>	<b>Date Revision Available</b>	<b>RFP Issue Date</b>
1.1.1) SMCM UUV (Knifefish)		2017	General Dynamics MS / Mcleansville, NC	C / FFP	NAVSEA	Mar 2017	Sep 2018	2	8,680.000	N	Dec 2017	
2.1.1) UISS Trainers		2017	Unknown / Unknown	C / FP	NAVSEA	May 2017	Nov 2018	2	1,995.000	Y		
2.1.1) UISS Trainers		2018	Unknown / Unknown	C / TBD	** NO PCO **	Oct 2017	Oct 2017	2	1,505.000	N		

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Exhibit P-5, Cost Analysis: FY 2018 Navy												Date: May 2017						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7						P-1 Line Item Number / Title: 2622 / Minesweeping System Replacement						Item Number / Title [DODIC]: 4 / OTHER SYSTEMS [OTHER]						
ID Code (A=Service Ready, B=Not Service Ready) :									MDAP/MAIS Code:									
Resource Summary				Prior Years		FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total				
Procurement Quantity <i>(Units in Each)</i>				-		-		-		-		-		-				
Gross/Weapon System Cost <i>(\$ in Millions)</i>				262.597		8.867		17.961		17.818		0.000		17.818				
Less PY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Net Procurement (P-1) <i>(\$ in Millions)</i>				262.597		8.867		17.961		17.818		0.000		17.818				
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Total Obligation Authority <i>(\$ in Millions)</i>				262.597		8.867		17.961		17.818		0.000		17.818				
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																		
Initial Spares <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>				-		-		-		-		-		-				
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Hardware - LV083 - AIMS Cost																		
Non Recurring Cost																		
1.1.1) AIMS	-	-	9.574	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Non Recurring Cost	-	-	9.574	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Hardware - LV083 - AIMS Cost	-	-	9.574	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Hardware - LV085 - MAGNETIC SILENCING FACILITY UPGRADES Cost																		
Recurring Cost																		
2.1.1) MSF PEARL HARBOR TREATMENT UPGRADE	11,244.000	1	11.244	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
2.1.2) MSF NORFOLK TREATMENT UPGRADE	-	-	14.457	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
2.1.3) MSF MEASUREMENT SYSTEM UPGRADE	72,876.000	1	72.876	-	-	8.867	-	-	17.961	-	-	17.818	-	-	0.000	-	-	17.818
2.1.4) MAGNETIC SILENCING FACILITY UPGRADES	-	-	5.652	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	104.229	-	-	8.867	-	-	17.961	-	-	17.818	-	-	0.000	-	-	17.818
Subtotal: Hardware - LV085 - MAGNETIC SILENCING FACILITY UPGRADES Cost	-	-	104.229	-	-	8.867	-	-	17.961	-	-	17.818	-	-	0.000	-	-	17.818

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Exhibit P-5, Cost Analysis: FY 2018 Navy													Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 7							P-1 Line Item Number / Title: 2622 / Minesweeping System Replacement						Item Number / Title [DODIC]: 4 / OTHER SYSTEMS [OTHER]					
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 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Hardware - LVCA1 - SEA BOTTOM MAPPING Cost																		
Non Recurring Cost																		
3.1.1) SEA BOTTOM MAPPING	-	-	1.711	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Non Recurring Cost	-	-	1.711	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Hardware - LVCA1 - SEA BOTTOM MAPPING Cost	-	-	1.711	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Support - Prior Years Cumulative Funding Cost																		
4.1) Production Engineering	-	-	39.030	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
4.3) Prior Years Cumulative Funding	-	-	108.053	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Support - Prior Years Cumulative Funding Cost	-	-	147.083	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Gross/Weapon System Cost	-	-	262.597	-	-	8.867	-	-	17.961	-	-	17.818	-	-	0.000	-	-	17.818

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy										<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment							<b>P-1 Line Item Number / Title:</b> 2624 / Shallow Water Mine CM Ship					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): B				<b>Program Elements for Code B Items:</b> N/A				<b>Other Related Program Elements:</b> N/A				
<b>Line Item MDAP/MAIS Code:</b> N/A												
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>To Complete</b>	<b>Total</b>
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	48.473	0.000	8.875	8.796	0.000	8.796	8.782	8.901	5.741	5.855	-	95.423
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	48.473	0.000	8.875	8.796	0.000	8.796	8.782	8.901	5.741	5.855	-	95.423
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>48.473</b>	<b>0.000</b>	<b>8.875</b>	<b>8.796</b>	<b>0.000</b>	<b>8.796</b>	<b>8.782</b>	<b>8.901</b>	<b>5.741</b>	<b>5.855</b>	<b>-</b>	<b>95.423</b>
<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> )	-	1.925	0.523	0.073	-	0.073	-	-	-	-	-	2.521
Flyaway Unit Cost ( <i>\$ in Dollars</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ( <i>\$ in Dollars</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<p><b>Description:</b></p> <p>This program provides a combination of US Navy projects planned to counter the threat to amphibious landing forces from known and projected foreign land/sea mines, obstacles in the beach zone and surf zone approaches to amphibious assault areas. It is a system of systems (Countermines/Counter Obstacle, Intelligence/Surveillance/Reconnaissance/Targeting (ISR/T), Navigation/Virtual Marking/Integration, C4I/Data Fusion) to provide a full assault breaching capability. This program is an essential element to the Marine Corps Ship To Objective Maneuver Concept of Operations.</p> <p>This procurement line supports the COBRA program of record, delivering COBRA systems to Navy helicopter wings to provide initial proficiency training to Navy aircrews. COBRA systems are also procured under BLI 1601 LCS Mission Modules. The 1601 COBRA systems provide the deployable combat capability to LCS mission packages.</p> <p>[P5 / SW004: COASTAL BATTLEFIELD RECONNAISSANCE AND ANALYSIS (COBRA)]: The mission of the AN/DVS-1 COBRA is to conduct unmanned aerial tactical reconnaissance in the littoral battlespace for detection and localization of minefields and obstacles in the surf zone and beach zone prior to an amphibious assault. The COBRA Airborne Payload will be carried on the MQ-8B Fire Scout. This allows operators and other personnel to remain at a safe distance from the mine and obstacle belts and enemy direct and indirect fire. COBRA will be embarked in the Littoral Combat Ship (LCS) as part of the Mine Countermeasures Mission Package (MP).</p> <p>COBRA provides the (ISR/T) part of the Assault Breaching System of systems. One system consists of two Airborne Mine Counter Measures (AMCM) Payloads and one Post Mission Analysis Station. Under the umbrella of evolutionary acquisition, three increments of development are planned. Block I introduces a daytime, surface laid minefield and obstacle detection capability for the Beach Zone. Block II adds a surfzone and night (darkness) detection capability. Block III adds a buried mine detection capability and on-board Near-Real-Time processing of Multi Spectral Imagery data. COBRA will be a modular payload architecture of, and integrated with, the MQ-8B Fire Scout VTUAV and will serve as a "detect" sensor within the LCS Mine Warfare mission package as part of amphibious assault breaching.</p>												
<p><b>Justification:</b></p> <p>FY 2018 funding supports the baseline program which will procure one COBRA system to be integrated on the MQ-8B FIRESOULT. These systems provide the fleet with the required training assets to certify the pilots and crew to operate and maintain these systems before being deployed on the LCS.</p>												

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy										<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment							<b>P-1 Line Item Number / Title:</b> 2657 / NAVSTAR GPS Receivers (Space)					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A				<b>Program Elements for Code B Items:</b> N/A				<b>Other Related Program Elements:</b> N/A				
<b>Line Item MDAP/MAIS Code:</b> N/A												
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>To Complete</b>	<b>Total</b>
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	194.638	11.129	12.752	15.923	0.000	15.923	17.686	17.918	18.288	18.651	Continuing	Continuing
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	194.638	11.129	12.752	15.923	0.000	15.923	17.686	17.918	18.288	18.651	Continuing	Continuing
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>194.638</b>	<b>11.129</b>	<b>12.752</b>	<b>15.923</b>	<b>0.000</b>	<b>15.923</b>	<b>17.686</b>	<b>17.918</b>	<b>18.288</b>	<b>18.651</b>	<b>Continuing</b>	<b>Continuing</b>
<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> )	-	0.263	0.062	0.061	-	0.061	0.048	0.384	0.414	0.423	Continuing	Continuing
Flyaway Unit Cost ( <i>\$ in Thousands</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ( <i>\$ in Thousands</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<p><b>Description:</b>  NAVSTAR Global Positioning System (NAVSTAR GPS) provides assured and protected navigation solutions to Warfighters through supported, affordable, and integrated systems, and is the primary source of positioning, navigation and timing information for the DoD.</p> <p>[P3A / (1R0013) Navigation Warfare (NAVWAR)]: NAVWAR ensures that U. S. military forces maintain access to the GPS in an electronically challenging battle space, delivers the capability to deny adversaries access to and use of GPS during military operations, and serves to preserve the peaceful use of GPS. Navy GPS Enhanced User Equipment (UE) Operational Requirements Document directs that future UE will incorporate an increased anti-jam capability. NAVWAR counters the threat by increasing resistance to intentional or unintentional interference. Sea NAVWAR Strategy comprises of 2 program increments, the first increment (near term) is to install GPS anti-jam antenna system (GAS-1) on surface platforms. The second increment (long term) is to install Advanced Digital Antenna Production (ADAP) antennas on surface platforms. The ADAP antenna improves upon GAS-1 performance by providing simultaneous dual frequency nulling, and built in test ability. Procurement and installation of anti-jam GPS antennas and modernized user equipment is required to ensure the continuation of GPS signals from space in a hostile jamming environment. The Sea NAVWAR program will equip selected ships with anti-jam GPS antennas to ensure the continued availability of GPS to support surface combat operations and provide reliable GPS and other positioning, navigation and timing data to ship-board Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance(C4ISR), Combat, and Weapons Systems.</p> <p>[P3A - 2 / (1R019) Global Positioning System (GPS) - based positioning, Navigation, &amp; Timing Service (GPNTS)]: The GPS-based PNT Service (GPNTS) system is the primary PNT system for the Navy to ensure reliable PNT capability and interoperability insertion in GPS receivers and associated Command, Control, Computers, Communications and Intelligence (C4I) and combat systems in a denied environment. GPNTS provides precise PNT data required for combat, weapons, command, control, communications, navigation, and other systems, as well as providing the time synchronization critical to the network environments. GPNTS backfits current PNT/GPS systems and forward fit new platforms. GPNTS will host the Air Force GPS Directorate-developed Military GPS User Equipment (MGUE) card, allowing access to the new more accurate and secure GPS Military-Code (M-Code) signal. GPNTS provides more robust and secure GPS/PNT capabilities than is currently in the Fleet. The system provides the capability to migrate non-real time GPS data toward a Common Computing Environment (CCE) and provide a path for the integration of advanced navigation systems and sensors.</p>												
<p><b>Justification:</b>  Navigation Warfare (NAVWAR) - Sea NAVWAR will procure and field dual ADAP FOAL antennas in FY18.</p> <p>GPS-based Positioning Navigation and Timing (PNT) Service (GPNTS) program will procure and field Low Rate Initial Production (LRIP) units in FY18.</p>												

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy										<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment							<b>P-1 Line Item Number / Title:</b> 2666 / American Forces Radio and TV Service (AFRTS)					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A				<b>Program Elements for Code B Items:</b> N/A				<b>Other Related Program Elements:</b> N/A				
<b>Line Item MDAP/MAIS Code:</b> N/A												
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>To Complete</b>	<b>Total</b>
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	29.110	4.240	4.577	2.730	0.000	2.730	2.670	2.803	2.853	2.798	Continuing	Continuing
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	29.110	4.240	4.577	2.730	0.000	2.730	2.670	2.803	2.853	2.798	Continuing	Continuing
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>29.110</b>	<b>4.240</b>	<b>4.577</b>	<b>2.730</b>	<b>0.000</b>	<b>2.730</b>	<b>2.670</b>	<b>2.803</b>	<b>2.853</b>	<b>2.798</b>	<b>Continuing</b>	<b>Continuing</b>
<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> )	-	-	-	-	-	-	-	-	-	-	-	-
<p><b>Description:</b></p> <p>K0001: American Forces Radio and Television Service (AFRTS) Program - AFRTS shipboard systems provide command information to deployed Sailors and Marines and allow for the distribution of AFRTS programming in order to provide situational awareness for forward deployed commanders with real-time news and information. The systems also provide programming to Sailors and Marines at sea worldwide as a Navy Quality of Life (QOL) initiative, staying in compliance with the Chief of Naval Operations (CNO) Shipboard Habitability Program. These systems contribute significantly to the habitability of Navy ships by providing and distributing news, command information, training, and entertainment programming using the latest technology available. These systems improve morale, combat effectiveness and retention rates of deployed personnel. All AFRTS systems use Commercial-Off-the-Shelf (COTS) equipment. Fleet Support Detachments (FSDs) are the installing agents for these systems. Each component replacement is made based on ship availability, condition of system, and is coordinated through the Type Commanders (TYCOMs).</p> <p>[P5 / Site CCTV - Digital/300]: K0001 - Shipboard Information, Training and Entertainment (SITE) Closed Circuit Television (CCTV) - Digital/300 - Digital/300 is the next generation of the SITE 2000/300. This system is a digitally-based replacement for the 2000/300 playback. Each system is comprised of Commercial Off-The-Shelf (COTS) components that take three to twelve months to procure. Each component upgrade/replacement is made based on ship availability, by the Fleet Support Detachments (FSDs) as the installing/replacement agents and condition of the system.</p> <p>[P5 / Site CCTV - Digital/400]: Shipboard Information, Training and Entertainment (SITE) Closed Circuit Television (CCTV) - Digital/400 - is the next generation of the SITE 2000/400. This system is a digitally-based replacement for the 2000/400 playback. Requires manpower of one dedicated technician and operator. Each system is comprised of Commercial Off-The-Shelf (COTS) components that take three to twelve months to procure. Each component upgrade/replacement is made based on ship availability, by the Fleet Support Detachments (FSDs) as the installing/replacement agents and condition of the system.</p> <p>[P5 / Site CCTV - Digital/501]: Digital/500 - is the next generation of the Shipboard Information, Training and Entertainment (SITE) 2000/500. This system is a digitally-based replacement for the 2000/500 playback. Requires manpower of two dedicated technicians and three operators. Each system is comprised of Commercial Off-The-Shelf (COTS) components that take three to twelve months to procure. Each component upgrade/replacement is made based on ship availability, by the Fleet Support Detachments (FSDs) as the installing/repair agents and condition of the system.</p> <p>[P5 / Circuit 27TV Upgrade]: Circuit 27TV Upgrade - Upgrade to 14TV head end only that will allow the onboard Shipboard Information, Training and Entertainment (SITE) system to distribute Television Direct To Sailors (TV-DTS), AFRTS, and pier-side cable commercial programming. Each component upgrade/replacement is made based on ship availability by the Fleet Support Detachments (FSDs) as the installing/replacement agents and the condition of the system.</p>												

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment		<b>P-1 Line Item Number / Title:</b> 2666 / American Forces Radio and TV Service (AFRTS)
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A	<b>Program Elements for Code B Items:</b> N/A	<b>Other Related Program Elements:</b> N/A
<b>Line Item MDAP/MAIS Code:</b> N/A		
<p>[P5 / Shipboard Broadcast System (SBS)]: K0001-Shipboard Broadcast System (SBS): The SBS system replaces the Shipboard Information, Training and Entertainment (SITE) 300/400/501 systems with an Internet Protocol (IP) video system. It collects and converts video content from several sources: Navy Motion Picture Services (NMPS) programming via encrypted DVDs (nDVD), Video Server, and shipboard surveillance cameras; and distributes the signals via Circuit 30 in Standard or High Definition. Each system is comprised of Commercial Off-The-Shelf (COTS) equipment that takes six to twelve months to procure. Each system upgrade is done based on ship availability by the Fleet Support Detachments (FSDs) as the installing/replacing agent and condition of the system.</p> <p>[P5 / K0830 - Production Engineering]: Supports review and approval of any production contract technical documentation or the separate development of this documentation to include: signal flow diagrams, Preventive Maintenance Services (PMS), production drawings, provisioning technical documentation (PTD), Integrated Logistic Support (ILS), Program Support Data (PSD), Allowance Parts List (APL's), and engineering in support of final design reviews.</p> <p>[P5 / K0INS - Non-FMP Installation]: Supports the installation of Shipboard Information, Training and Entertainment (SITE), TV-DTS (TV-Direct to Sailor) system onboard Navy ships. Installations are performed by Defense Media Activity Agency (DMAA) Fleet Support Detachments (FSDs) and are based on Type Commander (TYCOM) nominations.</p>		

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy										<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 7: Other Ship Electronic Equipment							<b>P-1 Line Item Number / Title:</b> 2676 / Strategic Platform Support Equip					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A				<b>Program Elements for Code B Items:</b> N/A				<b>Other Related Program Elements:</b> N/A				
<b>Line Item MDAP/MAIS Code:</b> N/A												
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>To Complete</b>	<b>Total</b>
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	33.527	17.440	8.972	6.889	0.000	6.889	6.982	7.127	7.283	7.430	-	95.650
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	33.527	17.440	8.972	6.889	0.000	6.889	6.982	7.127	7.283	7.430	-	95.650
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>33.527</b>	<b>17.440</b>	<b>8.972</b>	<b>6.889</b>	<b>0.000</b>	<b>6.889</b>	<b>6.982</b>	<b>7.127</b>	<b>7.283</b>	<b>7.430</b>	<b>-</b>	<b>95.650</b>
<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> )	-	0.989	1.224	1.641	-	1.641	1.781	2.053	1.702	1.504	Continuing	Continuing
Flyaway Unit Cost ( <i>\$ in Dollars</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ( <i>\$ in Dollars</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<p><b>Description:</b> Funding in this P-1 line provides Non-Propulsion Electronics equipment that will be installed aboard TRIDENT Class submarines as part of the Obsolete Equipment Replacement (OER) Program.</p> <p>OER Program is the replacement of existing hardware/software that, though functional, has become operationally obsolete, is no longer in production or supportable with spare parts, or has a high failure rate making them no longer cost effective to maintain. OER hardware/software changes are expected to provide significant cost savings via reduced maintenance costs and use Commercial-Off-The-Shelf (COTS) technology wherever possible as long as all technical requirements are met.</p> <p>This funding line includes performance of the required fully integrated system level testing and certification of changes to the TRIDENT Combat systems prior to installation of the changes on the ship. Integrated testing and certification provides assurance that when the changes are installed in the ship, the TRIDENT Combat system will operate as designed, allowing the ships to maintain their operational schedules and mission capabilities.</p> <p>[P40A / CCS Revision Engineering Cert/Test]: This program develops upgrades to legacy systems to maintain required interface connectivity to other Program Acquisition Resource Manager (PARM)-managed subsystems in response to PARMs modernizations, or to address obsolescence, or where mandated requirement changes (example Cyber security) drive changes to hardware or software.</p>												

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy										<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 8: Training Equipment							<b>P-1 Line Item Number / Title:</b> 2762 / Other Training Equipment					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A				<b>Program Elements for Code B Items:</b> N/A				<b>Other Related Program Elements:</b> N/A				
<b>Line Item MDAP/MAIS Code:</b> N/A												
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>To Complete</b>	<b>Total</b>
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	227.759	41.314	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	9.247	278.320
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	227.759	41.314	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	9.247	278.320
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>227.759</b>	<b>41.314</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>9.247</b>	<b>278.320</b>
<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> )	-	0.232	-	-	-	-	-	-	-	-	-	0.232
Flyaway Unit Cost ( <i>\$ in Dollars</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ( <i>\$ in Dollars</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<p><b>Description:</b>  Funding referenced in project units MB044/MB050 (submarine) was realigned into LI 5661 beginning in FY17.</p> <p>Funding referenced in project unit MB040 (surface) was realigned into LI 5664 beginning in FY17.</p> <p>Other Training Equipment line supports various types of Communication and Electronic training requirements.</p> <p>[P40A / MB044 SUBMARINE TRAINING SUPPORT EQUIPMENT]: MB044 SUBMARINE TRAINING SUPPORT EQUIPMENT</p> <p>This line procures submarine Fleet and team trainers sustaining equipment and systems, which emulate ship characteristics, as approved by the CNO. Representative training systems include, but are not limited to: Submarine Navigation Trainers which include the Virtual Environment Submarine (VESUB), Submarine Piloting and Navigation Trainers (SPAN), Reconfigurable SPAN (RSPAN), Submarine Bridge Trainer/Integrated SPAN (SBT/ISPAN), Navigation Databases, Ship Control Operator Trainer (SCOT), Electronic Chart Display and Information Systems-Navy (ECDIS-N) and PC-based Team Trainers which include the Mini-SPANs. These systems and Training Enhancement Changes (TECs) are identified by the Submarine Learning Center (SLC) for training activities, which are approved by the CNO. Supports Fleet requested updates and technical refresh of all the systems and products listed above. The SBT/ISPAN and upgrades to the existing navigation and mariner skills trainer in all homeports will be procured. The ISPAN Light Emitting Diode (LED) Ring will be procured for Homeports where an SBT Dome can't be accommodated. This line also provides configuration changes for the Voyage Management Systems (VMS), ECDIS-N, and the Submarine Multi Reconfigurable Training System (MRTS).</p> <p>The MRTS family includes VA CLASS Torpedo Room, Emergency Diesel Generator and Weapons Launch Console Team Trainer. which includes Submarine Communications Support System / Common Submarine Radio Room (SCSS / CSRR) trainers. SBT/ISPAN is comprised of Virtual Tactical, Sonar Simulation, Beam Forming Sonar Simulation Trainer, VMS, ECDIS-N, Radar Simulation, Navigation Aids, and Harbor Databases.</p> <p>[P40A / SHIP CONTROL OPERATOR TRAINER]: Funds requested in FY 2016 will procure a Ships Control Operator Trainer for the Guam Training Facility.</p> <p>[P40A / MB050 SUBMARINE SONAR TRAINERS]: MB050 SUBMARINE SONAR TRAINERS</p>												

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 8: Training Equipment		<b>P-1 Line Item Number / Title:</b> 2762 / Other Training Equipment
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A	<b>Program Elements for Code B Items:</b> N/A	<b>Other Related Program Elements:</b> N/A
<b>Line Item MDAP/MAIS Code:</b> N/A		
<p>The Sonar Employment Trainer (SET) provides acoustic operator employment Fleet and team training for submarine sonar systems. It uses entirely commercial components to contain contact and environment models, simulations of the sensors and signal processing, simulated operator consoles, and an instructional subsystem including an instructor's console. SET is used to train advanced operators in the Advanced Sonar Employment and Sonar Supervisor courses. The SET is periodically upgraded to support current software Advanced Processor Builds (APBs) and Technical Insertions (TIs). The SET is an essential component of an emerging shore based training that supports the projected technology in the Fleet systems that are designed to meet current and future threats: the Acoustics, Rapid Commercial-Off-The-Shelf (COTS) Insertion (A-RCI).</p> <p>The SET is part of the solution to increasing operator competence and data recognition through employment training by its use of 3-D graphics, animation, audio, and scientific visualization methods to illustrate highly complex displays and concepts of oceanographic physics. The demands of curriculum and student throughout at the primary submarine training site at NAVSUBSCOL, Groton dictates the number and configuration of trainers provided.</p> <p>FY15: Procures one kit and implements simulation upgrades to the SET as directed by the Type Commander.</p> <p>FY16: Procures one kit and implements simulation upgrades to the SET as directed by the Type Commander.</p> <p>[P40A / MB040 Common IAMD &amp; ASW Trainer (CIAT)]: Support shore based Aegis Combat Training capability that cannot be replicated inside an Aegis Ship</p> <p>[P40A / Common IAMD &amp; ASW Trainer (CIAT)]: Support shore based Aegis Combat Training capability that cannot be replicated inside an Aegis Ship</p>		

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy										<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment							<b>P-1 Line Item Number / Title:</b> 2815 / MATCALs					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): B				<b>Program Elements for Code B Items:</b> N/A				<b>Other Related Program Elements:</b> N/A				
<b>Line Item MDAP/MAIS Code:</b> N/A												
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>To Complete</b>	<b>Total</b>
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	284.365	10.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	294.376
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	284.365	10.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	294.376
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>284.365</b>	<b>10.011</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>-</b>	<b>294.376</b>
<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> )	-	0.821	-	-	-	-	-	-	-	-	-	0.821
Flyaway Unit Cost ( <i>\$ in Dollars</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ( <i>\$ in Dollars</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Description:</b> Funding for procurements, support costs and associated installations for FY 2017 and beyond have been realigned to Ashore ATC Equipment (BLI 2820).												
<b>Justification:</b> Funding for procurements, support costs and associated installations for FY 2017 and beyond have been realigned to Ashore ATC Equipment (BLI 2820).												

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy								Date: May 2017				
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment						P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment						
ID Code (A=Service Ready, B=Not Service Ready): B			Program Elements for Code B Items: N/A					Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	0.000	0.000	75.068	71.882	0.000	71.882	71.637	72.997	75.984	79.428	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	0.000	0.000	75.068	71.882	0.000	71.882	71.637	72.997	75.984	79.428	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	0.000	0.000	75.068	71.882	0.000	71.882	71.637	72.997	75.984	79.428	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	4.847	9.157	-	9.157	4.194	5.378	4.741	4.198	Continuing	Continuing
Flyaway Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Description:												
Efforts for Marine Air Traffic Control and Landing Systems (MATCALs), National Air Space System (NASMOD), Fleet Air Traffic Control (ATC) Systems and Landing Systems were previously funded under BLSs 2815, 2840, 2845 and 2846, respectively. Subject budgets are consolidated into Ashore ATC Equipment, BLI 2820 effective FY2017.												
MATCALs												
Marine Air Traffic Control and Landing Systems (MATCALs) provides for continuous, all-weather, radar/non-radar approach, departure, enroute, and tower air traffic control services to aircraft. Marine ATC provides initial, transition and sustained air traffic support for the Joint and Marine Air Ground Task Force air operations in any environment. MATCALs satisfies the operational requirements set forth by Specific Operational Requirements 34-22 of 12 Jul 1973; Remote Landing Site Tower (RLST) Operational Requirements Document (ORD) 341-88-93 of 25 Jul 1997; and Air Traffic Navigation Integration and Coordination System ORD 05-002 of 03 Dec 1992. MATCALs, with other Marine Air Command and Control Systems (MACCS) and federal agencies, provides the ability to project air combat power without regard to weather. Air Traffic Control (ATC) automation reduces air traffic controllers' traffic handling and management time, allowing more time for mission response and task accomplishment. It supports a required increase in aircraft sortie rates and contributes to extended time on target. The system provides for integration of ATC into the total MACCS. To provide this capability, MATCALs consists of 6 primary subsystems: (1) Air Traffic Navigation Integration and Coordination system (ATNAVICS) AN/TPX-31(V); (2) Tactical Terminal Communication System (TTCS) AN/TSQ-263; (3) Expeditionary Control Tower AN/TSQ-120C; (4) RLST AN/TSQ-216; (5)Tactical Air Navigation (TACAN) AN/TRN-44; (6) the Man-Portable TACAN AN/TRN-47(V)1, and various ancillary equipment. The ATNAVICS Air Surveillance Radar (ASR) Range Extension is funded to meet requirements identified in the ATC Initial Capabilities Document ICD (ICD), MROC DM 75-7007, MACC Operational Advisory Group. The gaps identified require sustainment of legacy sensor capability until such time as ATNAVICS PrePlanned Product Improvement initiatives enhance system capability to support main air base traffic density and airspace. Additionally, the positive control enabled by increased ASR range reduces separation enabling increased sortie rates. This program works with the Marine ATC Working Group identifying the requirements to implement the P3I and evolutionary product improvements as required for G/ATOR system, ATNAVICS, Expeditionary ATC Towers, and Navigational Aids that support Marine Air Traffic Control Detachments. G/ATOR is multi-role, ground-based, expeditionary radar that replaces five legacy radar systems for the Marine Air Ground Task Force. It satisfies the Marine Air Command and Control System and the Ground Counter Fire/ Counter Battery capabilities.												
NASMOD												
The Joint DoD/Federal Aviation Administration (FAA) National Airspace System (NAS) Modernization (MOD) program upgrades the DoD ATC systems at approach control facilities in concert with the FAA's upgrade of the National ATC System. These funds will procure ATC systems for the Navy/Marine ATC facilities. The Air Force is the DoD lead activity for the Joint Acquisition Program. The Joint Program Office is located at Hanscom AFB, MA.The NAS Mod program received a full rate production decision on 7 June 2005 and is in the production and deployment phase following Milestone C.												

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment		P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>FLEET ATC SYSTEMS</p> <p>NAVAIR provides shore based ATC terminal facilities with equipment that is required in joint efforts to efficiently and safely monitor and direct military and commercial air traffic in national and international air space. Many of these systems are required to interface through automated means with the FAA. Additionally, NAVAIR has material support responsibility for Special Instrumentation Systems, and Ancillary Equipment used at Navy and Marine Corps Aviation Shore activities in the continental United States and overseas.</p> <p>Engineering Change Proposal (ECP)/Operational Capability Improvement Request (OCIR) modernization (MR069) - The ECP/OCIR program provides for the procurement and/or modification of critically needed communications, radar, displays, data processors, and other electronic systems/equipment at Navy/Marine Corps ATC facilities worldwide. ECP/OCIR procurements replace and modernize costly-to-maintain systems and equipment in order to increase ATC efficiency and safety, and reduce total ownership costs.</p> <p>UHF/VHF Antenna Upgrade (MR404) - This program procures and installs antenna, antenna towers, and antenna cables</p> <p>Communications Systems Upgrade Program (MR408) - This program procures and installs advanced commercial state-of-the-art ATC voice switching equipment.</p> <p>UHF/VHF Transceiver Replacement Program (MR440) - This program modernizes aging Navy and Marine Corps UHF/VHF Transceivers that are the central core of all ATC emergency and Fleet Area Control &amp; Surveillance Facility (FACSFAC) communications.</p> <p>Emergency Communication System (ECS) Upgrade Program (MR445) - This program modernizes obsolete and unsupportable ECS equipment. Voice Switches, Recorders, Reproducers, Uninterruptable Power Supplies, and Built-In Test Equipment will be replaced with modern, supportable components.</p> <p>Air Field Lighting Control System (AFLCS) (MR510) - This program modernizes obsolete and unsupportable AFLCS equipment which will be replaced with modern, supportable components. Funding for this effort was realigned to the Terminal Automation System (TAS) CB070 beginning in FY18. The TAS provides the functionality and meets the requirements of the airfield lighting control as prescribed in the NASMOD ORD III Airfield Automation Annex A dated 16MAR05.</p> <p>Operational Communication System (OCS)/Emergency Communication System (ECS) Air Traffic Control (ATC) Recorder replacement program (MR520), through participation in the FAA ATC recorder replacement program will replace aging and obsolete ATC OCS and ECS ATC recorders with state of the art ATC recording/reproducing technology.</p> <p>Fiber Optic Communications Intersite System (FOCIS) Upgrade Program (MR530) - FOCIS is required for Precision Approach Radar (PAR) operations and for ATC voice communications at Naval and Marine Corps ATC facilities. This program modernizes obsolete and unsupportable FOCIS equipment with modern supportable components.</p> <p>LANDING SYSTEMS</p> <p>Landing Systems budget provides funding to modernize and ensure the reliability of Precision Approach Radars (PAR), Tactical Air Navigation (TACAN) systems, Instrument Landing Systems (ILS), and other air navigation aids used by the Navy and Marine Corps.</p> <p>PAR Commercial-off-the-shelf (AN/FPN-68A) Upgrade replaces obsolete PAR systems (AN/FPN-63) continuing fleet shore based Precision Approach capability. Additionally PAR (AN/FPN-63) ECPs are required to sustain the existing systems until replacement. Those ECPs include but are not limited to the Modulator Board Upgrade, the Antenna Upgrade, the Configuration Upgrade, the Turntable Upgrade, the Fiber Optic Inter-site System (FOIS), and the Angle Voltage Generator (AVG) Upgrade.</p> <p>TACAN Ship/Shore Upgrade ECPs update old technology and extend the service life of the TACAN. The TACAN sustainment consists of the Antenna Upgrade ECP for the OE-273 antenna (nomenclature for the new antenna TBD) and the Beacon Upgrade ECP of the AN/URN-25 which will make the upgraded Beacon an AN/URN-32.</p>		

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment		<b>P-1 Line Item Number / Title:</b> 2820 / Ashore ATC Equipment
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): B	<b>Program Elements for Code B Items:</b> N/A	<b>Other Related Program Elements:</b> N/A
<b>Line Item MDAP/MAIS Code:</b> N/A		
Instrument Landing Systems (nomenclature TBD after contract award) will provide the Navy and Marine Corps with a self-contained Precision Landing capability at selected Air Stations, to meet fleet requirements for safe aircraft recovery of aircraft equipped with ILS capabilities.		

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy								<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment						<b>P-1 Line Item Number / Title:</b> 2820 / Ashore ATC Equipment				
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): B			<b>Program Elements for Code B Items:</b> N/A			<b>Other Related Program Elements:</b> N/A				
<b>Line Item MDAP/MAIS Code:</b> N/A										
Exhibits Schedule					Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	AN/TPN-31A ATNAVICS ASR Range Extension (MJ455)				- / 0.000	- / 0.000	- / 4.069	- / 2.426	- / 0.000	- / 2.426
P-40a	Optimized Organizational Maintenance Activity (OOMA) (MJ460)				- / 0.000	- / 0.000	- / 1.687	- / 0.000	- / 0.000	- / 0.000
P-40a	MJ465 AMTAC				- / 0.000	- / 0.000	- / 4.300	- / 4.400	- / 0.000	- / 4.400
P-40a	CB010 - DoD Advanced Automation System (DAAS)				- / 0.000	- / 0.000	- / 4.841	- / 4.082	- / 0.000	- / 4.082
P-40a	CB030 Digital Airport Surveillance Radar (DASR)				- / 0.000	- / 0.000	- / 0.400	- / 0.400	- / 0.000	- / 0.400
P-40a	CB040 Tower Automation System (TAS)				- / 0.000	- / 0.000	- / 0.200	- / 0.200	- / 0.000	- / 0.200
P-40a	CB070 TAS Tech Refresh				- / 0.000	- / 0.000	- / 4.055	- / 2.517	- / 0.000	- / 2.517
P-40a	CB080 NAS Voice System (NVS)				- / 0.000	- / 0.000	- / 6.350	- / 7.508	- / 0.000	- / 7.508
P-40a	X1036 AN/FPN-63 PAR TECH REFRESH				- / 0.000	- / 0.000	- / 14.954	- / 7.749	- / 0.000	- / 7.749
P-40a	X1037 ILS Upgrade				- / 0.000	- / 0.000	- / 6.316	- / 6.015	- / 0.000	- / 6.015
P-40a	X1043 TACAN Antenna Upgrade				- / 0.000	- / 0.000	- / 5.351	- / 8.536	- / 0.000	- / 8.536
P-5	1 / MATCALs				- / 0.000	- / 0.000	- / 2.542	- / 2.736	- / 0.000	- / 2.736
P-5	2 / Fleet Air Traffic Control Systems				- / 0.000	- / 0.000	- / 8.292	- / 6.937	- / 0.000	- / 6.937
P-5	3 / Landing Systems				- / 0.000	- / 0.000	- / 0.351	- / 4.114	- / 0.000	- / 4.114
P-3a	7 / CB050 STARS TECH Refresh Upgrade (AIT)				- / 0.000	- / 0.000	- / 11.360	- / 14.262	- / 0.000	- / 14.262
<b>P-40</b>	<b>Total Gross/Weapon System Cost</b>				<b>- / 0.000</b>	<b>- / 0.000</b>	<b>- / 75.068</b>	<b>- / 71.882</b>	<b>- / 0.000</b>	<b>- / 71.882</b>
<p>*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.</p> <p>Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.</p>										
<p><b>Justification:</b>  MATCALs  FY2018 provides funding to procure Maintainability/Reliability Improvements, 1 ATNAVICS Range Extensions, and 3 AMTACs.</p> <p>NASMOD  The Federal Aviation Administration (FAA) began the Next Generation Air Transportation System initiative in FY2008. A major component of this capability is Automatic Dependent Surveillance Broadcast, which will provide aircraft position information to augment ground-based radar. Existing DoD Air Traffic Control (ATC) facilities interface with FAA's facilities, therefore the military must maintain interoperability and retain vital special-use airspace for combat readiness training. The DoD Advanced Automation System (DAAS) must be upgraded to meet this requirement.  FY2018 provides funding to procure 1 DoD Advanced Automation Systems, 8 STARS Tech Refresh Upgrades, 5 TAS Tech Refresh, 618 NAS Voice System Radios, various Engineering Change Proposals (ECPs) and associated support.</p> <p>FLEET ATC SYSTEMS  The basis for the FY2018 budget request is to continue modernizing aging Navy and Marine Corps ATC facilities and equipment in order to safely monitor and direct military and commercial air traffic in national and international air space. This equipment must continue to interface through automated means with the FAA.  FY2018 provides funding to procure 21 UHF/VHF Transceiver Replacements, 5 ECS Upgrades, 3 OCS/ECS ATC Recorder Upgrades, various ECPs/OCIRs and associated support.</p>										

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment		<b>P-1 Line Item Number / Title:</b> 2820 / Ashore ATC Equipment
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): B	<b>Program Elements for Code B Items:</b> N/A	<b>Other Related Program Elements:</b> N/A
<b>Line Item MDAP/MAIS Code:</b> N/A		
LANDING SYSTEMS FY2018 provides funding to procure: 2 PAR Tech Refresh COTs, 3 ILS Upgrades, 24 TACAN Antenna Upgrades, and 14 TACAN Beacon Upgrades.		

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy															Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9						P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment									Aggregated Items Title: AN/TPN-31A ATNAVICS ASR Range Extension (MJ455)					
Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Non-Recurring																				
EQUIPMENT -- Procurement <sup>(1)</sup>	A		-	-	-	-	-	-	1,200K	2	2.400	1,224K	1	1.224	-	-	-	1,224K	1	1.224
EQUIPMENT -- Installation	A		-	-	-	-	-	-	-	-	0.992	-	-	0.500	-	-	-	-	-	0.500
Subtotal: B Kits/Non-Recurring			-	-	0.000	-	-	-	-	-	3.392	-	-	1.724	-	-	-	-	-	1.724
Support Cost																				
Integrated Logistics Support	A		-	-	-	-	-	-	-	-	0.117	-	-	0.138	-	-	-	-	-	0.138
Production Engineering	A		-	-	-	-	-	-	-	-	0.560	-	-	0.564	-	-	-	-	-	0.564
Subtotal: Support Cost			-	-	0.000	-	-	-	-	-	0.677	-	-	0.702	-	-	-	-	-	0.702
Total			-	-	0.000	-	-	0.000	-	-	4.069	-	-	2.426	-	-	0.000	-	-	2.426
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
Remarks: Models of Systems Affected: MATCALs Type Modification: Modification																				
The Air Traffic Navigation Integration and Coordination System (ATNAVICS) Air Surveillance Radar (ASR) Range Extension is funded to meet requirements indentified in the Air Traffic Control (ATC) Initial Capabilities Document, Marine Requirements Oversight Committee Decision Memorandum 75-7007, Marine Aviation Command and Control Operational Advisory Group and Headquarters Marine Corps APX-25 Requirement Clarification letter dated 05 Jan 2010. The gaps identified require sustainment of legacy sensor capability until such time as ATNAVICS PrePlanned Product Improvement initiatives enhance system capability to support main air base traffic density and airspace. Additionally, the positive control enabled by increased ASR range reduces separation enabling increased sortie rates. The End Item Kits for the ATNAVICS ASR Range Extension that are being procured consist of: ASR transmitter, environmental control unit/power generator, Radio Frequency transmission line, ASR receiver/exciter and signal data processors and required software code modifications to system Lowest Repairable Units.																				
Procurements, installations and associated support costs for this effort prior to FY2017 were funded under BLI 2815.																				
Footnotes: <sup>(1)</sup> The ASR Range Extension is in response to the HQMC APX-25 Requirement Clarification letter dated 05 Jan 2010. Inventory objective is 15. 11 procurements and 11 installs are funded under BLI 2815.																				

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<b>Exhibit P-40a, Budget Item Justification For Aggregated Items:</b> FY 2018 Navy																<b>Date:</b> May 2017				
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 9								<b>P-1 Line Item Number / Title:</b> 2820 / Ashore ATC Equipment								<b>Aggregated Items Title:</b> Optimized Organizational Maintenance Activity (OOMA) (MJ460)				

  

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
<b>B Kits/Recurring -- OOMA</b>																				
Equipment -- Procurement <sup>(2)</sup>	A		-	-	-	0.00	10	0.000	159,750.00	4	0.639	-	-	-	-	-	-	-	-	-
Equipment -- Installation	A		-	-	-	-	-	-	-	-	0.371	-	-	-	-	-	-	-	-	-
<b>Subtotal: B Kits/Recurring -- OOMA</b>			-	-	<b>0.000</b>	-	-	-	-	-	<b>1.010</b>	-	-	-	-	-	-	-	-	-
<b>Support Cost</b>																				
Integrated Logistics Support	A		-	-	-	-	-	-	-	-	0.242	-	-	-	-	-	-	-	-	-
Production Engineering	A		-	-	-	-	-	-	-	-	0.374	-	-	-	-	-	-	-	-	-
Acceptance Testing	A		-	-	-	-	-	-	-	-	0.061	-	-	-	-	-	-	-	-	-
<b>Subtotal: Support Cost</b>			-	-	<b>0.000</b>	-	-	-	-	-	<b>0.677</b>	-	-	-	-	-	-	-	-	-
<b>Total</b>			-	-	<b>0.000</b>	-	-	<b>0.000</b>	-	-	<b>1.687</b>	-	-	<b>0.000</b>	-	-	<b>0.000</b>	-	-	<b>0.000</b>

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

**Remarks:**  
 Models of Systems Affected: NAS/MCAS  
 Type Modification: Added Capability

Optimized Organizational Maintenance Activity System is an automated management information system that provides Navy and Marine Corps aviation organizational maintenance units with timely and accurate information to aid managers in their daily management of assigned aircraft and equipment.

Procurements, installations and associated support costs for this effort prior to FY2017 were funded under BLI 2815.

**Footnotes:**  
<sup>(2)</sup> PMW-150 is the government agency that owns and delivers Optimized Organizational Maintenance Activity (OOMA). Inventory objective is 24. 20 procurements and 10 installs are funded under BLI 2815.

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<b>Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy</b>															<b>Date:</b> May 2017				
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 9								<b>P-1 Line Item Number / Title:</b> 2820 / Ashore ATC Equipment							<b>Aggregated Items Title:</b> MJ465 AMTAC				

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring																				
Equipment -- Procurement	A		-	-	-	-	-	-	999,660.51	3	2.999	1,030K	3	3.089	-	-	-	1,030K	3	3.089
Equipment -- Installation	A		-	-	-	-	-	-	-	-	0.415	-	-	0.430	-	-	-	-	-	0.430
Subtotal: B Kits/Recurring			-	-	0.000	-	-	-	-	-	3.414	-	-	3.519	-	-	-	-	-	3.519
Support Cost																				
Integrated Logistics Support	A		-	-	-	-	-	-	-	-	0.330	-	-	0.314	-	-	-	-	-	0.314
Production Engineering	A		-	-	-	-	-	-	-	-	0.556	-	-	0.567	-	-	-	-	-	0.567
Subtotal: Support Cost			-	-	0.000	-	-	-	-	-	0.886	-	-	0.881	-	-	-	-	-	0.881
Total			-	-	0.000	-	-	0.000	-	-	4.300	-	-	4.400	-	-	0.000	-	-	4.400

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

**Remarks:**

Models of Systems Affected: MATCALs  
Type Modification: Modification

The AN/TRN-47(V)2 Airfield Mobile TACAN (AMTAC) is a new start in FY 2017. It is a one for one replacement for the aging/obsolete AN/TRN-44A TACAN. The AN/TRN-47(V)2 AMTAC is a High Mobility Multipurpose Wheeled Vehicle (HMMWV) transportable, rapid set-up/tear-down, dual channel navigation aid, which provides TACAN-equipped aircraft with range, bearing, and non-precision approach capability.



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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy															Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9							P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment								Aggregated Items Title: CB010 - DoD Advanced Automation System (DAAS)					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring -- DoD Advanced Automation System																				
End Item -- Procurement <sup>(3)</sup>	A		-	-	-	0.00	1	0.000	908,000.00	2	1.816	935,000.00	1	0.935	-	-	-	935,000.00	1	0.935
End Item -- Installation	A		-	-	-	-	-	-	-	-	1.812	-	-	2.077	-	-	-	-	-	2.077
ECP/OCIR <sup>(4)</sup>	A		-	-	-	-	-	-	-	-	0.500	-	-	0.450	-	-	-	-	-	0.450
Subtotal: B Kits/Recurring -- DoD Advanced Automation System			-	-	0.000	-	-	-	-	-	4.128	-	-	3.462	-	-	-	-	-	3.462
Support Cost																				
Integrated Logistics Support	A		-	-	-	-	-	-	-	-	0.102	-	-	0.097	-	-	-	-	-	0.097
Production Engineering	A		-	-	-	-	-	-	-	-	0.611	-	-	0.523	-	-	-	-	-	0.523
Subtotal: Support Cost			-	-	0.000	-	-	-	-	-	0.713	-	-	0.620	-	-	-	-	-	0.620
Total			-	-	0.000	-	-	0.000	-	-	4.841	-	-	4.082	-	-	0.000	-	-	4.082
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
Remarks: Models of Systems Affected: NAS Type Modification: Added Capability  The DoD Advanced Automation System (DAAS) is being developed as part of a joint DoD/Federal Aviation Administration (FAA) program to modernize and standardize Air Traffic Control (ATC) equipment in the National Airspace System. The systems are installed in Navy ATC facilities to replace aging, obsolete equipment and comply with joint DoD/FAA modernization program agreements. DAAS provides for processors and displays for tower and approach controls. Inventory objective of 47.  Procurements, installations and associated support costs for this effort prior to FY2017 were funded under BLI 2840.  Footnotes: <sup>(3)</sup> DAAS - Advanced Planning (AP) costs for Installation occur 1 year prior to actual install and show as quantity zero. These upgrades are required to maintain radar connectivity with the FAA in order to preserve Fleet capability to sequence and separate aircraft in assigned airspace within the National Airspace System. <sup>(4)</sup> ECP costs are based on site unique software configurations through the rest of the FYDP.																				

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy										Date: May 2017	
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9					P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment					Aggregated Items Title: CB030 Digital Airport Surveillance Radar (DASR)	

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring -- DASR																				
ECP/OCIR		A	-	-	-	-	-	-	-	-	0.400	-	-	0.400	-	-	-	-	-	0.400
Subtotal: B Kits/Recurring -- DASR			-	-	0.000	-	-	-	-	-	0.400	-	-	0.400	-	-	-	-	-	0.400
Total			-	-	0.000	-	-	0.000	-	-	0.400	-	-	0.400	-	-	0.000	-	-	0.400

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

**Remarks:**

Models of Systems Affected: NAS  
Type Modification: Added Capability

The DASR was developed as part of a joint DoD/ FAA program to modernize and standardize ATC equipment in the National Airspace System. The DASR has enabled Navy ATC facilities to replace aging, obsolete approach control radars and comply with joint DoD/FAA modernization program agreements. Inventory objective of 29 DASR. 29 were procured and installed prior to FY2017 were funded under BLI 2840.

The FAA DASR technical refreshment has not progressed as planned and has been reorganized into multiple Engineering Change Proposals (ECPs) to mitigate obsolescence effective FY2017. An ECP line has been added to the budget starting in FY2017 to address these upgrades.

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<b>Exhibit P-40a, Budget Item Justification For Aggregated Items:</b> FY 2018 Navy															<b>Date:</b> May 2017				
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 9								<b>P-1 Line Item Number / Title:</b> 2820 / Ashore ATC Equipment							<b>Aggregated Items Title:</b> CB040 Tower Automation System (TAS)				

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring -- Tower Automation System																				
ECP/OCIR <sup>(5)</sup>	A		-	-	-	-	-	-	-	-	0.200	-	-	0.200	-	-	-	-	-	0.200
Subtotal: B Kits/Recurring -- Tower Automation System			-	-	0.000	-	-	-	-	-	0.200	-	-	0.200	-	-	-	-	-	0.200
Total			-	-	0.000	-	-	0.000	-	-	0.200	-	-	0.200	-	-	0.000	-	-	0.200

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

**Remarks:**

Models of Systems Affected: NAS  
Type Modification: Added Capability

The TAS was developed as part of a joint DoD/ FAA program to modernize and standardize ATC equipment in the National Airspace System. The TAS has enabled Navy ATC facilities to replace aging, obsolete equipment and comply with joint DoD/FAA modernization program agreements. Inventory objective of 57 TAS.

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

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

**Footnotes:**

<sup>(5)</sup> Support costs are included in the ECP/OCIR lines. Airfield Lighting Control System (AFLCS) realigned to the Terminal Automation System from MR510 of this budget beginning in FY18. The TAS provides the functionality and meets the requirements of the airfield lighting control as prescribed in the NASMOD ORD III Airfield Automation Annex A dated 16MAR05.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy															Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9							P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment							Aggregated Items Title: CB070 TAS Tech Refresh						
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring																				
End Item -- Procurement <sup>(6)</sup>	A		-	-	-	0.00	16	0.000	159,400.00	10	1.594	156,000.00	5	0.780	-	-	-	156,000.00	5	0.780
End Item -- Installation	A		-	-	-	-	-	-	-	-	1.939	-	-	1.200	-	-	-	-	-	1.200
Subtotal: B Kits/Recurring			-	-	0.000	-	-	-	-	-	3.533	-	-	1.980	-	-	-	-	-	1.980
Support Cost																				
Integrated Logistics Support <sup>(7)</sup>	A		-	-	-	-	-	-	-	-	0.149	-	-	0.124	-	-	-	-	-	0.124
Production Engineering	A		-	-	-	-	-	-	-	-	0.373	-	-	0.413	-	-	-	-	-	0.413
Subtotal: Support Cost			-	-	0.000	-	-	-	-	-	0.522	-	-	0.537	-	-	-	-	-	0.537
Total			-	-	0.000	-	-	0.000	-	-	4.055	-	-	2.517	-	-	0.000	-	-	2.517
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
Remarks: Models of Systems Affected: NAS Type Modification: Added Capability																				
The Tower Automation Systems have been fielded since 2001 and are experiencing obsolescence and Information Assurance (IA) issues. These upgrades will address these obsolescence and IA issues as well as maintain compatibility with the FAA's Next Generation (NextGen) Air Transportation System initiatives. Additionally, these upgrades will enhance system performance to provide Common Access Card utilization, multi-source weather reporting and Tactical Air Control Navigation (TACAN) control. In order to achieve the modernization of the National Air Space (NAS) envisioned by NextGen, the FAA is developing a Terminal Flight Data Management (TFDM) platform that integrates flight data systems and decision support tools. The TFDM program is an integrated approach to maximize the efficient collection, distribution, and update of data and improve access to information necessary for the safe and efficient control of air traffic. The TAS will be upgraded to be consistent with the FAA TFDM.																				
This effort includes TAS Tech Refresh efforts directly related to the Engineering Change Proposal (ECP) efforts detailed in cost element CB040 of this budget. The ECP introduces new capability into a common workstation that eliminates a separate visual communications (VISCOM) alert indicator. The nature of that consolidation creates an interdependency with CB040; which addresses severe obsolescence issues that render the current workstation configuration unsupportable. Both software and hardware for these two cost elements overlap and require concurrent efforts. Delay or interruption to either CB040 and/or CB070 causes a break in fleet capability and negatively impacts both flight safety and operator workload.																				
Procurements, installations and associated support costs for this effort prior to FY2017 were funded under BLI 2840.																				
Footnotes: <sup>(6)</sup> Inventory objective is 63. 23 procurements and 7 installations were funded prior to FY2017 and are funded on BLI 2840. Installation of FY2016 End Item procurements (qty 16) will be funded with FY2017 funding. Increase in inventory objective due to addition of 5 outlying fields of parent facilities not included in initial inventory objective that require the TAS Tech Refresh. Inventory objective is 63. Installation cost fluctuation are due to variations in Nava Air Station / Fleet Area Control and Surveillance Facility, and Marine Corps Air Station Mission requirements. <sup>(7)</sup> Support cost fluctuations are due to variations in Naval Air Station / Fleet Area Control and Surveillance Facility requirements, and Marine Corps Air Station mission requirements.																				

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy															Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9							P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment							Aggregated Items Title: CB080 NAS Voice System (NVS)						
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring -- Next Generation Voice Switch																				
End Item: Radios -- Procurement <sup>(8)</sup>	A		-	-	-	0.00	334	0.000	8,738.18	592	5.173	8,914.24	618	5.509	-	-	-	8,914.24	618	5.509
End Item: Radios -- Installation	A		-	-	-	-	-	-	-	-	0.687	-	-	1.336	-	-	-	-	-	1.336
Subtotal: B Kits/Recurring -- Next Generation Voice Switch			-	-	0.000	-	-	-	-	-	5.860	-	-	6.845	-	-	-	-	-	6.845
Support Cost																				
Integrated Logistics Support	A		-	-	-	-	-	-	-	-	0.180	-	-	0.220	-	-	-	-	-	0.220
Production Engineering	A		-	-	-	-	-	-	-	-	0.310	-	-	0.443	-	-	-	-	-	0.443
Subtotal: Support Cost			-	-	0.000	-	-	-	-	-	0.490	-	-	0.663	-	-	-	-	-	0.663
Total			-	-	0.000	-	-	0.000	-	-	6.350	-	-	7.508	-	-	0.000	-	-	7.508
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
Remarks: Models of Systems Affected: NAS Type Modification: Added Capability																				
FAA NAS Voice System(NVS) was a new start in FY 2015 and a forward-looking program to replace national airspace system (NAS) voice switches and radios with a new technology system capable of supporting future requirements for the NextGen. Many of these switches are experiencing increasing obsolescence and failures and are in need of replacement. They are not capable of supporting flexible reallocation of access to communications resources, and lack security needed for a network-based communications infrastructure, which is a key concept in modernization of the NAS. The NVS program will provide a key transitional element in the air traffic control voice communications infrastructure as it moves toward realizing the FAAs NextGen vision and a more operationally efficient and economic NAS.																				
Radios: There are 75 sites which will receive a total of 4,498 radios. The sites to receive radios include FACSFACs remote sites at Naval and Marine Corps Air Stations. The number of radios per site varies due to operational requirements and the number of aircraft serviced.																				
Voice Switches: There are two specific types of Voice Switches being procured: Operational Communication System (OCS) and Emergency Control System (ECS): 56 OCS Voice Switches, 42 ECS Voice Switches.																				
42 Sites will receive both an OCS Voice Switch and an ECS Voice Switch, 14 sites will receive only an OCS voice switch. While FACSFAC remote sites are equipped with radios, they are not equipped with Voice Switches.																				
Procurements, installations and associated support costs for this effort prior to FY2017 were funded under BLI 2840.																				
Footnotes: <sup>(8)</sup> End Item costs are based on current FAA contract pricing. Inventory objective is 4,498. 607 procurements and 273 installations were funded prior to FY2017 and are reflected on BLI 2840. Installation of FY2016 End Item procurements (qty 334) will be funded with FY2017 funding. Advanced Planning (AP) costs for installation occur 1 year prior to actual install and show as quantity zero																				

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy														Date: May 2017						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9							P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment							Aggregated Items Title: X1036 AN/FPN-63 PAR TECH REFRESH						
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring																				
X1036 - PAR Tech Refresh -- Procurement	A		0.00	2	0.000	0.00	3	0.000	4,034K	2	8.067	2,321K	2	4.642	-	-	-	2,321K	2	4.642
X1036 - PAR Tech Refresh -- Installation	A		-	-	-	-	-	-	-	-	4.573	-	-	1.666	-	-	-	-	-	1.666
Subtotal: B Kits/Recurring			-	-	0.000	-	-	-	-	-	12.640	-	-	6.308	-	-	-	-	-	6.308
Support Cost																				
Integrated Logistics Support	A		-	-	-	-	-	-	-	-	0.424	-	-	0.411	-	-	-	-	-	0.411
Production Engineering	A		-	-	-	-	-	-	-	-	1.860	-	-	1.000	-	-	-	-	-	1.000
Quality Assurance	A		-	-	-	-	-	-	-	-	0.030	-	-	0.030	-	-	-	-	-	0.030
Subtotal: Support Cost			-	-	0.000	-	-	-	-	-	2.314	-	-	1.441	-	-	-	-	-	1.441
Total			-	-	0.000	-	-	0.000	-	-	14.954	-	-	7.749	-	-	0.000	-	-	7.749
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
Remarks: Models of Systems Affected: Shore Sites Type Modification: Reliability  This Engineering Change Proposal (ECP) constitutes Block 2 and 3 of the Service Life Extension Program for the AN/FPN-63. It will extend the service life to at least 2025 by replacing obsolete receiver/transmitter assemblies, radar video processors, and controller displays with state-of-the-art assemblies/displays. This upgrade will also correct numerous human factors issues. This ECP will be accomplished on 36 deployed AN/FPN-63 Precision Approach Radar (PAR) Systems.  Procurements, installations and associated support costs for this effort prior to FY2017 were funded under BLI 2846.																				

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy															Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9							P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment							Aggregated Items Title: X1037 ILS Upgrade						
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring																				
ILS Upgrades -- Procurement <sup>(9)</sup>	A		-	-	-	-	-	-	974,750.00	4	3.899	974,666.00	3	2.924	-	-	-	974,666.00	3	2.924
ILS Upgrades -- Installation	A		-	-	-	-	-	-	-	-	-	-	-	1.692	-	-	-	-	-	1.692
Subtotal: B Kits/Recurring			-	-	0.000	-	-	-	-	-	3.899	-	-	4.616	-	-	-	-	-	4.616
Support Cost																				
Logistics	A		-	-	-	-	-	-	-	-	0.424	-	-	0.411	-	-	-	-	-	0.411
Production Engineering	A		-	-	-	-	-	-	-	-	1.957	-	-	0.951	-	-	-	-	-	0.951
Quality Assurance	A		-	-	-	-	-	-	-	-	0.036	-	-	0.037	-	-	-	-	-	0.037
Subtotal: Support Cost			-	-	0.000	-	-	-	-	-	2.417	-	-	1.399	-	-	-	-	-	1.399
Total			-	-	0.000	-	-	0.000	-	-	6.316	-	-	6.015	-	-	0.000	-	-	6.015

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

**Remarks:**

The Instrument Landing System (nomenclature TBD after contract award) is an automated self-contained system providing precision approach to the air station runways for ILS equipped aircraft, thus reducing manpower required for ground personnel. Procurements, installations and associated support costs for this effort prior to FY2017 were funded under BLI 2846.

**Footnotes:**

<sup>(9)</sup> Inventory objective is 31. First production unit cost is TBD and will be updated upon contract award. Contract award slipped to May 2017.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy															Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9						P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment						Aggregated Items Title: X1043 TACAN Antenna Upgrade								
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring																				
TACAN Antenna Upgrade -- Procurement <sup>(10)</sup>	A		-	-	-	-	-	-	230,181.82	11	2.532	237,083.33	24	5.690	-	-	-	237,083.33	24	5.690
TACAN Antenna Upgrade -- Installation	A		-	-	-	-	-	-	-	-	-	-	-	1.443	-	-	-	-	-	1.443
Subtotal: B Kits/Recurring			-	-	0.000	-	-	-	-	-	2.532	-	-	7.133	-	-	-	-	-	7.133
Support Cost																				
Logistics	A		-	-	-	-	-	-	-	-	1.931	-	-	0.804	-	-	-	-	-	0.804
Production Engineering	A		-	-	-	-	-	-	-	-	0.815	-	-	0.535	-	-	-	-	-	0.535
Quality Assurance	A		-	-	-	-	-	-	-	-	0.073	-	-	0.064	-	-	-	-	-	0.064
Subtotal: Support Cost			-	-	0.000	-	-	-	-	-	2.819	-	-	1.403	-	-	-	-	-	1.403
Total			-	-	0.000	-	-	0.000	-	-	5.351	-	-	8.536	-	-	0.000	-	-	8.536
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
Remarks: Models of Systems Affected: Shore Sites Type Modification: Modernization  The TACAN Antenna Upgrade program will provide ships and shore installations with a new antenna for TACAN systems. Justification: TACAN is a dated systems with multiple obsolete parts. Modernization of the TACAN antenna is required to reduce maintenance and improve life span in order to meet needs of the Fleet, and provide a stand-alone recovery system in the wake of the JPALS program restructure.  Procurements, installations and associated support costs for this effort prior to FY2017 were funded under BLI 2846.  Footnotes: <sup>(10)</sup> Inventory objective is 265.																				



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Exhibit P-5, Cost Analysis: FY 2018 Navy												Date: May 2017						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9						P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment						Item Number / Title [DODIC]: 1 / MATCALs						
ID Code (A=Service Ready, B=Not Service Ready) :									MDAP/MAIS Code:									
Resource Summary				Prior Years		FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total				
Procurement Quantity <i>(Units in Each)</i>				-		-		-		-		-		-				
Gross/Weapon System Cost <i>(\$ in Millions)</i>				0.000		0.000		2.542		2.736		0.000		2.736				
Less PY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Net Procurement (P-1) <i>(\$ in Millions)</i>				0.000		0.000		2.542		2.736		0.000		2.736				
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Total Obligation Authority <i>(\$ in Millions)</i>				0.000		0.000		2.542		2.736		0.000		2.736				
(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 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
Hardware - ECP / ECO Cost																		
Recurring Cost																		
1.1.1) MAINT / RELIABILITY IMPROVEMENT (MJ427)	-	-	0.000	-	-	0.000	-	-	2.444	-	-	2.212	-	-	0.000	-	-	2.212
Subtotal: Recurring Cost	-	-	0.000	-	-	0.000	-	-	2.444	-	-	2.212	-	-	0.000	-	-	2.212
Subtotal: Hardware - ECP / ECO Cost	-	-	0.000	-	-	0.000	-	-	2.444	-	-	2.212	-	-	0.000	-	-	2.212
Support - MISCELLANEOUS SUPPORT Cost																		
5.2) Install (MJ900) <sup>(11)</sup>	-	-	0.000	-	-	0.000	-	-	0.098	-	-	0.524	-	-	0.000	-	-	0.524
Subtotal: Support - MISCELLANEOUS SUPPORT Cost	-	-	0.000	-	-	0.000	-	-	0.098	-	-	0.524	-	-	0.000	-	-	0.524
Gross/Weapon System Cost	-	-	0.000	-	-	0.000	-	-	2.542	-	-	2.736	-	-	0.000	-	-	2.736
Footnotes:																		
<sup>(11)</sup> Install cost is for MJ427. The FY17 installation costs are associated with the 28Volt Power Supply and Environmental Control Unit (ECU) Engineering Change Proposals (ECPs). In FY18, installation costs have been budgeted for 2 separate AN/TSQ-263 ECPs and 1 ATNAVICS ECP. Each ECP has a unique installation cost associated with it.																		

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Exhibit P-5, Cost Analysis: FY 2018 Navy												Date: May 2017						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9						P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment						Item Number / Title [DODIC]: 2 / Fleet Air Traffic Control Systems						
ID Code (A=Service Ready, B=Not Service Ready) :									MDAP/MAIS Code:									
Resource Summary				Prior Years		FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total				
Procurement Quantity <i>(Units in Each)</i>				-		-		-		-		-		-				
Gross/Weapon System Cost <i>(\$ in Millions)</i>				0.000		0.000		8.292		6.937		0.000		6.937				
Less PY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Net Procurement (P-1) <i>(\$ in Millions)</i>				0.000		0.000		8.292		6.937		0.000		6.937				
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Total Obligation Authority <i>(\$ in Millions)</i>				0.000		0.000		8.292		6.937		0.000		6.937				
(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 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
Hardware - Fleet ATC - Hardware Cost																		
Recurring Cost																		
1.1.1) MR069 ECP/OCIR <sup>(12)</sup>	-	-	0.000	-	-	0.000	75,000.00	1	0.075	469,000.00	1	0.469	-	-	0.000	469,000.00	1	0.469
1.1.3) MR408 COMM System Upgrade	-	-	0.000	-	-	0.000	500,000.00	2	1.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.4) MR440 UHF/VHF Transceiver Replacement <sup>(13)</sup>	-	-	0.000	-	-	0.000	43,700.00	60	2.622	45,000.00	21	0.945	-	-	0.000	45,000.00	21	0.945
1.1.5) MR445 Emergency Communication System (ECS) Upgrade <sup>(14)</sup>	-	-	0.000	-	-	0.000	431,200.00	5	2.156	460,000.00	5	2.300	-	-	0.000	460,000.00	5	2.300
1.1.7) MR520 OCS/ECS ATC Recorder Upgrade <sup>(15)</sup>	-	-	0.000	-	-	0.000	-	-	0.000	50,000.00	3	0.150	-	-	0.000	50,000.00	3	0.150
Subtotal: Recurring Cost	-	-	0.000	-	-	0.000	-	-	5.853	-	-	3.864	-	-	0.000	-	-	3.864
Subtotal: Hardware - Fleet ATC - Hardware Cost	-	-	0.000	-	-	0.000	-	-	5.853	-	-	3.864	-	-	0.000	-	-	3.864
Support - Other Cost																		
2.1) Fleet ATC Integrated Logistics Support (MR800)	-	-	0.000	-	-	0.000	-	-	0.180	-	-	0.183	-	-	0.000	-	-	0.183

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Exhibit P-5, Cost Analysis: FY 2018 Navy												Date: May 2017						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9						P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment						Item Number / Title [DODIC]: 2 / Fleet Air Traffic Control Systems						
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
2.2) Fleet ATC Production Engineering (MR830)	-	-	0.000	-	-	0.000	-	-	0.346	-	-	0.588	-	-	0.000	-	-	0.588
2.3) Fleet ATC Installs (16)	-	-	0.000	-	-	0.000	-	-	1.913	-	-	2.302	-	-	0.000	-	-	2.302
Subtotal: Support - Other Cost	-	-	0.000	-	-	0.000	-	-	2.439	-	-	3.073	-	-	0.000	-	-	3.073
Gross/Weapon System Cost	-	-	0.000	-	-	0.000	-	-	8.292	-	-	6.937	-	-	0.000	-	-	6.937
Footnotes:																		
(12) MR069: This program provides for the procurement and or modification of critically needed communications, radar, displays, data processors and other electronic systems / equipment at Navy / Marine Corps Air Traffic Control facilities worldwide. Due to the variety of the Air Traffic Control systems involved and the scope of these validated requirements, costs can vary significantly between fiscal years. The unit cost for an individual OCIR can range from \$1,500 to \$500,000 so the unit cost is and average of all OCIRs procured in that year and as such will fluctuate from year to year.																		
(13) MR440: Inventory objective is 330. 249 procurements and installs were funded prior to FY2017 and are reflected on BLI 2845. Increase in unit cost from FY17 to FY18 reflects actual cost of procurement																		
(14) MR445: Inventory objective is 45. 27 procurements and 24 installations were funded prior to FY2017 and are reflected on BLI 2845.																		
(15) MR520: The Operational Communication System (OCS) and Emergency Communication System (ECS) Air Traffic Control (ATC) recorder upgrade through participation in the Federal Aviation Administration (FAA) ATC recorder replacement program will replace aging and obsolete ATC OCS and ECS ATC recorders with state of the art ATC recording/reproducing technology. Inflation has not been applied in FY2018 and FY2019 because this is for the new FAA recorder where the design has not been finalized and the procurement contract has not yet been completed. The size of the recorders will vary significantly. The ECS recorder will have 10 channels. The OCS recorders will vary between 32 and 260 channels.																		
(16) FY18 installations include UHF/VHF transceiver installation at remote sites in Hawaii.																		

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Exhibit P-5, Cost Analysis: FY 2018 Navy													Date: May 2017								
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9							P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment						Item Number / Title [DODIC]: 3 / Landing Systems								
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:											
Resource Summary				Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
Procurement Quantity <i>(Units in Each)</i>				-			-			-			-			-			-		
Gross/Weapon System Cost <i>(\$ in Millions)</i>				0.000			0.000			0.351			4.114			0.000			4.114		
Less PY Advance Procurement <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Net Procurement (P-1) <i>(\$ in Millions)</i>				0.000			0.000			0.351			4.114			0.000			4.114		
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Total Obligation Authority <i>(\$ in Millions)</i>				0.000			0.000			0.351			4.114			0.000			4.114		
(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 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total					
	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)			
Hardware - Landing Systems - TACAN Beacon Cost																					
Recurring Cost																					
1.1.1) X1042 - TACAN BEACON UPGRADE (17)	-	-	0.000	-	-	0.000	-	-	0.000	217,000.00	14	3.038	-	-	0.000	217,000.00	14	3.038			
Subtotal: Recurring Cost	-	-	0.000	-	-	0.000	-	-	0.000	-	-	3.038	-	-	0.000	-	-	3.038			
Subtotal: Hardware - Landing Systems - TACAN Beacon Cost	-	-	0.000	-	-	0.000	-	-	0.000	-	-	3.038	-	-	0.000	-	-	3.038			
Support - Other Cost																					
2.1) X1800 - Landing Systems Integrated Logistics Support	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.033	-	-	0.000	-	-	0.033			
2.2) X1830 - Landing Systems Production Engineering (18)	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.419	-	-	0.000	-	-	0.419			
2.4) X1900 - Landing System Installs (19)	-	-	0.000	-	-	0.000	-	-	0.351	-	-	0.624	-	-	0.000	-	-	0.624			
Subtotal: Support - Other Cost	-	-	0.000	-	-	0.000	-	-	0.351	-	-	1.076	-	-	0.000	-	-	1.076			
Gross/Weapon System Cost	-	-	0.000	-	-	0.000	-	-	0.351	-	-	4.114	-	-	0.000	-	-	4.114			
Footnotes:																					

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Exhibit P-5, Cost Analysis: FY 2018 Navy		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9	P-1 Line Item Number / Title: 2820 / Ashore ATC Equipment	Item Number / Title [DODIC]: 3 / Landing Systems
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
<div>(17) X1042: Inventory objective is 206. 61 procurements and 57 installs were funded prior to FY2017 and are reflected on BLI 2846. 77 procurement and 63 installs were funded prior to FY2018 and are reflected on BLI 2851.</div> <div>(18) Production Engineering funding has increased in FY18 to address broadened CyberSecurity requirements to remain compliant with software CyberSecurity directives and Information Assurance mandates.</div> <div>(19) In FY17, the installations costs are Advance Planning Costs. In FY18, the actual installation occurs, thus driving the higher cost.</div>		

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 9			<b>P-1 Line Item Number / Title:</b> 2820 / Ashore ATC Equipment		<b>Modification Number / Title:</b> 7 / CB050 STARS TECH Refresh Upgrade	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	0.000	0.000	11.360	14.262	0.000	14.262
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	0.000	0.000	11.360	14.262	0.000	14.262
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>0.000</b>	<b>0.000</b>	<b>11.360</b>	<b>14.262</b>	<b>0.000</b>	<b>14.262</b>
<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> )	-	-	-	-	-	-
<p><b>Description:</b></p> <p>The Standard Terminal Automation Replacement System (STARS) is a joint (DoD) and Department of Transportation FAA program to modernize terminal air traffic control automation systems. The STARS contract was awarded by the FAA on September 16, 1996, and ends September 30, 2017. The FAA anticipates the award of a contract for system maintenance, system technical refresh, and system enhancements through fiscal year 2019. The FAA began the Next Generation Air Transportation System initiative in FY2008. A major component of this capability is Automatic Dependent Surveillance Broadcast, which will provide aircraft position information in place of ground-based radar. The DoD version of STARS DAAS must be upgraded to meet this requirement. Inventory objective is 38.</p> <p>Procurements, installations and associated support costs for this effort prior to FY2017 were funded under BLI 2840.</p>						

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 9			<b>P-1 Line Item Number / Title:</b> 2820 / Ashore ATC Equipment		<b>Modification Number / Title:</b> 7 / CB050 STARS TECH Refresh Upgrade	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Models of Systems Affected:</b> NAS			<b>Modification Type:</b> AIT		<b>Related RDT&amp;E PEs:</b> 0604504N	
<b>Financial Plan</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
<b>Procurement</b>						
<i>Modification Item 1 of 1:</i> CB050 STARS TECH Refresh Upgrade						
B Kits						
Recurring						
2.1.1) End Item - NonOrganic <sup>(20)</sup>	- / -	4 / 0.000	7 / 9.385	8 / 11.081	- / -	8 / 11.081
<i>Subtotal: Recurring</i>	<i>- / 0.000</i>	<i>- / -</i>	<i>- / 9.385</i>	<i>- / 11.081</i>	<i>- / -</i>	<i>- / 11.081</i>
<i>Subtotal: CB050 STARS TECH Refresh Upgrade</i>	<i>- / -</i>	<i>4 / 0.000</i>	<i>7 / 9.385</i>	<i>8 / 11.081</i>	<i>- / -</i>	<i>8 / 11.081</i>
<i>Subtotal: Procurement, All Modification Items</i>	<i>- / 0.000</i>	<i>- / -</i>	<i>- / 9.385</i>	<i>- / 11.081</i>	<i>- / -</i>	<i>- / 11.081</i>
<b>Support (All Modification Items)</b>						
3.1) Integrated Logistics Support	- / 0.000	- / 0.000	- / 0.150	- / 0.150	- / 0.000	- / 0.150
3.2) Production Engineering	- / 0.000	- / 0.000	- / 0.451	- / 0.579	- / 0.000	- / 0.579
<i>Subtotal: Support</i>	<i>- / 0.000</i>	<i>- / -</i>	<i>- / 0.601</i>	<i>- / 0.729</i>	<i>- / -</i>	<i>- / 0.729</i>
<b>Installation</b>						
<i>Modification Item 1 of 1:</i> CB050 STARS TECH Refresh Upgrade	- / 0.000	- / 0.000	- / 1.374	- / 2.452	- / 0.000	- / 2.452
<i>Subtotal: Installation</i>	<i>- / 0.000</i>	<i>- / -</i>	<i>- / 1.374</i>	<i>- / 2.452</i>	<i>- / -</i>	<i>- / 2.452</i>
<b>Total</b>						
<b>Total Cost (Procurement + Support + Installation)</b>	<b>0.000</b>	<b>0.000</b>	<b>11.360</b>	<b>14.262</b>	<b>0.000</b>	<b>14.262</b>

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy						<b>Date:</b> May 2017							
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 9				<b>P-1 Line Item Number / Title:</b> 2820 / Ashore ATC Equipment				<b>Modification Number / Title:</b> 7 / CB050 STARS TECH Refresh Upgrade					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :						<b>MDAP/MAIS Code:</b>							
<b>Modification Item 1 of 1:</b> CB050 STARS TECH Refresh Upgrade													
<b>Manufacturer Information</b>													
Manufacturer Name: Raytheon						Manufacturer Location: Marlborough, MA							
Administrative Leadtime (in Months): 6						Production Leadtime (in Months): 12							
<b>Dates</b>		<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
Contract Dates						Mar 2017				Mar 2018			
Delivery Dates						Mar 2018				Mar 2019			
<b>Installation Information</b>													
<b>Method of Implementation:</b> AIT:: Installation Name: End Item													
<b>Installation Cost</b>		<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>	
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total 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 2016		- / -		- / -		4 / 1.374		- / -		- / -		- / -	
FY 2017		- / -		- / -		- / -		7 / 2.452		0 / 0.000		7 / 2.452	
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -	
Total		- / -		- / -		4 / 1.374		7 / 2.452		0 / 0.000		7 / 2.452	
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	-	-	-	-	-	-	2	2	-	-	4	3	-
Out	-	-	-	-	-	-	-	2	2	-	-	4	3
<b>Footnotes:</b> (20) This effort was previously funded in BLI 2840. Support cost fluctuations are due to variations in Naval Air Station / Fleet Area Control and Surveillance Facility requirements, and Marine Corps Air Station mission requirements. (3) Installation costs fluctuate based on location of installation and the tailoring of systems to meet Naval Air Station / Fleet Area Control and Surveillance Facility requirements, and Marine Corps Air Station mission requirements. Decrease in inventory objective due to incorrect system count. 8 remote tower configuration were inadvertently counted as full STARS Tech Refresh systems and not as part of the parent facility STARS Tech Refresh System. Remote towers will be procured as part of the parent facility. Additionally, NAS Willow Grove and NAS Brunswick were included in the inventory objective. NAS Willow Grove and NAS Brunswick were disestablished in 2011 as part of Base Realignment and Closure (BRAC).													



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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy								Date: May 2017				
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment						P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment						
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A					Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	0.000	0.000	33.484	44.611	0.000	44.611	48.625	49.956	52.644	52.790	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	0.000	0.000	33.484	44.611	0.000	44.611	48.625	49.956	52.644	52.790	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	0.000	0.000	33.484	44.611	0.000	44.611	48.625	49.956	52.644	52.790	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	0.099	0.606	-	0.606	-	-	-	-	-	0.705
Flyaway Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Description:												
Efforts for Shipboard Air Traffic Control (SATC) and Automatic Carrier Landing System (ACLS) were previously funded under BLIs OPN 2831 and OPN 2832, respectively. Beginning in FY 2017, this consolidated line item (OPN 2830, Afloat ATC Equipment) continues efforts previously executed under OPN 2831 and OPN 2832 and is not considered a new start.												
DESCRIPTION:												
Shipboard Air Traffic Control (SATC):												
SATC systems are responsible for safe and expeditious control of air traffic within 50 Nautical Miles of a ship. SATC systems include the air traffic surveillance radar (ASR), AN/SPN43 and the air traffic control processing and display system, AN/TPX-42A(V), which has three major configurations: AN/TPX-42A(V)14/15/16. v14 and v16 configurations comprise of Carrier Air Traffic Control Center - Direct Altitude and Identity Readout (CATCC-DAIR), Amphibious Air Traffic Control Center - Direct Altitude and Identity Readout (AATCC-DAIR); both (V)14 and (V)16 DAIR systems use AN/SPN-43 and Identification Friend or Foe (IFF) inputs to track and control aircraft. The third configuration, AN/TPX-42A(V)15 interfaces with next generation multipurpose radars and IFF to perform the same mission. Obsolescence problems are being addressed through various upgrades in a phased approach. The major upgrades include a series of AN/TPX-42A(V) modification kits requiring various combinations of OL-541processor rehost, track processor upgrade, OD-220 console, audio/video recorder, flat panel display, embedded trainer, and other components to bring the AN/TPX-42A(V)14 system to AN/TPX-42A(V)16 configuration and eventually to the Air Traffic Control Multifunction Console configuration. The ASR capability provided by the AN/SPN-43 radar system is required for the service-life of CVNs and LHA/LHD class ships. Obsolescence problems are being addressed through various upgrades in a phased approach until the capability is replaced by the AN/SPN-50 Shipboard Air Traffic Radar.												
Automatic Carrier Landing System (ACLS):												
ACLS program comprises three legacy systems (AN/SPN-46, AN/SPN-41, and AN/SPN-35C) that provide the primary and secondary precision electronic guidance for landing suitably equipped aircraft under all weather conditions on CVNs, LHA/LHD class ships, and selected Naval Air Stations. Many of the components in the system have been in service for more than twenty years. This program funds maintainability, reliability, modernization and supportability improvements to existing equipment components that can no longer be maintained, procured or supported, as well as items providing upgraded operational capability. Life Cycle Extension (LCE) sustainment efforts for ACLS systems will be completed to address obsolescence and supportability issues, leverage Commercial Off-The-Shelf (COTS) technology, address cyber-security updates and requirements, and support external system interface requirements. The LCE efforts by systemare planned to be conducted in blocks, to address the most critical obsolescence, supportability, and emergent requirements first and to group remaining improvements into logical block upgrade packages that minimize multiple,duplicative repair efforts and reduce costs while delivering hardware in a time phased approach to meet ship maintenance availability schedules.												

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment		P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>AN/SPN-46 Precision Approach Landing System (PALS) provides aircraft position information to the Final Control Workstation in Carrier Air Traffic Control Center (CATCC), and provides the pilot with the capability of selecting a fully automatic, instrument landing, or talk down approach. This system is certified to provide the carrier with an all-weather flight operational capability. Initial Operational Capability (IOC) of the AN/SPN-46 was in 1985, and the system has exceeded its design life. There are significant obsolescence issues. AN/SPN-46 Block IV upgrade is designed to correct known obsolescence issues in the antenna pedestal, 50KW Ka band modulator/transmitter, and various Circuit Card Assemblies (CCAs). If this effort is not accomplished, replacement parts will not be available to support the system, thereby, negatively affecting Operational Availability (Ao) and safety of flight on the aircraft carrier.</p> <p>AN/SPN-41 Transmitting set provides all weather instrument approach guidance from the ship to the aircraft equipped with AN/ARA-63 Receiver Group. It is a secondary precision electronic landing system and safety of flight back up to provide azimuth and elevation alignment information to suitably equipped aircraft aboard CVN and LHA/LHD class ships. Initial Operational Capability (IOC) of the AN/SPN-41 was in 1970 and the system has exceeded its design life. AN/SPN-41 LCE upgrades include the Transmitter, Coder, Electronics Drawer, and Radome hardware to ensure continued operational availability of and extended the service life of the AN/SPN-41, and is the Joint Precision Approach and Landing System (JPALS) back-up system.</p> <p>AN/SPN-35C is the Precision Approach Radar aboard LHA/LHD class ships and is used for Mode III aircraft recovery which ensures the safe approach and landing of AV-8B and various helicopters during adverse weather and night conditions. Initial Operational Capability (IOC) of the AN/SPN-35C was in 2004. The AN/SPN-35C Block I upgrade includes replacement of common failure items, obsolete components, and analog system components, including the Radar Processor Controller (RPC), the Main Input/Output Processor (MIOP), and replace some obsolete Control-Indicator Displays to ensure continued operational availability of and extended the service life of the AN/SPN-35C.</p> <p>Procurement, installations and associated support costs with these efforts prior to FY2017 were funded under BLI 2832.</p> <p>Installing Agent: Shipyards and Alteration Installation Teams.</p> <p>When installation to be made: Selected Restricted Availability (SRA) / Restricted Availability (RAV).</p> <p>Ships or facilities to receive the equipment: CVNs, LHA/LHD class ships, Software Support Activity (NAWCAD, St Inigoes, MD) and various selected shore and training sites.</p>		

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy								<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment						<b>P-1 Line Item Number / Title:</b> 2830 / Afloat ATC Equipment				
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A			<b>Program Elements for Code B Items:</b> N/A			<b>Other Related Program Elements:</b> N/A				
<b>Line Item MDAP/MAIS Code:</b> N/A										
Exhibits Schedule					Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 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	SATC Modernization Kit Summary (MP052, MP054, MP055, MP056, MP057, MP058, MP059, MP060)				- / 0.000	- / 0.000	- / 8.485	- / 8.657	- / 0.000	- / 8.657
P-40a	AN/SPN-46 (V)3 Radar Set Group PN413				- / 0.000	- / 0.000	- / 8.316	- / 7.086	- / 0.000	- / 7.086
P-40a	AN/SPN-41 Transmitter MOD (LCE) PN416				- / 0.000	- / 0.000	- / 1.186	- / 0.499	- / 0.000	- / 0.499
P-40a	AN/SPN-41 Coder Monitor (LCE) PN417				- / 0.000	- / 0.000	- / 1.083	- / 0.981	- / 0.000	- / 0.981
P-40a	AN/SPN-41 Electronic Drawer Assembly (LCE) PN418				- / 0.000	- / 0.000	- / 2.534	- / 1.392	- / 0.000	- / 1.392
P-40a	AN/SPN-41 Radome Hardware Upgrade (LCE) PN419				- / 0.000	- / 0.000	- / 1.729	- / 0.121	- / 0.000	- / 0.121
P-3a	2 / ACLS MOD KITS SUMMARY PN408 (Modernization)				- / 0.000	- / 0.000	- / 8.822	- / 12.064	- / 0.000	- / 12.064
P-3a	8 / AN/SPN-46 Block IV (PN420) (TBD)				- / 0.000	- / 0.000	- / 1.329	- / 13.811	- / 0.000	- / 13.811
<b>P-40</b>	<b>Total Gross/Weapon System Cost</b>				<b>- / 0.000</b>	<b>- / 0.000</b>	<b>- / 33.484</b>	<b>- / 44.611</b>	<b>- / 0.000</b>	<b>- / 44.611</b>
*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.										
<b>Justification:</b> FY 2018 funds baseline programs to provide Automatic Carrier Landing System (ACLS) and Shipboard Air Traffic Control (SATC) systems.										

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy																Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9								P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment								Aggregated Items Title: SATC Modernization Kit Summary (MP052, MP054, MP055, MP056, MP057, MP058, MP059, MP060)					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)	
B Kits/Recurring																					
(MP054)TPX-42 UPG, FC4 (Recorders) -- Procurement <sup>(1)</sup>	A		-	-	-	0.00	6	0.000	51,000.00	6	0.306	52,000.00	2	0.104	-	-	-	52,000.00	2	0.104	
(MP054)TPX-42 UPG, FC4 (Recorders) -- Installation	A		-	-	-	-	-	-	-	-	0.300	-	-	0.317	-	-	-	-	-	0.317	
(MP055) TPX-42 UPG, FC5 -- Procurement <sup>(2)</sup>	A		-	-	-	0.00	3	0.000	490,000.00	3	1.470	499,000.00	2	0.998	-	-	-	499,000.00	2	0.998	
(MP055) TPX-42 UPG, FC5 -- Installation	A		-	-	-	-	-	-	-	-	0.274	-	-	0.289	-	-	-	-	-	0.289	
(MP056) TPX-42 Embedded Trainer -- Procurement <sup>(3)</sup>	A		-	-	-	0.00	6	0.000	89,333.33	6	0.536	70,000.00	2	0.140	-	-	-	70,000.00	2	0.140	
(MP056) TPX-42 Embedded Trainer -- Installation	A		-	-	-	-	-	-	-	-	0.845	-	-	0.848	-	-	-	-	-	0.848	
(MP058) TPX-42 Multi-Function Console -- Procurement <sup>(4)</sup>	A		-	-	-	-	-	-	-	-	-	1,222K	2	2.444	-	-	-	1,222K	2	2.444	
(MP058) TPX-42 Multi-Function Console -- Installation	A		-	-	-	-	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-	
(MP059) TPX-42 ECP Upgrades -- Procurement <sup>(5)</sup>	A		-	-	-	0.00	4	0.000	325,500.00	2	0.651	-	-	-	-	-	-	-	-	-	
(MP059) TPX-42 ECP Upgrades -- Installation	A		-	-	-	-	-	-	-	-	1.140	-	-	-	-	-	-	-	-	-	
(MP052) SPN-43 ECP Upgrade -- Procurement <sup>(6)</sup>	A		-	-	-	0.00	6	0.000	238,000.00	4	0.952	-	-	-	-	-	-	-	-	-	
(MP052) SPN-43 ECP Upgrade -- Installation	A		-	-	-	-	-	-	-	-	1.058	-	-	-	-	-	-	-	-	-	
(MP060) SPN-43 Transmitter/ Receiver Upgrade -- Procurement <sup>(7)</sup>	A		-	-	-	-	-	-	-	-	-	2,496K	1	2.496	-	-	-	2,496K	1	2.496	

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<b>Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy</b>																<b>Date:</b> May 2017			
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 9								<b>P-1 Line Item Number / Title:</b> 2830 / Afloat ATC Equipment								<b>Aggregated Items Title:</b> SATC Modernization Kit Summary (MP052, MP054, MP055, MP056, MP057, MP058, MP059, MP060)			

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
(MP060) SPN-43 Transmitter/Receiver Upgrade -- Installation	A		-	-	-	-	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-
<b>Subtotal: B Kits/Recurring</b>			-	-	0.000	-	-	-	-	-	7.532	-	-	7.636	-	-	-	-	-	7.636
<b>Support Cost</b>																				
Engineering Changes to Correct Deficiencies	A		-	-	-	-	-	-	-	-	0.352	-	-	0.366	-	-	-	-	-	0.366
Integrated Logistics Support	A		-	-	-	-	-	-	-	-	0.281	-	-	0.305	-	-	-	-	-	0.305
Production Engineering	A		-	-	-	-	-	-	-	-	0.270	-	-	0.295	-	-	-	-	-	0.295
Quality Assurance	A		-	-	-	-	-	-	-	-	0.050	-	-	0.055	-	-	-	-	-	0.055
<b>Subtotal: Support Cost</b>			-	-	0.000	-	-	-	-	-	0.953	-	-	1.021	-	-	-	-	-	1.021
<b>Total</b>			-	-	0.000	-	-	0.000	-	-	8.485	-	-	8.657	-	-	0.000	-	-	8.657

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

**Remarks:**

Models of Systems Affected: CVNs, LHA/LHD class ships  
Type Modification: Modernization

This equipment and installation costs on this P-3a are for individual modification programs that do not exceed \$5 million in either budget or \$10 million in three years. This exhibit summarizes procurement and installation for Cost Codes MP052, MP054, MP055, MP056, MP057, MP058, MP059, and MP060. Line item Engineering Changes to Correct Deficiencies captures unanticipated emergent engineering changes.

**Footnotes:**

- (1) MP054 TPX-42 UPG, FC4: Inventory Objective is 29. 10 procurements and 4 installations were funded prior to FY17 and are reflected in BLI 2831.
- (2) MP055 TPX-42 UPG, FC5 Inventory objective is 24. 17 procurements and 14 installations were funded prior to FY17 and are reflected in BLI 2831.
- (3) MP056 TPX-42 Embedded Trainer: Inventory Objective is 25. 14 procurements and 8 installations were funded prior to FY17 and are reflected in BLI 2831.
- (4) MP058 TPX-42 Multi-Function Console: Inventory Objective is 25. The Multi-Function Console (MFC) provides a common human interface for all ATC workstations that includes complete upgrades of software and hardware to support new radar sensors that will reduce operational costs and improve reliability. This item is currently in development and is reflected in the RDT&E Budget (PE 0604504N Air Control/Project Unit 0993). FY2018 will be the first procurement and the government will own the software. Many of the other items in this P-3a are Engineering Change Proposals to resolve obsolescence issues.
- (5) MP059 TPX-42 ECP Upgrades: Inventory Objective is 10. 8 procurements and 4 installations were funded prior to FY17 and are reflected in BLI 2831. Inventory Objective decrease is due to clarity in ECP funding, FY18 funds were realigned within the program.
- (6) MP052 SPN-43 ECP Upgrades: Inventory Objective is 20. 15 procurements and 9 installations were funded prior to FY17 and are reflected in BLI 2831. Inventory Objective decrease is due to clarity in ECP funding, FY18 funds were realigned within the program.
- (7) MP060 SPN-43 Transmitter / Receiver Upgrade: Inventory Objective is 25. This cost element provides a major engineering upgrade of hardware and software to the AN/SPN-43 transmitter/receiver that will ensure safe and expeditious shipboard approach, departure, and marshal control to support fleet operations. This is the first such upgrade in over 2 decades. There are no manufacturers of compatible parts for the transmitter/receiver any longer. This upgrade addresses all major obsolescence issues. This item is currently in development and is reflected in the RDT&E Budget (PE 0604504N Air Control/Project Unit 0993). FY2018 will be the first procurement.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy															Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9							P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment							Aggregated Items Title: AN/SPN-46 (V)3 Radar Set Group PN413						
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring																				
AN/SPN-46 (V)3 Radar Set Group PN413 -- Procurement (8)	A		-	-	-	0.00	3	0.000	1,309K	3	3.926	1,348K	2	2.695	-	-	-	1,348K	2	2.695
AN/SPN-46 (V)3 Radar Set Group PN413 -- Installation	A		-	-	-	-	-	-	-	-	2.199	-	-	2.265	-	-	-	-	-	2.265
Subtotal: B Kits/Recurring			-	-	0.000	-	-	-	-	-	6.125	-	-	4.960	-	-	-	-	-	4.960
Support Cost																				
Integrated Logistic Support	A		-	-	-	-	-	-	-	-	0.049	-	-	0.047	-	-	-	-	-	0.047
Production Engineering	A		-	-	-	-	-	-	-	-	1.928	-	-	1.871	-	-	-	-	-	1.871
Acceptance Test & Evaluation	A		-	-	-	-	-	-	-	-	0.214	-	-	0.208	-	-	-	-	-	0.208
Subtotal: Support Cost			-	-	0.000	-	-	-	-	-	2.191	-	-	2.126	-	-	-	-	-	2.126
Total			-	-	0.000	-	-	0.000	-	-	8.316	-	-	7.086	-	-	0.000	-	-	7.086
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
Remarks: Models of Systems Affected: CVNs and selected shore sites Type Modification: Reliability  The equipment and installation costs on this P-3a are for individual modifications part of the AN/SPN-46 Life Cycle Extension program. The current AN/SPN-46 receiver houses both Ka and X-band components that are densely packaged and RF components that are obsolete technology and are no longer manufactured. The Radar Set Group re-packages the RF components using more modern and smaller components making the unit able to be supported and maintained. The inventory objective for this item is 13, of which 11 are OPN-funded and 2 SCN-funded.  Footnotes: (8) Inventory objective is 13, of which 11 are OPN-funded and 2 SCN-funded. Note - The auxiliary hardware required varies slightly depending on what past modifications have already been incorporated into the old chassis being upgraded to the new RSG. 6 of the 11 OPN funded were procured prior to FY2017 under BLI 2832 and 3 of those 6 were installed prior to FY2017 under BLI 2832.																				

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<b>Exhibit P-40a, Budget Item Justification For Aggregated Items:</b> FY 2018 Navy															<b>Date:</b> May 2017				
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 9								<b>P-1 Line Item Number / Title:</b> 2830 / Afloat ATC Equipment							<b>Aggregated Items Title:</b> AN/SPN-41 Transmitter MOD (LCE) PN416				

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring																				
AN/SPN-41 Transmitter Replacement (LCE) -- Procurement <sup>(9)</sup>	A		-	-	-	0.00	1	0.000	247,000.00	4	0.988	255,000.00	1	0.255	-	-	-	255,000.00	1	0.255
AN/SPN-41 Transmitter Replacement (LCE) -- Installation	A		-	-	-	-	-	-	-	-	0.025	-	-	0.076	-	-	-	-	-	0.076
Subtotal: B Kits/Recurring			-	-	0.000	-	-	-	-	-	1.013	-	-	0.331	-	-	-	-	-	0.331
Support Cost																				
Integrated Logistics -- Procurement	A		-	-	-	-	-	-	-	-	0.031	-	-	0.030	-	-	-	-	-	0.030
Integrated Logistics -- Installation	A		-	-	-	-	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-
Production Engineering	A		-	-	-	-	-	-	-	-	0.142	-	-	0.138	-	-	-	-	-	0.138
Subtotal: Support Cost			-	-	0.000	-	-	-	-	-	0.173	-	-	0.168	-	-	-	-	-	0.168
Total			-	-	0.000	-	-	0.000	-	-	1.186	-	-	0.499	-	-	0.000	-	-	0.499

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

**Remarks:**

Models of Systems Affected: CVNs, LHA/LHD class ships, and selected shore sites  
Type Modification: Modernization

AN/SPN-41 Transmitter MOD (LCE) PN416. The equipment and installation costs on this P-3a are for individual modification programs though it must be installed in conjunction with ECP SPN41-030 and SPN41-034 in order to be fully functional as part of the AN/SPN-41 Life Cycle Extension (LCE) program. The existing transmitter is an older technology two-channel Silicon Controlled Rectifier (SCR) line type modulator that is experiencing maintainability and obsolescence issues. The transmitter is the number one maintenance cost driver and system performance degrader. This change will improve logistic supportability and system maintainability. Line Repairable Units (LRUs) Circuit Card Assemblies (CCAs) and Built-In Test (BIT) capabilities will be incorporated in the transmitter thus reducing cost for shipboard repairs and maintenance.

**Footnotes:**

<sup>(9)</sup> AN/SPN-41 Transmitter MOD (LCE)inventory objective is 19. 14 procurements and 13 installations were funded through FY2016 on BLI 2832.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy															Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9							P-1 Line Item Number / Title: 2830 / Afloat ATC Equipment							Aggregated Items Title: AN/SPN-41 Coder Monitor (LCE) PN417						
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring																				
AN/SPN-41 Coder Monitor (LCE) -- Procurement <sup>(10)</sup>	A		-	-	-	0.00	1	0.000	207,000.00	1	0.207	207,000.00	1	0.207	-	-	-	207,000.00	1	0.207
AN/SPN-41 Coder Monitor (LCE) -- Installation	A		-	-	-	-	-	-	-	-	0.592	-	-	0.602	-	-	-	-	-	0.602
Subtotal: B Kits/Recurring			-	-	0.000	-	-	-	-	-	0.799	-	-	0.809	-	-	-	-	-	0.809
Support Cost																				
Integrated Logistic Support	A		-	-	-	-	-	-	-	-	0.107	-	-	0.032	-	-	-	-	-	0.032
Production Engineering	A		-	-	-	-	-	-	-	-	0.177	-	-	0.140	-	-	-	-	-	0.140
Subtotal: Support Cost			-	-	0.000	-	-	-	-	-	0.284	-	-	0.172	-	-	-	-	-	0.172
Total			-	-	0.000	-	-	0.000	-	-	1.083	-	-	0.981	-	-	0.000	-	-	0.981

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

**Remarks:**

Models of Systems Affected: CVNs, LHA/LHD class ships, and selected shore sites  
Type Modification: Modernization

AN/SPN-41 Coder Monitor (LCE) PN417. The equipment and installation costs on this P-3a are for individual modification programs though it must be installed in conjunction with ECP SPN41-030 and SPN41-031 in order to be fully functional as part of the AN/SPN-41/41A Life Cycle Extension program. This change will provide upgrades to AN/SPN-41/41A to improve Operational Availability (Ao) by addressing numerous part obsolescence issues germane to the current aging system. The change will also provide digital interfaces with other shipboard systems including the Joint Precision Approach Landing System (JPALS), and extend the service life of the AN/SPN-41/41A.

**Footnotes:**

<sup>(10)</sup> AN/SPN-41 Coder Monitor (LCE) inventory objective is 22 of which 20 procurements and 19 installations were funded through FY2016 on BLI 2832.



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<b>Exhibit P-40a, Budget Item Justification For Aggregated Items:</b> FY 2018 Navy															<b>Date:</b> May 2017				
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 9								<b>P-1 Line Item Number / Title:</b> 2830 / Afloat ATC Equipment							<b>Aggregated Items Title:</b> AN/SPN-41 Electronic Drawer Assembly (LCE) PN418				

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring																				
AN/SPN-41 Electronic Drawer Assembly (LCE) -- Procurement (11)	A		-	-	-	0.00	2	0.000	428,000.00	4	1.712	-	-	-	-	-	-	-	-	-
AN/SPN-41 Electronic Drawer Assembly (LCE) -- Installation	A		-	-	-	-	-	-	-	-	0.348	-	-	1.392	-	-	-	-	-	1.392
Subtotal: B Kits/Recurring			-	-	0.000	-	-	-	-	-	2.060	-	-	1.392	-	-	-	-	-	1.392
Support Cost																				
Integrated Logistics	A		-	-	-	-	-	-	-	-	0.086	-	-	-	-	-	-	-	-	-
Production Engineering	A		-	-	-	-	-	-	-	-	0.388	-	-	-	-	-	-	-	-	-
Subtotal: Support Cost			-	-	0.000	-	-	-	-	-	0.474	-	-	-	-	-	-	-	-	-
Total			-	-	0.000	-	-	0.000	-	-	2.534	-	-	1.392	-	-	0.000	-	-	1.392

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

**Remarks:**

Models of Systems Affected: CVNs, LHA/LHD class ships, and selected shore sites  
Type Modification: Modernization

AN/SPN-41 Electronic Drawer Assembly (LCE) PN418. The equipment and installation costs on this P-3a are for individual modification programs though it must be installed in conjunction with ECP SPN41-031 and SPN41-034 in order to be fully functional as part of the AN/SPN-41 Life Cycle Extension program. This change replaces obsolete analog interfaces with required digital interfaces to connect with other shipboard systems including the Joint Precision Approach Landing System (JPALS).

**Footnotes:**

<sup>(11)</sup> AN/SPN-41 Electronic Drawer Assembly (LCE) inventory objective is (20) with 16 procurements and 14 installations occurring in PY - FY16 are funded in BLI 2832. Inventory objective changed from 19 to 20 due to one of the original EDA units that was used, as intended, for initial system testing (including shock and vibe). When completed this type testing usually results in a unit that is damaged beyond acceptable repair. It should not have been counted as an End Item for installation in the Fleet once testing was completed.

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<b>Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy</b>												<b>Date:</b> May 2017							
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 9						<b>P-1 Line Item Number / Title:</b> 2830 / Afloat ATC Equipment						<b>Aggregated Items Title:</b> AN/SPN-41 Radome Hardware Upgrade (LCE) PN419							

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring																				
AN/SPN-41 Radome Hardware Upgrade -- Procurement <sup>(12)</sup>	A		-	-	-	0.00	3	0.000	420,000.00	3	1.260	-	-	-	-	-	-	-	-	-
AN/SPN-41 Radome Hardware Upgrade -- Installation	A		-	-	-	-	-	-	-	-	0.120	-	-	0.121	-	-	-	-	-	0.121
Subtotal: B Kits/Recurring			-	-	0.000	-	-	-	-	-	1.380	-	-	0.121	-	-	-	-	-	0.121
Support Cost																				
Production Engineering	A		-	-	-	-	-	-	-	-	0.315	-	-	-	-	-	-	-	-	-
Logistics	A		-	-	-	-	-	-	-	-	0.034	-	-	-	-	-	-	-	-	-
Subtotal: Support Cost			-	-	0.000	-	-	-	-	-	0.349	-	-	-	-	-	-	-	-	-
Total			-	-	0.000	-	-	0.000	-	-	1.729	-	-	0.121	-	-	0.000	-	-	0.121

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

**Remarks:**

Models of Systems Affected: CVNs, LHA/LHD class ships, and selected shore sites  
Type Modification: Modernization

AN/SPN-41 Radome Hardware Upgrade (LCE) PN419. The equipment and installation costs on this P-3a are for individual modification programs. This is part of the AN/SPN-41 Life Cycle Extension program. This change will improve overall AN/SPN-41/41A Operational Availability (Ao) by addressing extreme environmental issues currently being experienced by the systems in the field. This change increases overall thermal resistance while decreasing solar absorptivity thereby reducing the ambient operating temperature for the equipment inside the radome, prolonging component life and reducing failure rates.

**Footnotes:**

<sup>(12)</sup> AN/SPN-41 Radome Hardware Upgrade inventory objective is 18. 14 procurements and 11 installations were funded through FY2016 on BLI 2832. The inventory objective increased from 17 to 18 due to one of the original Radomes that was used, as intended, for initial system testing (including shock and vibe). When completed this type testing usually results in a unit that is damaged beyond acceptable repair. It should not have been counted as an End Item for installation in the Fleet once testing was completed.

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 9			<b>P-1 Line Item Number / Title:</b> 2830 / Afloat ATC Equipment		<b>Modification Number / Title:</b> 2 / ACLS MOD KITS SUMMARY PN408	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	0.000	0.000	8.822	12.064	0.000	12.064
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	0.000	0.000	8.822	12.064	0.000	12.064
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
<b>Total Obligation Authority</b> <i>(\$ in Millions)</i>	<b>0.000</b>	<b>0.000</b>	<b>8.822</b>	<b>12.064</b>	<b>0.000</b>	<b>12.064</b>
<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>	-	-	-	-	-	-
<b>Description:</b> The equipment and installation costs on this P-3a are for individual modification programs for AN/SPN-35/41/46 systems. Funding has also been provided for upgrades addressing broadened cyber-security requirements to remain compliant with software cyber-security directives and Information Assurance mandates. Line item "Engineering Changes to Correct Deficiencies" captures anticipated emergent engineering changes. PMA213 configuration control board approves inventory objectives. Contract and Delivery dates are various.						

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 9			<b>P-1 Line Item Number / Title:</b> 2830 / Afloat ATC Equipment		<b>Modification Number / Title:</b> 2 / ACLS MOD KITS SUMMARY PN408	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Models of Systems Affected:</b> CVNs, LHA/LHD class ship, and selected shore sites			<b>Modification Type:</b> Modernization		<b>Related RDT&amp;E PEs:</b>	
<b>Financial Plan</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
<b>Procurement</b>						
<b>Modification Item 1 of 1:</b> ACLS MOD KITS SUMMARY PN408						
B Kits						
Non-Recurring						
1.1.1) AN/SPN-46 TS-4176 - NonOrganic	- / -	4 / 0.000	4 / 0.800	1 / 0.200	- / -	1 / 0.200
1.1.3) AN/SPN-46 COTS Refresh - NonOrganic <sup>(13)</sup>	- / -	- / -	2 / 0.510	20 / 5.000	- / -	20 / 5.000
1.1.4) AN/SPN-46 Obsolescence - NonOrganic	- / -	- / -	4 / 0.876	- / -	- / -	- / -
1.1.14) AN/SPN-35 Receiver Transmitter Mod - NonOrganic	- / -	2 / 0.000	2 / 0.056	1 / 0.028	- / -	1 / 0.028
<b>Subtotal: Non-Recurring</b>	- / 0.000	- / -	- / 2.242	- / 5.228	- / -	- / 5.228
<b>Subtotal: ACLS MOD KITS SUMMARY PN408</b>	- / -	6 / 0.000	12 / 2.242	22 / 5.228	- / -	22 / 5.228
<b>Subtotal: Procurement, All Modification Items</b>	- / 0.000	- / -	- / 2.242	- / 5.228	- / -	- / 5.228
<b>Support (All Modification Items)</b>						
2.1) Engineering Changes to Correct Deficiencies ECO SPN-46	- / -	- / -	- / 0.600	- / 0.469	- / -	- / 0.469
2.2) Engineering Changes to Correct Deficiencies ECO SPN-35/41	- / -	- / -	- / 0.589	- / 1.127	- / -	- / 1.127
2.3) Integrated Logistics Support	- / -	- / -	- / 0.765	- / 0.780	- / -	- / 0.780
2.4) Production Engineering <sup>(14)</sup>	- / -	- / -	- / 3.533	- / 3.518	- / -	- / 3.518
2.5) Quality Assurance	- / -	- / -	- / 0.102	- / -	- / -	- / -
2.6) Acceptance, Test and Evaluation	- / -	- / -	- / 0.030	- / -	- / -	- / -
<b>Subtotal: Support</b>	- / 0.000	- / -	- / 5.619	- / 5.894	- / -	- / 5.894
<b>Installation</b>						
<b>Modification Item 1 of 1:</b> ACLS MOD KITS SUMMARY PN408	- / 0.000	- / 0.000	- / 0.961	- / 0.942	- / 0.000	- / 0.942
<b>Subtotal: Installation</b>	- / 0.000	- / -	- / 0.961	- / 0.942	- / -	- / 0.942
<b>Total</b>						
<b>Total Cost (Procurement + Support + Installation)</b>	<b>0.000</b>	<b>0.000</b>	<b>8.822</b>	<b>12.064</b>	<b>0.000</b>	<b>12.064</b>

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy							<b>Date:</b> May 2017						
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 9					<b>P-1 Line Item Number / Title:</b> 2830 / Afloat ATC Equipment				<b>Modification Number / Title:</b> 2 / ACLS MOD KITS SUMMARY PN408				
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :							<b>MDAP/MAIS Code:</b>						
<b>Modification Item 1 of 1:</b> ACLS MOD KITS SUMMARY PN408													
<b>Manufacturer Information</b>													
Manufacturer Name: NAWCAD						Manufacturer Location: Patuxent River, MD							
Administrative Leadtime (in Months): 3						Production Leadtime (in Months): 12							
<b>Dates</b>		<b>FY 2016</b>			<b>FY 2017</b>			<b>FY 2018</b>					
Contract Dates					Dec 2016			Dec 2017					
Delivery Dates					Dec 2017			Dec 2018					
<b>Installation Information</b>													
<b>Method of Implementation:</b> AIT (Alteration Installation Team):: Installation Name: ACLS Mod Kits													
<b>Installation Cost</b>		<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>	
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total 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 2016		- / -		- / -		6 / 0.961		- / -		- / -		- / -	
FY 2017		- / -		- / -		- / -		12 / 0.942		0 / 0.000		12 / 0.942	
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -	
Total		- / -		- / -		6 / 0.961		12 / 0.942		0 / 0.000		12 / 0.942	
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	-	-	-	-	-	-	4	2	-	-	6	6	-
Out	-	-	-	-	-	-	4	2	-	-	6	6	-
<b>Footnotes:</b>													
<p>(13) The variance in install costs from year to year is due to the makeup of the different equipment being installed each year, the different hull types receiving modifications, and the different Design Services Allocation (DSA) and install costs from different locations depending on where modifications are performed. ****Quantity growth from 2 to 20 is a result of multiple COTS updates required on different parts of the SPN-46 systems on board the CVN vessels (11) supported, to include: 1. Modifying/updating the existing ICLS Data Link (Ship-to-Aircraft) to address inherent Cyber Security issues as well as mitigate degraded Beacon signal and aging equipment problems. 2. Identify and replace the current SPN-46 EGI GPS units aboard ship which are experiencing extremely high failure issues and low reliability throughout the Fleet. 3. Establish and purchase an alternate cooling system for the SPN-46 to replace the Vortex Chiller currently in use which has supportability issues in the Fleet. 4. Replace the SPN-46 Receiver BIT to improve system checks and eliminate the need for the aging test set which now performs these duties.</p> <p>(14) Several SPN-46 subassemblies are rapidly becoming unsustainable due primarily to component obsolescence. Increased production engineering will be required in support of future, approved ECP efforts to mitigate these issues and keep the SPN-46 viable to support Warfighter ACLS operations.</p>													

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 9			<b>P-1 Line Item Number / Title:</b> 2830 / Afloat ATC Equipment		<b>Modification Number / Title:</b> 8 / AN/SPN-46 Block IV (PN420)	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	0.000	0.000	1.329	13.811	0.000	13.811
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	0.000	0.000	1.329	13.811	0.000	13.811
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
<b>Total Obligation Authority</b> <i>(\$ in Millions)</i>	<b>0.000</b>	<b>0.000</b>	<b>1.329</b>	<b>13.811</b>	<b>0.000</b>	<b>13.811</b>
<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>	-	-	-	-	-	-
<p><b>Description:</b>  The AN/SPN-46 Block IV Precision Approach Landing System (PALS) Block IV upgrade is designed to correct known obsolescence issues in the antenna pedestal, 50KW Ka band modulator/transmitter, and various Circuit Card Assemblies (CCAs). This effort is designed to extend the supportability of the AN/SPN-46 beyond its current design life that is exceeded. If this effort is not accomplished, replacement parts will not be available to support the fielded AN/SPN-46 systems, thereby, negatively affecting Operational Availability (Ao) and safety of flight on the aircraft carrier. The inventory objective for this item is 16.</p> <p>[AN/SPN-46 Block IV] The AN/SPN-46(V) Precision Approach Landing System (PALS) provides aircraft position information to the Final Control Workstation in Carrier Air Traffic Control Center (CATCC), and provides the pilot with the capability of selecting a fully automatic, instrument landing, or talk down approach. This system is certified to provide the carrier with an all-weather flight operational capability. This system is operational in all weather conditions with minimal degradation due to sea state. Initial Operational Capability (IOC) of the AN/SPN-46(V) was in 1985, and the system has exceeded its design life. There are significant obsolescence issues. Block IV is designed to correct known obsolescence issues in the antenna pedestal, 50KW Ka band modulator/transmitter, and various Circuit Card Assemblies (CCAs). This effort is designed to extend the supportability of the AN/SPN-46(V) to the 2040 timeframe. If this effort is not accomplished, replacement parts will not be available to support the system, thereby, negatively affecting Operational Availability (Ao) and safety of flight on the aircraft carrier. The inventory objective for this item is 16. PMA-213 configuration control board approves inventory objectives.</p>						

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 9			<b>P-1 Line Item Number / Title:</b> 2830 / Afloat ATC Equipment		<b>Modification Number / Title:</b> 8 / AN/SPN-46 Block IV (PN420)	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Models of Systems Affected:</b> CVNs and selected shore sites		<b>Modification Type:</b> TBD			<b>Related RDT&amp;E PEs:</b>	
<b>Financial Plan</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
<b>Procurement</b>						
<b>Modification Item 1 of 1:</b> AN/SPN-46 Block IV (PN420)						
B Kits						
Recurring						
2.1.1) AN/SPN-46 Block IV - NonOrganic	- / -	- / -	- / -	2 / 8.058	- / -	2 / 8.058
<b>Subtotal: Recurring</b>	<b>- / 0.000</b>	<b>- / -</b>	<b>- / -</b>	<b>- / 8.058</b>	<b>- / -</b>	<b>- / 8.058</b>
<b>Subtotal: AN/SPN-46 Block IV (PN420)</b>	<b>- / -</b>	<b>- / -</b>	<b>- / -</b>	<b>2 / 8.058</b>	<b>- / -</b>	<b>2 / 8.058</b>
<b>Subtotal: Procurement, All Modification Items</b>	<b>- / 0.000</b>	<b>- / -</b>	<b>- / -</b>	<b>- / 8.058</b>	<b>- / -</b>	<b>- / 8.058</b>
<b>Support (All Modification Items)</b>						
3.1) Integrated Logistics Support <sup>(15)</sup>	- / -	- / -	- / 0.514	- / 2.000	- / -	- / 2.000
3.2) Production Engineering <sup>(16)</sup>	- / -	- / -	- / 0.815	- / 3.503	- / -	- / 3.503
3.3) Quality Assurance	- / -	- / -	- / -	- / 0.250	- / -	- / 0.250
<b>Subtotal: Support</b>	<b>- / 0.000</b>	<b>- / -</b>	<b>- / 1.329</b>	<b>- / 5.753</b>	<b>- / -</b>	<b>- / 5.753</b>
<b>Installation</b>						
<b>Modification Item 1 of 1:</b> AN/SPN-46 Block IV (PN420)	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
<b>Subtotal: Installation</b>	<b>- / 0.000</b>	<b>- / -</b>	<b>- / -</b>	<b>- / -</b>	<b>- / -</b>	<b>- / -</b>
<b>Total</b>						
<b>Total Cost (Procurement + Support + Installation)</b>	<b>0.000</b>	<b>0.000</b>	<b>1.329</b>	<b>13.811</b>	<b>0.000</b>	<b>13.811</b>

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy										<b>Date:</b> May 2017			
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 9					<b>P-1 Line Item Number / Title:</b> 2830 / Afloat ATC Equipment					<b>Modification Number / Title:</b> 8 / AN/SPN-46 Block IV (PN420)			
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :								<b>MDAP/MAIS Code:</b>					
<b>Modification Item 1 of 1:</b> AN/SPN-46 Block IV (PN420)													
<b>Manufacturer Information</b>													
Manufacturer Name: TBD								Manufacturer Location: TBD					
Administrative Leadtime ( <i>in Months</i> ): 4								Production Leadtime ( <i>in Months</i> ): 12					
<b>Dates</b>		<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
Contract Dates										Jan 2018			
Delivery Dates										Jan 2019			
<b>Installation Information</b>													
<b>Method of Implementation:</b> Alteration Installation Team AIT:: Installation Name: AN/SPN-46 Block IV													
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	-	-	-	-	-	-	-	-	-	-	-	-	-
Out	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Footnotes:</b>													
(15) FY17 ILS funding is required support leading up to production starting in FY18.													
(16) Production Engineering costs are higher from FY 2017 (\$0.815M) to FY 2018 (\$3.5M) due to Engineering Change Proposal (ECP) that will require extensive system integration, drawings, acceptance testing, additional time and effort, and packaging and preparations for install during the first procurement year.													



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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy										<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment							<b>P-1 Line Item Number / Title:</b> 2831 / Shipboard Air Traffic Control					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A				<b>Program Elements for Code B Items:</b> N/A				<b>Other Related Program Elements:</b> N/A				
<b>Line Item MDAP/MAIS Code:</b> N/A												
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>To Complete</b>	<b>Total</b>
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	208.925	9.346	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	218.271
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	208.925	9.346	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	218.271
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>208.925</b>	<b>9.346</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>-</b>	<b>218.271</b>
<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> )	-	0.128	-	-	-	-	-	-	-	-	-	0.128
Flyaway Unit Cost ( <i>\$ in Dollars</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ( <i>\$ in Dollars</i> )	-	-	-	-	-	-	-	-	-	-	-	-

**Description:**  
Beginning in FY 2017, effort continues in OPN Line Item 2830, Afloat ATC Equipment

DESCRIPTION: Shipboard Air Traffic Control (SATC) systems are responsible for safe and expeditious control of air traffic within 50 Nautical Miles of a ship. SATC systems include the air traffic surveillance radar, AN/SPN-43, and the air traffic central tracking and control system, AN/TPX-42, which has two major configurations: Carrier Air Traffic Control Center-Direct Altitude and Identity Readout (CATCC-DAIR) and Amphibious Air Traffic Control Center-Direct Altitude and Identity Readout (AATCC-DAIR). Both DAIR systems use AN/SPN-43 and Identification Friend or Foe (IFF) inputs to track and control aircraft. Obsolescence problems are being addressed through various upgrades in a phased approach. The major upgrades include a series of AN/TPX-42 modification kits requiring various combinations of AN/UYK-44 processor rehost, track processor upgrade, AN/UYQ-70 console, audio recorder, flat panel display, and other components to bring the predecessor system to AN/TPX-42A(V)14 with field changes 1, 2, 3, 4, and 5 configuration and eventually to the Air Traffic Control Multifunction Console configuration. The AN/SPN-43 radar system is required for the service-life of CVN68-CVN77 & LHA/LHD class ships with no replacement system identified.

Installing Agent: Shipyards and Alteration Installation Teams.  
When installation to be made: Selected Restricted Availability (SRA) / Restricted Availability (RAV).  
Ships or facilities to receive the equipment: CVNs, LHD/LHAs, Software Support Activity (NAWCAD, St Inigoes, MD), Integrated Combat System Test Facility (San Diego, CA), Landing Systems Test Facility (NAWCAD, Patuxent River, MD), and training sites.

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy										<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment							<b>P-1 Line Item Number / Title:</b> 2832 / Automatic Carrier Landing System					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A				<b>Program Elements for Code B Items:</b> N/A				<b>Other Related Program Elements:</b> N/A				
<b>Line Item MDAP/MAIS Code:</b> N/A												
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>To Complete</b>	<b>Total</b>
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	114.809	21.281	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	136.090
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	114.809	21.281	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	136.090
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>114.809</b>	<b>21.281</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>-</b>	<b>136.090</b>
<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> )	-	2.382	-	-	-	-	-	-	-	-	-	2.382
Flyaway Unit Cost ( <i>\$ in Dollars</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ( <i>\$ in Dollars</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<p><b>Description:</b> Beginning in FY 2017, effort continues in OPN Line Item 2830, Afloat ATC Equipment</p> <p>The Automatic Carrier Landing System (ACLS) provides the primary precision electronic guidance for landing aircraft under all weather conditions on CVNs, LHAs, LHDs and selected Naval Air Stations. Many of the components in the system have been in service for more than twenty years. This program funds maintainability, reliability and supportability improvements to existing equipment components that can no longer be maintained and supported, as well as items providing upgraded operational capability. AN/SPN-46 Life Cycle Extension (LCE) sustainment efforts will be supplemented with other changes, as necessary, to offset obsolescence and supportability issues, the need for Commercial Off-The-Shelf (COTS) refresh, and to support system interface requirements. LCE efforts include Radar Control Group Unit 19, Embedded Global Positioning System and Inertial Navigation System (EGI) replacement, Computer Group replacement, Radar Receiver set replacement, Peripheral Display replacement, and Common Console replacement efforts. AN/SPN-41 LCE sustainment efforts will be supplemented with other changes, as necessary, to offset obsolescence and supportability issues and to support systems interface requirements. Additionally, the AN/SPN-41 system is the Joint Precision Approach and Landing System (JPALS) back-up system.</p> <p>Installing Agent: Shipyards and Alteration Installation Teams (AITs). Ships or facilities to receive equipment: CVNs, LHAs, LHDs, the In-Service Engineering Agent (ISEA-NAWCAD, St. Inigoes), selected shore sites and the training site. Note: Prior year total amount only accounts for items funded in the current FYDP.</p>												
<p><b>Justification:</b> Funding for FY2017 and beyond has been realigned to Afloat ATC Equipment (BLI 2830).</p>												

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**Exhibit P-40, Budget Line Item Justification:** FY 2018 Navy **Date:** May 2017

<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment	<b>P-1 Line Item Number / Title:</b> 2840 / National Air Space System
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<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A	<b>Program Elements for Code B Items:</b> N/A	<b>Other Related Program Elements:</b> N/A
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**Line Item MDAP/MAIS Code:** 537

Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	357.164	25.621	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	382.785
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	357.164	25.621	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	382.785
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority (<i>\$ in Millions</i>)</b>	<b>357.164</b>	<b>25.621</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>-</b>	<b>382.785</b>
<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> )	-	1.169	-	-	-	-	-	-	-	-	-	1.169
Flyaway Unit Cost ( <i>\$ in Dollars</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ( <i>\$ in Dollars</i> )	-	-	-	-	-	-	-	-	-	-	-	-

## Description:

The Joint DoD/Federal Aviation Administration (FAA) National Airspace System (NAS) Modernization (MOD) program upgrades the DoD Air Traffic Control (ATC) systems at Approach Control Facilities in concert with the FAA's upgrade of the National ATC System. These funds will procure ATC systems for the Navy/Marine ATC facilities.

The Air Force is the DoD lead activity for the Joint Acquisition Program. The Joint Program Office is located at Hanscom AFB, MA.

The NAS Mod program received a full rate production decision on 7 June 2005 and is in the production and deployment phase following Milestone C.

\*Prior years total includes funding associated with cost elements no longer funded by this program.

Funding for procurements, support costs and associated installs for FY2017 and beyond have been realigned to Ashore ATC Equipment (BLI 2820).

## Justification:

The Federal Aviation Administration (FAA) began the Next Generation Air Transportation System initiative in FY2008. A major component of this capability is Automatic Dependent Surveillance Broadcast, which will provide aircraft position information to augment ground-based radar. Existing DoD Air Traffic Control (ATC) facilities interface with FAA's facilities, therefore the military must maintain interoperability and retain vital special-use airspace for combat readiness training. The DoD Advanced Automation System must be upgraded to meet this requirement.

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy										<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment							<b>P-1 Line Item Number / Title:</b> 2845 / Fleet Air Traffic Control Systems					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A				<b>Program Elements for Code B Items:</b> N/A				<b>Other Related Program Elements:</b> N/A				
<b>Line Item MDAP/MAIS Code:</b> N/A												
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>To Complete</b>	<b>Total</b>
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	203.430	8.249	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	211.679
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	203.430	8.249	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	211.679
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>203.430</b>	<b>8.249</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>-</b>	<b>211.679</b>
<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> )	-	0.699	-	-	-	-	-	-	-	-	-	0.699
Flyaway Unit Cost ( <i>\$ in Dollars</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ( <i>\$ in Dollars</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<p><b>Description:</b></p> <p>NAVAIR provides shore based Air Traffic Control (ATC) terminal facilities and equipment that are required in joint efforts to efficiently and safely monitor and direct military and commercial air traffic in national and international air space. Many of these systems are required to interface through automated means with the Federal Aviation Administration (FAA). Additionally, NAVAIR has material support responsibility for Air Navigation Aid Systems, Mobile ATC Equipment, Special Instrumentation Systems, and Ancillary Equipment used at Navy and Marine Corps Aviation Shore activities in the continental United States and overseas.</p> <p>Engineering Change Proposal (ECP)/Operational Capability Improvement Request (OCIR) modernization (MR069) - The ECP/OCIR program provides for the procurement and/or modification of critically needed communications, radar, displays, data processors, and other electronic systems/equipment at Navy/Marine Corps ATC facilities worldwide. ECP/OCIR procurements replace and modernize costly-to-maintain systems and equipment in order to increase ATC efficiency and safety, and reduce total ownership costs.</p> <p>Communications Systems Upgrade Program (MR408) - This program procures and installs advanced commercial state-of-the-art ATC voice switching and recording/reproduction equipment.</p> <p>Fiber Optic Intersite System (FOIS) Upgrade Program (MR430) - FOIS is required for Precision Approach Radar (PAR) operations and the AN/FAC-6(V)4 FOIS is required for ATC voice communications at Naval and Marine Corps ATC facilities. This program ensures continued capability of these critical ATC systems.</p> <p>UHF/VHF Transceiver Replacement Program (MR440) - This program modernizes aging Navy and Marine Corps UHF/VHF Transceivers that are the central core of all ATC emergency communications.</p> <p>Emergency Communication System (ECS) Upgrade Program (MR445) - This program modernizes obsolete and unsupportable ECS equipment. Voice Switches, Recorders, Reproducers, Uninterruptable Power Supplies, and Built-In Test Equipment will be replaced with modern, supportable components.</p> <p>Recorder Upgrade Program (MR455) - This program procures and installs state-of-the-art ATC recording/reproducing equipment which will be used to replace aging ATC recorder systems through participation in the FAA's Next Generation Recorder Program.</p> <p>Air Field Lighting Control System (AFLCS) (MR510) - This program modernizes obsolete and unsupportable AFLCS equipment which will be replaced with modern, supportable components.</p>												

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment		<b>P-1 Line Item Number / Title:</b> 2845 / Fleet Air Traffic Control Systems
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A	<b>Program Elements for Code B Items:</b> N/A	<b>Other Related Program Elements:</b> N/A
<b>Line Item MDAP/MAIS Code:</b> N/A		
<p>Fleet Area Control and Surveillance Facilities (FACSFAC) Tech Refresh (MR515) - This program modernizes obsolete and unsupportable Commercial Off The Shelf (COTS) equipment in the AN/FYK-39 FACSFAC Air Control and Tracking System (FACTS). FACSFAC Tech Refresh will be funded under the NASMOD STARS program under Air Traffic Equipment (ATC) BLI 2820 beginning in FY2016.</p> <p>Operational Communication System (OCS)/Emergency Communication System (ECS) Air Traffic Control (ATC) Recorder replacement program (MR520), through participation in the Federal Aviation Administration's (FAA) ATC recorder replacement program will replace aging and obsolete ATC OCS and ECS ATC recorders with state of the art ATC recording/reproducing technology.</p> <p>* Prior year total amount accounts for items funded in the current FYDP.</p> <p>Funding for procurements, support costs and associated installs for FY17 and beyond have been realigned to Ashore ATC Equipment (BLI 2820).</p>		
<b>Justification:</b> The basis for the budget request is to continue modernizing aging Navy and Marine Corps ATC facilities and equipment in order to safely monitor and direct military and commercial air traffic in national and international air space. This equipment must continue to interface through automated means with the Federal Aviation Administration.		



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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy										<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment							<b>P-1 Line Item Number / Title:</b> 2846 / Landing Systems					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A				<b>Program Elements for Code B Items:</b> N/A				<b>Other Related Program Elements:</b> N/A				
<b>Line Item MDAP/MAIS Code:</b> N/A												
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>To Complete</b>	<b>Total</b>
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	94.941	11.910	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	106.851
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	94.941	11.910	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	106.851
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>94.941</b>	<b>11.910</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>-</b>	<b>106.851</b>
<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> )	-	-	-	-	-	-	-	-	-	-	-	-
<p><b>Description:</b></p> <p>The Chief of Naval Operations (CNO) tasked Naval Air Systems Command (NAVAIR) with the requirement to provide shore based Air Traffic Control (ATC) terminal facilities and equipment that are required to efficiently and safely monitor and direct military and commercial air traffic in national and international air space. Many of these systems are required to interface through automated means with the Federal Aviation Administration (FAA). Additionally, NAVAIR has material support responsibility for Air Navigation Aid Systems, Mobile ATC Equipment, Special Instrumentation Systems, and Ancillary Equipment used for ATC and Landing Systems (LS) by the Navy and Marine Corps. This Landing Systems program, in conjunction with the Fleet ATC Systems and the National Airspace System Modernization program provide the three pillars by which the Navy supports and meets established requirements to modernize and ensure reliable, safe and effective operations of ATC &amp; LS used at the Navy and Marine Corps air stations worldwide.</p> <p>Landing Systems budget provides funding to modernize and ensure the reliability of Precision Approach Radars (PAR), Tactical Air Navigation (TACAN) systems, Instrument Landing System (ILS), and other air navigation aids used by the Navy and Marine Corps.</p> <p>PAR Commercial-off-the-shelf (FPN-68) Upgrade replaces obsolete PAR systems (FPN-63) continuing fleet shore based Precision Approach capability. Additionally PAR (FPN-63) ECP's consist of the Modulator Board Upgrade ECP, the Antenna Upgrade ECP, the Configuration Upgrade ECP, the Turntable Upgrade ECP, the Fiber Optic Inter-site System (FOIS) ECP, the Angle Voltage Generator (AVG) Upgrade ECP, and the Technology Refresh Upgrade ECP currently known as PAR COTs. These ECPs will extend the life of the FPN-63 until they are replaced, by the FPN-68.</p> <p>TACAN Upgrade ECPs update old technology and extend the service life of the TACAN. The TACAN sustainment consists of the Antenna Upgrade ECP, the Shelter Upgrade ECP and the Beacon Upgrade ECP.</p> <p>ILS Systems provide the Navy and Marine Corps with a self-contained Precision Landing capability at selected Air Stations, to meet fleet requirements for safe aircraft recovery.</p> <p>Funding for Procurements, support cost and associated installs for FY2017 and beyond have been realigned to Ashore ATC Equipment (BLI 2820).</p>												
<p><b>Justification:</b></p> <p>Prior years total amount only accounts for items funded in the current FYDP. Funding for Procurements, support cost and associated installs for FY2017 and beyond have been realigned to Ashore ATC Equipment (BLI 2820).</p>												

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**Exhibit P-40, Budget Line Item Justification:** FY 2018 Navy **Date:** May 2017

<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment	<b>P-1 Line Item Number / Title:</b> 2851 / ID Systems
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<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A	<b>Program Elements for Code B Items:</b> N/A	<b>Other Related Program Elements:</b> 0604777N
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**Line Item MDAP/MAIS Code:** N/A

Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	268.553	29.676	22.177	21.239	0.000	21.239	26.792	26.707	26.022	26.539	284.876	732.581
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	268.553	29.676	22.177	21.239	0.000	21.239	26.792	26.707	26.022	26.539	284.876	732.581
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority (<i>\$ in Millions</i>)</b>	<b>268.553</b>	<b>29.676</b>	<b>22.177</b>	<b>21.239</b>	<b>0.000</b>	<b>21.239</b>	<b>26.792</b>	<b>26.707</b>	<b>26.022</b>	<b>26.539</b>	<b>284.876</b>	<b>732.581</b>
<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> )	-	0.140	0.076	0.146	-	0.146	0.148	0.189	0.173	0.154	Continuing	Continuing
Flyaway Unit Cost ( <i>\$ in Dollars</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ( <i>\$ in Dollars</i> )	-	-	-	-	-	-	-	-	-	-	-	-

## Description:

FY 2018 funding request reflect a reduction of \$3.074 million to account for the availability of prior year funds.

The Identification Systems program funds procurements, installations, and certifications for the following systems: AN/UPX-37, AN/UPX-41, and AN/UPX-45 Digital Interrogators, AN/APX-118 and AN/APX-123 Common Digital Transponder, AN/UPX-29 Interrogator System (comprised of the Interrogator Set AN/UPX-24, OE-120()/UPX Antenna Group, and Mark XII or Mark XIIA equipment), Mark XIIA Mode 5, Identification Friend Foe (IFF) support equipment, AN/UPX-34A Radar Track Discriminator System, and AN/URN-25 Ship Tactical Air Navigation.

The Air Traffic Control Radio Beacon System, IFF, Mark XII/XIIA System AIMS is a DoD directed tri-service program designed to provide a universal air traffic control radar beacon system compatible with the National Airspace System Program. It provides a secure identification system for military use on all combatant ships, selected auxiliaries, patrol craft, and selected Coast Guard ships by allowing all friendly forces to identify each other and neutral forces. The Mark XII/XIIA system supports several missions such as anti-air warfare, aerial bombardment, and naval attack.

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy								<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment						<b>P-1 Line Item Number / Title:</b> 2851 / ID Systems				
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A			<b>Program Elements for Code B Items:</b> N/A			<b>Other Related Program Elements:</b> 0604777N				
<b>Line Item MDAP/MAIS Code:</b> N/A										
Exhibits Schedule					Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 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	Mark XII/ Mark XIIA Common Digital Transponder (MT032)				- / 56.794	- / 0.679	- / 1.209	- / 1.218	- / 0.000	- / 1.218
P-40a	AN/UPX 24 (V) Mode S (MT035)				- / 29.773	- / 2.085	- / 5.059	- / 6.025	- / 0.000	- / 6.025
P-40a	TACAN System Upgrade (MT038)				- / 21.249	- / 4.927	- / 1.127	- / 0.000	- / 0.000	- / 0.000
P-40a	Mode S Digital Interrogator (MT040)				- / 24.767	- / 7.676	- / 1.898	- / 3.442	- / 0.000	- / 3.442
P-3a	3 / Mark XII Mode 5 (MT037) (Capability Improvement)				- / 135.970	- / 14.309	- / 12.884	- / 10.554	- / 0.000	- / 10.554
<b>P-40</b>	<b>Total Gross/Weapon System Cost</b>				<b>- / 268.553</b>	<b>- / 29.676</b>	<b>- / 22.177</b>	<b>- / 21.239</b>	<b>- / 0.000</b>	<b>- / 21.239</b>

\*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 purpose of the AN/UPX-37 and AN/UPX-41(C) Digital Interrogators (DI) and AN/APX-118 and AN/APX-123 Common Digital Transponder (CXP) program is to replace 20-25 year old hardware and software with reliability and maintenance enhancements through the use of Commercial Off The Shelf / Non Developmental Item COTS/NDI form/fit/function improvements. Incorporation of the Mark XIIA (Mode 5) capability occurred in FY08 and changes nomenclatures from AN/UPX-37 and AN/APX-118(V) to AN/UPX-41(C) and AN/APX-123(V), respectively. Incorporation of the Mark XIIA (Mode S) capability into the AN/UPX-41(C) DI is currently ongoing and will change the DI nomenclature from AN/UPX-41(C) to AN/UPX-45(C).

AN/UPX-24(V) Field Changes will provide hardware updates to accommodate Mode 5 and Mode S functionality in fielded systems. AN/UPX-24(V) Mode S upgrades will provide improved shipboard combat identification by increasing the probability of identification of commercial and neutral aircraft. The AN/UPX-29(V) Interrogator System is deployed on high capability, state of the art surface platforms that require IFF operational performance beyond that provided by a standard Mark XII system for combat identification. Mark XIIA Mode 5 and Mode S provide improved secure cooperative combat identification throughout IFF. Mode 5 and Mode S are product improvements designed to be installed through engineering changes to digital Mark XII interrogators and transponders including AN/APX-118/123(V), AN/UPX-37/41(C), and AN/UPX-24(V).

Tactical Air Navigation (TACAN) Beacon Upgrade funds a replacement of 1970s technology and eliminates pending parts obsolescence.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy															Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9							P-1 Line Item Number / Title: 2851 / ID Systems							Aggregated Items Title: Mark XII/ Mark XIIA Common Digital Transponder (MT032)						
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring																				
Equipment -- Procurement <sup>(1)</sup>	A		57,138.33	347	19.827	11,000.00	10	0.110	26,400.00	5	0.132	19,250.00	8	0.154	-	-	-	19,250.00	8	0.154
Equipment -- Installation	A		-	-	11.049	-	-	0.336	-	-	0.226	-	-	0.533	-	-	-	-	-	0.533
Subtotal: B Kits/Recurring			-	-	30.876	-	-	0.446	-	-	0.358	-	-	0.687	-	-	-	-	-	0.687
Support Cost																				
ILS	A		-	-	2.875	-	-	0.012	-	-	0.073	-	-	0.030	-	-	-	-	-	0.030
PE <sup>(2)</sup>	A		-	-	14.859	-	-	0.180	-	-	0.778	-	-	0.456	-	-	-	-	-	0.456
Product Improvement	A		-	-	4.632	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acceptance, Test & Evaluation	A		-	-	2.720	-	-	0.041	-	-	-	-	-	0.045	-	-	-	-	-	0.045
Depot	A		-	-	0.010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Initial Training	A		-	-	0.822	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support Cost			-	-	25.918	-	-	0.233	-	-	0.851	-	-	0.531	-	-	-	-	-	0.531
Total			-	-	56.794	-	-	0.679	-	-	1.209	-	-	1.218	-	-	0.000	-	-	1.218
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
Remarks: Models of Systems Affected: AN/APX-118/AN/APX-123(V) Type Modification: Reliability																				
Current Mark XII transponder systems no longer meet operational reliability and maintainability (R&M) requirements due to use beyond their intended life cycle and they suffer a high cost of ownership due to parts obsolescence. Current surface ship Mark XII transponders will be replaced to continue incremental digital and R&M upgrades to the Mark XII IFF system. The common digital transponder uses an open architecture that allows for future growth, including Mode 5 (AN/APX-123(V)) and Mode S which was incorporated into the production line beginning with the FY 2005 procurement. Inventory Objective of 375 is derived from the Naval Data Environment (NDE) database, the Ships & Aircraft Supplemental Data Table (SASDT) and ship/submarine Ship Program Manager (SPM) procurement plans and schedules. Incorporation of the Mark XIIA (Mode 5) capability occurred in FY08 and changed the nomenclature from AN/APX-118(V) to AN/APX-123(V). LRIP AN/APX-123(V) units were installed and operated in legacy-only modes until successful completion of the Mode 5 OPEVAL (MT037) and Full Rate Production decision. Full Rate Production was approved July 2012.																				
Footnotes: <sup>(1)</sup> Due to prioritization of this modification, procurement of B-kits was accelerated in order to more quickly outfit the fleet and obtain economies of scale in pricing. As a result, the quantities reflected in FY16-19 are for the ancillary hardware kits required to be provided with the previously purchased B-kits in the year the installations take place. Ancillary hardware procurements only require a 6 month production lead time. Current inventory objective is 375, which includes 9 additional units purchased in the prior years to provide to the Mode 5 program contractor as GFE. These units will not be installed. <sup>(2)</sup> Class and Baselines of ships are a significant contributor to the amount required for Production Engineering (PE) to accomplish the IFF capability. FY17 increase is in support of a new software/hardware configuration to address obsolescence issues.																				

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy															Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9						P-1 Line Item Number / Title: 2851 / ID Systems						Aggregated Items Title: AN/UPX 24 (V) Mode S (MT035)								
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Non-Recurring																				
Equipment -- Procurement <sup>(3)</sup>	A		95,090.91	11	1.046	128,333.33	3	0.385	107,750.00	4	0.431	171,500.00	4	0.686	-	-	-	171,500.00	4	0.686
Equipment -- Installation	A		-	-	0.388	-	-	-	-	-	0.091	-	-	0.225	-	-	-	-	-	0.225
Subtotal: B Kits/Non-Recurring			-	-	1.434	-	-	0.385	-	-	0.522	-	-	0.911	-	-	-	-	-	0.911
Support Cost																				
ILS	A		-	-	2.569	-	-	-	-	-	0.128	-	-	0.518	-	-	-	-	-	0.518
PE <sup>(4)</sup>	A		-	-	6.884	-	-	0.103	-	-	0.916	-	-	1.837	-	-	-	-	-	1.837
Product Improvement <sup>(5)</sup>	A		-	-	17.351	-	-	1.597	-	-	3.493	-	-	2.739	-	-	-	-	-	2.739
Acceptance, Test & Evaluation	A		-	-	1.215	-	-	-	-	-	-	-	-	0.020	-	-	-	-	-	0.020
Depot	A		-	-	0.046	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Initial Training	A		-	-	0.274	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support Cost			-	-	28.339	-	-	1.700	-	-	4.537	-	-	5.114	-	-	-	-	-	5.114
Total			-	-	29.773	-	-	2.085	-	-	5.059	-	-	6.025	-	-	0.000	-	-	6.025
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
Remarks: Models of Systems Affected: AN/UPX-24(V) Type Modification: Capability Improvement  Incorporation of a Mode S capability in the AN/UPX-24(V) to include an interface with a ship's Combat Systems. Inventory Objective of 123 is derived from the Naval Data Environment database, the Ships & Aircraft Supplemental Data Table and ship/submarine Ship Program Manager procurement plans and schedules.																				
Footnotes: <sup>(3)</sup> Increase procurements and installs based on shift in ship availabilities and to meet PEO IWS and Aegis Modernization schedules. Current Inventory Objective is 123. FY18 and out install costs have increased as several of the installs are no longer Mode 5 concurrent. This is due to earlier than anticipated Mode 5 fielding. At the time of those Mode 5 installs, Mode S kits were not yet available. <sup>(4)</sup> Production Engineering fluctuates throughout the FYDP as the program transitions from less complex installs on small number of ship classes with limited combat system configurations some years to installs on multiple ship classes with various additional combat system configurations other years. <sup>(5)</sup> Increase in PI for the FYDP is due to fleet modernization engineering change proposal (ECP) that supports the improvements in space, weight and power (SWAP), network hardening, and cyber security.																				

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy															Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9						P-1 Line Item Number / Title: 2851 / ID Systems						Aggregated Items Title: TACAN System Upgrade (MT038)								
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Non-Recurring																				
Equipment -- Procurement <sup>(6)</sup>	A		174,587.30	63	10.999	302,357.14	14	4.233	-	-	-	-	-	-	-	-	-	-	-	-
Equipment -- Installation	A		-	-	2.627	-	-	0.340	-	-	0.774	-	-	-	-	-	-	-	-	-
Subtotal: B Kits/Non-Recurring			-	-	13.626	-	-	4.573	-	-	0.774	-	-	-	-	-	-	-	-	-
Support Cost																				
ILS	A		-	-	0.895	-	-	0.031	-	-	0.032	-	-	-	-	-	-	-	-	-
PE	A		-	-	6.628	-	-	0.323	-	-	0.321	-	-	-	-	-	-	-	-	-
Acceptance, Test & Evaluation	A		-	-	0.100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support Cost			-	-	7.623	-	-	0.354	-	-	0.353	-	-	-	-	-	-	-	-	-
Total			-	-	21.249	-	-	4.927	-	-	1.127	-	-	0.000	-	-	0.000	-	-	0.000
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
Remarks: Models of Systems Affected: AN/URN-25 Type Modification: Reliability  Ship Tactical Air Navigation (TACAN) system upgrade. Upgrades will include digital/COTS upgrade to 1970's technology TACAN beacon and reduce parts obsolescence. Inventory Objective of 206 is derived from the Naval Data Environment (NDE) database, the Ships & Aircraft Supplemental Data Table (SASDT), ship/submarine Ship Program Manager (SPM) procurement plans and schedules and JPALS projected FOC.  Funding for procurements, support costs and associated installations for FY 2018 and beyond have been realigned to Ashore ATC Equipment (BLI 2820).  Footnotes: <sup>(6)</sup> TACAN kit funding in FY2017 was reprioritized to pay for Mode 5 installs in order to meet the mandate to field that system by FY2020. No installations shown in FY18 due to TACAN moving out of BLI 2851 to BLI 2820.																				

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy															Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9						P-1 Line Item Number / Title: 2851 / ID Systems						Aggregated Items Title: Mode S Digital Interrogator (MT040)								
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Non-Recurring																				
Equipment -- Procurement <sup>(7)</sup>	A		6,909.09	22	0.152	-	-	-	-	-	-	11,375.00	8	0.091	-	-	-	11,375.00	8	0.091
Equipment -- Installation	A		-	-	0.340	-	-	-	-	-	-	-	-	0.225	-	-	-	-	-	0.225
Subtotal: B Kits/Non-Recurring			-	-	0.492	-	-	-	-	-	-	-	-	0.316	-	-	-	-	-	0.316
Support Cost																				
Support Equipment	A		-	-	0.688	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ILS	A		-	-	1.904	-	-	0.200	-	-	0.360	-	-	0.471	-	-	-	-	-	0.471
PE <sup>(8)</sup>	A		-	-	16.936	-	-	0.598	-	-	1.538	-	-	2.569	-	-	-	-	-	2.569
Product Improvement	A		-	-	2.429	-	-	6.578	-	-	-	-	-	-	-	-	-	-	-	-
Acceptance, Test & Evaluation	A		-	-	1.695	-	-	0.300	-	-	-	-	-	0.086	-	-	-	-	-	0.086
Depot	A		-	-	0.200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Initial Training	A		-	-	0.423	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support Cost			-	-	24.275	-	-	7.676	-	-	1.898	-	-	3.126	-	-	-	-	-	3.126
Total			-	-	24.767	-	-	7.676	-	-	1.898	-	-	3.442	-	-	0.000	-	-	3.442
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
Remarks: Models of Systems Affected: AN/UPX-37/ANUPX-41(V) Type Modification: Capability Improvement																				
Adds Mode Select (S) Beacon System commercial aircraft interrogation capability to shipboard IFF Digital Interrogators (DIs). Incorporation of a Mode S capability in the AN/UPX-41(C) will result in a nomenclature change to AN/UPX-45(C). In some installations, such as Aircraft Carriers, incorporation of the Mode S capability in the DI will include an interface with a ship's Air Traffic Control System. Mode S provides improved aircraft surveillance and communications necessary to support air traffic control automation in the dense traffic environments. Mode S provides more accurate aircraft positional information and minimizes interference by discrete interrogation of each Mode S transponder-equipped aircraft and improved processing of aircraft replies. In addition, Mode S provides the medium for a digital data link, which can be used to exchange information between aircraft and various air traffic control functions and weather databases. Inventory Objective of 321 is derived from the Naval Data Environment database, the Ships & Aircraft Supplemental Data Table and ship/submarine Ship Program Manager procurement plans and schedules.																				
Footnotes: <sup>(7)</sup> Mode S kit funding in FY2017 was reprioritized to pay for Mode 5 installs in order to meet the mandate to field that system by FY2020. Increase procurements and installs based on shift in ship availabilities and to meet PEO IWS and Aegis Modernization schedules. 8 units being installed in FY18 were procured with PY funds in FY17. FY18 and out install cost have increased as several are no longer Mode 5 concurrent. <sup>(8)</sup> Production Engineering fluctuates throughout the FYDP as the program transitions from installs on small number of ship classes with limited combat system configurations some years to installs on multiple ship classes with various additional combat system configurations other years.																				



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Exhibit P-3a, Individual Modification: FY 2018 Navy					Date: May 2017		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9		P-1 Line Item Number / Title: 2851 / ID Systems			Modification Number / Title: 3 / Mark XII Mode 5 (MT037)		
ID Code (A=Service Ready, B=Not Service Ready) :				MDAP/MAIS Code:			
Resource Summary		Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Procurement Quantity (Units in Each)		-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)		135.970	14.309	12.884	10.554	0.000	10.554
Less PY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)		135.970	14.309	12.884	10.554	0.000	10.554
Plus CY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)		135.970	14.309	12.884	10.554	0.000	10.554
(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:**

Mark XIIA Mode 5 provides improved secure cooperative combat identification throughout Identification Friend or Foe (IFF). Mode 5 is a product improvement which is designed to be installed via engineering changes to digital MarkXII interrogators and transponders including, AN/APX-118/123(V), AN/UPX-37/41(C), and AN/UPX-24(V). Procurements will include Cryptography, Long Lead Items, Low-Rate Initial Production (LRIP) Units, Full Rate Production units, Support/Test Equipment, and associated hardware and software changes for Fleet Modernization Plan (FMP) and non-FMP installations. Mode 5 is designed to be installed in all Navy ships which are currently Mode 4 IFF capable. Milestone C and LRIP was approved in July 2006 and Full Rate Production was approved in July 2012. In March 2007, Joint Requirements Oversight Council Memorandum (JROCM 047-07) endorsed a Mode 5 Joint Full Operational Capability in FY2020.

Procurement and installs differ by 108 units due to Naval Special Warfare Forces, which will be installing their own units.

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Exhibit P-3a, Individual Modification: FY 2018 Navy					Date: May 2017	
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 9		P-1 Line Item Number / Title: 2851 / ID Systems			Modification Number / Title: 3 / Mark XII Mode 5 (MT037)	
ID Code (A=Service Ready, B=Not Service Ready) :				MDAP/MAIS Code:		
Models of Systems Affected: AN/APX-118/123(V), AN/UPX-37/41(C), AN/UPX-24(V)		Modification Type: Capability Improvement			Related RDT&E PEs: 0604777N	
Financial Plan	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Procurement						
Modification Item 1 of 1: Mark XII Mode 5 (MT037)						
B Kits						
Non-Recurring						
1.1.1) Equipment - Organic	- / 3.775	- / -	- / -	- / -	- / -	- / -
1.1.2) Mode 5 CXP Systems/Kits - NonOrganic <sup>(9)</sup>	300 / 13.789	39 / 0.531	41 / 0.059	47 / 0.311	- / -	47 / 0.311
1.1.3) Mode 5 UPX-24(V) Kits - NonOrganic	70 / 6.712	10 / 0.291	30 / 0.967	- / -	- / -	- / -
1.1.4) Mode 5 DI Systems/ Kits - NonOrganic <sup>(10)</sup>	293 / 11.970	- / -	- / -	- / -	- / -	- / -
Subtotal: Non-Recurring	- / 36.246	- / 0.822	- / 1.026	- / 0.311	- / -	- / 0.311
Subtotal: Mark XII Mode 5 (MT037)	663 / 36.246	49 / 0.822	71 / 1.026	47 / 0.311	- / -	47 / 0.311
Subtotal: Procurement, All Modification Items	- / 36.246	- / 0.822	- / 1.026	- / 0.311	- / -	- / 0.311
Support (All Modification Items)						
2.1) Support Equipment	- / 9.559	- / -	- / -	- / -	- / -	- / -
2.2) ILS <sup>(11)</sup>	- / 6.590	- / 0.605	- / 0.354	- / 0.413	- / -	- / 0.413
2.3) PE <sup>(12)</sup>	- / 42.004	- / 4.458	- / 4.330	- / 4.115	- / -	- / 4.115
2.4) Product Improvement	- / 9.052	- / 3.660	- / 0.652	- / -	- / -	- / -
2.5) Acceptance, Test & Evaluation <sup>(13)</sup>	- / 5.838	- / 0.018	- / 0.322	- / 0.252	- / -	- / 0.252
2.6) Initial Training	- / 0.517	- / -	- / -	- / -	- / -	- / -
Subtotal: Support	- / 73.560	- / 8.741	- / 5.658	- / 4.780	- / -	- / 4.780
Installation						
Modification Item 1 of 1: Mark XII Mode 5 (MT037)	- / 26.164	- / 4.746	- / 6.200	- / 5.463	- / 0.000	- / 5.463
Subtotal: Installation	- / 26.164	- / 4.746	- / 6.200	- / 5.463	- / -	- / 5.463
Total						
Total Cost (Procurement + Support + Installation)	135.970	14.309	12.884	10.554	0.000	10.554

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy						<b>Date:</b> May 2017							
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 9				<b>P-1 Line Item Number / Title:</b> 2851 / ID Systems				<b>Modification Number / Title:</b> 3 / Mark XII Mode 5 (MT037)					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :						<b>MDAP/MAIS Code:</b>							
<b>Modification Item 1 of 1:</b> Mark XII Mode 5 (MT037)													
<b>Manufacturer Information</b>													
Manufacturer Name: BAE Systems LP <sup>(14)</sup>						Manufacturer Location: Greenlawn, NY							
Administrative Leadtime (in Months): 3						Production Leadtime (in Months): 24							
<b>Dates</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018</b>							
Contract Dates		Dec 2015		Dec 2016		Dec 2017							
Delivery Dates		Dec 2017		Dec 2018		Dec 2019							
<b>Installation Information</b>													
<b>Method of Implementation:</b> [none specified]:: Installation Name: Mode 5 CXP Systems/Kits													
<b>Installation Cost</b>	<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>		
	Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		
Prior Years	191 / 8.378		1 / 0.040		- / -		- / -		- / -		- / -		
FY 2016	- / -		38 / 1.439		1 / 0.060		- / -		- / -		- / -		
FY 2017	- / -		- / -		40 / 2.316		1 / 0.050		0 / 0.000		1 / 0.050		
FY 2018	- / -		- / -		- / -		25 / 1.187		0 / 0.000		25 / 1.187		
Total	191 / 8.378		39 / 1.479		41 / 2.376		26 / 1.237		0 / 0.000		26 / 1.237		
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	191	9	10	10	10	10	10	10	11	7	6	6	7
Out	191	9	10	10	10	10	10	10	11	7	6	6	7
<b>Method of Implementation:</b> [none specified]:: Installation Name: Mode 5 UPX-24(V) Kits													
<b>Installation Cost</b>	<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>		
	Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		
Prior Years	70 / 3.989		- / -		- / -		- / -		- / -		- / -		
FY 2016	- / -		10 / 0.829		- / -		- / -		- / -		- / -		
FY 2017	- / -		- / -		13 / 1.170		13 / 1.183		0 / 0.000		13 / 1.183		
FY 2018	- / -		- / -		- / -		- / -		- / -		- / -		
Total	70 / 3.989		10 / 0.829		13 / 1.170		13 / 1.183		0 / 0.000		13 / 1.183		

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy										<b>Date:</b> May 2017			
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 9					<b>P-1 Line Item Number / Title:</b> 2851 / ID Systems					<b>Modification Number / Title:</b> 3 / Mark XII Mode 5 (MT037)			
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :								<b>MDAP/MAIS Code:</b>					
<b>Modification Item 1 of 1:</b> Mark XII Mode 5 (MT037)													
<b>Installation Information</b>													
<b>Method of Implementation:</b> [none specified]:: Installation Name: Mode 5 UPX-24(V) Kits													
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	70	3	3	3	1	4	3	3	3	4	3	3	3
Out	70	3	3	3	1	4	3	3	3	4	3	3	3
<b>Method of Implementation:</b> [none specified]:: Installation Name: Mode 5 DI Systems/ Kits													
<b>Installation Cost</b>	<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>		
	Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		
Prior Years	162 / 13.797		25 / 2.438		33 / 2.654		45 / 3.043		0 / 0.000		45 / 3.043		
FY 2016	- / -		- / -		- / -		- / -		- / -		- / -		
FY 2017	- / -		- / -		- / -		- / -		- / -		- / -		
FY 2018	- / -		- / -		- / -		- / -		- / -		- / -		
Total	162 / 13.797		25 / 2.438		33 / 2.654		45 / 3.043		0 / 0.000		45 / 3.043		
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	162	7	6	6	6	9	8	8	8	12	11	11	11
Out	162	7	6	6	6	9	8	8	8	12	11	11	11
<b>Footnotes:</b>													
(9) Procurement of Mode 5 has been prioritized to meet the mandate to field the system prior to FY2020. Hardware unit costs include ancillary equipment throughout the FYDP. The number of kits and necessary ancillary hardware required is dependent upon the class of ship; therefore unit costs fluctuate from year to year based on the number of installs planned for the following year(s). Delta between procurements and installations is due to the (procurement only) Naval Special Warfare units. The Support Equipment (SE) line consists of buying USM-719 (Test Sets) and KIV-78 (crypto appliques). Deliveries occur on a sliding basis, beginning 12 months after contract award and completing 24 months. Install of equipment can not occur until receipt of all 3 pieces of equipment have been delivered from manufacturer. Install costs vary from year to year due to ship availability, ship classification and location of the install. Hardware requirements vary based ship classifications. Inventory Objectives are as follows: Mode 5 CXP kits is 427, Mode 5 UPX-24(V) Kits is 110, and Mode 5 DI Kits is 293. Reschedule of ship procurement and installations to meet fleet request for earliest fielding of Mode 5 capability.													
(10) Reschedule of ship procurement and installations to meet fleet request for earliest fielding of Mode 5 capability.													
(11) This cost element is impacted by the amount of documentation and logistics work needed because of the differences between ship classes.													
(12) Fluctuation in Production Engineering (PE) is due to the reschedule of ship procurement and installations to meet fleet request for earliest fielding of Mode 5 capability.													

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 9	<b>P-1 Line Item Number / Title:</b> 2851 / ID Systems	<b>Modification Number / Title:</b> 3 / Mark XII Mode 5 (MT037)
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :		<b>MDAP/MAIS Code:</b>
<p><sup>(13)</sup> Acceptance Test &amp; Evaluation (AT&amp;E) costs fluctuate between fiscal years because they are not solely determined by number of procurements. This cost element is impacted by the amount of documentation and logistics work needed because of the differences of complexity between ship classes.</p> <p><sup>(14)</sup> Production lead time ranges from 12 -24 months. Deliveries from the Original Equipment Manufacturer (OEM) commence 12 months after contract award and conclude 24 months after award (i.e. the delivery date on the P-3a is the date of the first delivery, not the date when all items are delivered); installations then occur within the allotted 12 months from when each kit is delivered. Once delivered, additional efforts are required by the In-Service Engineering Activity to produce ready for issue units from kits, and build and test complete systems with ancillary hardware prior to fleet installs.</p>		

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy										<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment							<b>P-1 Line Item Number / Title:</b> 2876 / Naval Mission Planning Systems					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A				<b>Program Elements for Code B Items:</b> N/A				<b>Other Related Program Elements:</b> N/A				
<b>Line Item MDAP/MAIS Code:</b> N/A												
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>To Complete</b>	<b>Total</b>
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	222.085	13.737	14.273	11.976	2.550	14.526	12.188	12.408	12.660	12.911	Continuing	Continuing
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	222.085	13.737	14.273	11.976	2.550	14.526	12.188	12.408	12.660	12.911	Continuing	Continuing
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>222.085</b>	<b>13.737</b>	<b>14.273</b>	<b>11.976</b>	<b>2.550</b>	<b>14.526</b>	<b>12.188</b>	<b>12.408</b>	<b>12.660</b>	<b>12.911</b>	<b>Continuing</b>	<b>Continuing</b>
<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> )	-	0.408	0.377	1.505	1.178	2.683	-	-	-	-	-	3.468
Flyaway Unit Cost ( <i>\$ in Dollars</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ( <i>\$ in Dollars</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Description:</b> This line item provides funding to procure Joint Mission Planning System (JMPS) workstations, Software/Production Engineering Support and Integrated Logistics Support (ILS). JMPS is the Chief of Naval Operation's (CNO) designated automated mission planning system for the Navy, supporting over 40 T/M/S. Future JMPS platforms include: MQ-4C (Triton), P-8, C/KC-130, and CH-53K. JMPS enables weapon system employment by providing the information and decision aids needed to rapidly plan aircraft, weapon or sensor missions, load mission data into aircraft and weapons, conduct mission rehearsal and post mission analysis. JMPS consists of two types of workstations - Maritime (JMPS-M) and Expeditionary (JMPS-E). JMPS-M is the primary product within the Naval Mission Planning System (NavMPS). The Navy's modern aircraft need data loaded from JMPS-M to fly their missions. As weapons become increasingly advanced, they will require increased quantity and fidelity of data to support mission planning. These data requirements will require additional advanced processors and greater amounts of continuous memory. JMPS-M flight planning seats refer to the computer workstations that employ the JMPS framework software. JMPS-E is a tailorable and collaborative web-based mission planning system for the Amphibious Ready Group (ARG) Amphibious Squadron (PHIBRON). Program cost is not directly related to FY hardware quantity; software is a cost factor independent of FY hardware quantity and cost. Funding profile accounts for required four year workstations refresh to preclude aging hardware, increased failure rates, emerging technology; such as Electronic Kneeboard (EKB) and increased memory requirements.												
Prior to FY17, the EKB was funded in BLI 4268.												
<b>Justification:</b> Items to be funded in this line include:  Workstation Components - JMPS-M and JMPS-E procure tactical computer hardware through a non-developmental item acquisition strategy. Tactical computer equipment is used to plan and analyze expeditionary missions and aircraft routes under various mission configurations and operational threat environments. Primary outputs are tasking orders, courses of action (COAs), route plans, and mission essential data loads for mission execution. New workstations consist of aircraft unique data transfer devices and interfaces, Memory Data Loader Receptacles (MDLR) Small Computer Standard Interface (SCSI) (MDLR-S), Electronic Kneeboard (EKB), Common Munitions Bit Reprogramming Equipment (CMBRE), Ogden Data Device Ethernet Crypto (ODD-EC), Data Storage Unit Receptacle SCSI (DSUR-S), network hubs, printers, fleet training school workstations, JMPS Application Central Access Library (JACAL), training assets, and other peripheral devices for USN/USNR/USMC/USMCR missions. Legacy data loader receptacle failures in addition to computer interface obsolescence and an inability to influence airframe changes for legacy aircraft in sustainment, drive a need to obtain a new data loader using a more extensive interface. JMPS Authority to Operate (ATO) requires compliance with Naval Network Warfare Command (NNWC)-issued Information Assurance (IA) mandates and Communications Tasking Orders (CTOs).												

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 9: Aviation Electronic Equipment		P-1 Line Item Number / Title: 2876 / Naval Mission Planning Systems
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>Software/Production Engineering Support - The NavMPS program produces software releases via an evolutionary development process. These releases contain enhancements based on fleet inputs and technology challenges. They also contain changes required to retain compatibility with supported platforms, associated weapons, and threat and imagery databases providing input to NavMPS. Software releases are independent of hardware buys. Cost element includes production support services, engineering support services, independent verification and validation test and acceptance, site activation, IA compliance and quality assurance efforts.</p> <p>Integrated Logistics Support - Site surveys, prepare site installation drawings, on-site engineering and logistics evaluations for installations and delivery systems comply with the specified configuration. This includes the production and delivery of technical documentation and training materials such as OPNOTES, installation instructions, user manuals required during the fielding of NavMPS products. ILS is a cost factor independent of FY hardware quantity and cost.</p> <p>FY18 provides funding to procure seven hundred fifty (750) JMPS-M flight planning seats, and five (5) JMPS-E workstations, Electronic Kneeboards (EKB), training assets, and other JMPS support equipment; the continuation of enhancements of software releases based on fleet inputs, emerging technologies, IA compliance and associated logistics support. FY18 laptop procurement supports MH-53E, CNATRA (training aircraft),C-2, E-2C, E-2D, VH-3/60, NLH, AH-1, UH-1, AV-8B, JMPS-E, CH-53E, and CH-53K. Additionally, funding provides for database systems with storage space capable of storing National Geospatial-Intelligence Agency (NGA) world-wide map data with associated network hardware. This will provide the Fleet with the required storage for map data, Digital Terrain Elevation Data (DTED) and imagery necessary to plan missions. EKB provides inflight mission planning, flight administration, and situational awareness data in a tablet form.</p> <p>FY18 OCO funding supports the Common Munitions Bit and Reprogramming Equipment (CMBRE) for the upgrade and procurement of units and spares to support fleet operations.</p>		



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**Exhibit P-40, Budget Line Item Justification:** FY 2018 Navy **Date:** May 2017

<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment	<b>P-1 Line Item Number / Title:</b> 2804 / Depl JT Cmd & Control (DJC2)
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<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A	<b>Program Elements for Code B Items:</b> N/A	<b>Other Related Program Elements:</b> 0603237N
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**Line Item MDAP/MAIS Code:** N/A

Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	161.403	1.314	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	162.717
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	161.403	1.314	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	162.717
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority (<i>\$ in Millions</i>)</b>	<b>161.403</b>	<b>1.314</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>-</b>	<b>162.717</b>

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

Initial Spares ( <i>\$ in Millions</i> )	-	0.293	-	-	-	-	-	-	-	-	-	0.293
Flyaway Unit Cost ( <i>\$ in Thousands</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ( <i>\$ in Thousands</i> )	-	-	-	-	-	-	-	-	-	-	-	-

## Description:

Deployable Joint Command and Control (DJC2) provides a self-contained, standardized, rapidly deployable, modular, scalable, and reconfigurable joint command and control (C2) capability to designated Geographic Combatant Commands (GCCs). DJC2 is the materiel solution to Defense Planning Guidance that called for the development of standing Joint Task Forces (JTF) with a deployable C2 capability. DJC2 will ensure that Joint Force Commanders (JFC) are equipped as well as trained and organized to carry out their C2 responsibilities. DJC2 provides GCCs and JFCs a mission critical, integrated family of systems with which to plan, control, coordinate, execute and assess operations. It is designed to deploy rapidly, set up within hours and quickly provide necessary C2 mission and collaboration functionality across the full spectrum of JTF operations. The DJC2 has also been deployed in support of Humanitarian Assistance and Disaster Relief (HA/DR) efforts. The capability is intended for all levels of conflict and will be reconfigurable to meet specific GCC and JTF mission requirements. This capability is interoperable with higher and adjacent echelons of command (to include coalition allies) as well as with supporting elements to include joint forces.

DJC2 sites are as follows: 6 DJC2 core systems garrisoned at USSOUTHCOM Tampa, Florida (1), USEUCOM Stuttgart, Germany (1), AFRICOM (SETAF) Vicenza, Italy (1), USPACOM Camp Smith, Hawaii (1), Marine Expeditionary Force (III MEF) Camp Hansen, Japan (1), and NAVEUR-NAVAF, JFC Naples, Italy (1).

Note that DJC2 is not a follow-on or replacement system for the Global Command and Control System-Joint (GCCS-J); rather, DJC2 employs a suite of applications, ensuring interoperability with the worldwide-installed base of GCCS-J.

Funding has been moved to BLI 2906 starting in FY 2017 as part of the BLI consolidation effort.

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy								Date: May 2017				
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment						P-1 Line Item Number / Title: 2906 / Tactical/Mobile C4I Systems						
ID Code (A=Service Ready, B=Not Service Ready): B			Program Elements for Code B Items: N/A					Other Related Program Elements: 0604231N				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	73.219	13.600	27.927	32.425	7.900	40.325	31.471	32.120	32.784	32.901	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	73.219	13.600	27.927	32.425	7.900	40.325	31.471	32.120	32.784	32.901	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	73.219	13.600	27.927	32.425	7.900	40.325	31.471	32.120	32.784	32.901	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	0.495	0.277	2.189	-	2.189	1.797	2.045	1.847	1.639	Continuing	Continuing
Flyaway Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-
Description: European Reassurance Initiative (ERI) Overseas Contingency Operation (OCO) funding Increase in FY18 procures an MTOC C4I gear set to support increased operations with Allied Forces. Global Force Management policies have increased requirements for P-8A aircraft operations in EUCOM. This additional funding provides ability to conduct multi-site P-8A surveillance operations in USEUCOM Area of Responsibility to counter/monitor growing threats. The P-8A surveillance program ensures unfettered access of Sea-Lines of Communication and freedom of navigation for the United States and her Allies. Funding maximizes communications (C4I) and inter-operability with Allied forces.  Commencing in FY17, OPN line item 2246 (PE 0204271N) was consolidated with OPN line item 2906 to align Tactical Mobile (TacMobile) C4I procurements with TacMobile MPRF P-8A Aircraft Support Systems procurements. Additionally in FY17, DJC2 funding from line item 2804 was realigned to line item 2906 as part of the Budget Line Item Consolidation effort.  Tactical/Mobile (TacMobile) C4I Systems: The Tactical Mobile program provides evolutionary systems and equipment upgrades to support the Maritime Patrol and Reconnaissance Force Commanders with the capability to plan, direct and control the tactical operations of Maritime Patrol and Reconnaissance Aircraft (MPRA) and other assigned units within their respective area of responsibility. Looking ahead, TacMobile provides critical reach-back capabilities between the Maritime Patrol and Reconnaissance Aircraft, primarily the P-8A/Poseidon, and MQ-4C/Triton, and the Maritime Intelligence Surveillance and Reconnaissance Enterprise. These operations include littoral, open ocean, and over land long-dwell surveillance, anti-surface warfare, over-the-horizon targeting, counter-drug operations, power projection, anti-submarine warfare, mining, search and rescue, indications and warnings, and special operations. The missions are supported by the fixed-site Tactical Operations Centers (TOCs) and Mobile Tactical Operations Centers (MTOCs). Each TacMobile unit is a system-of-systems. TOCs provide sensor and tactical data communications systems; mission planning/mission support, sensor analysis capabilities; avionics and weapons system interfaces, media devices and data handling capabilities, at fixed-site locations. MTOC is a scalable, mobile version of the TOC for contingency operations and for support of MPRA operations from remote forward operating base airfields.  7 TOCs: 6 operational systems (located at Jacksonville Florida, Sigonella Italy, Kaneohe Bay Hawaii, Whidbey Island Washington, Kadena Japan, and Bahrain), and 1 laboratory system (the "TacMobile Systems Integration Lab" (TMSIL), collocated at SSC Atlantic detachment Patuxent River Maryland with PMA-290's P-8A "Pax River Systems Integration Lab" (PAXSIL)).  15 MTOCs: 9 operational systems (home ported at Jacksonville Florida (4 sites), Whidbey Island Washington (4 sites), and Coronado (North Island) California (1 site)), 1 laboratory system (an aircraft integration lab located at Navy Detachment Dallas), 1 C4I engineering and maintenance support system (located at the In Service Engineering Activity (ISEA), SSC Atlantic), 1 C4I mobile systems schoolhouse (located at the Center for Naval Air Technical Training (CNATT) Jacksonville Florida), 1 system undergoing End -2- End production, and 2 legacy systems awaiting End-to-End refresh/recapitalization to meet current operational configuration/requirements (SSC Atlantic).												

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment		P-1 Line Item Number / Title: 2906 / Tactical/Mobile C4I Systems
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: N/A	Other Related Program Elements: 0604231N
Line Item MDAP/MAIS Code: N/A		
<p>The TacMobile program uses an evolutionary development strategy consisting of incremental upgrades to meet new and emergent Fleet requirements, while retaining current capabilities. Increments are planned and resourced to support the MPRF Family of Systems aircraft: P-8A Poseidon aircraft and its upgrades; Advanced Airborne Sensor (AAS); and MQ-4C Triton.</p> <p>Tactical/Mobile C4I Systems fund TacMobile Command, Control, Computer, Communications and Intelligence (C4I), network, and reach back communications systems modernization. Additionally, the line item funds TacMobile interfaces with P-8A (including Advanced Airborne Sensor (AAS)) and MQ-4C aircraft systems and sensors, and tactical communications modernization. Together these separate capabilities are combined to provide the TOCs and MTOCs with an Integrated Warfighting Capability to support Maritime Patrol P-8A operation requirements and pace aircraft modernization requirements.</p> <p>TacMobile C4I/P-8A modernization are synchronized to provide Technical Refreshes and Incremental Capability upgrades which provide the underlying C4I Infrastructure components and aircraft support capabilities components that ride on the C4I infrastructure. There are five major TacMobile components comprised of currently twenty three distinct subsystems that are developed in synchronization to work together, and are therefore fielded together. New or modernized aircraft interfaces are built specifically to integrate onto the new or modernized C4I infrastructure. They operate together as an overarching system of systems.</p> <p>Deployable Joint Command and Control (DJC2) provides a self-contained, standardized, rapidly deployable, modular, scalable, and reconfigurable joint command and control (C2) capability to designated Geographic Combatant Commands (GCCs). DJC2 is the materiel solution to Defense Planning Guidance that called for the development of standing Joint Task Forces (JTF) with a deployable C2 capability. DJC2 will ensure that Joint Force Commanders (JFC) are equipped as well as trained and organized to carry out their C2 responsibilities. DJC2 provides GCCs and JFCs a mission critical, integrated family of systems with which to plan, control, coordinate, execute and assess operations. It is designed to deploy rapidly, set up within hours and quickly provide necessary C2 mission and collaboration functionality across the full spectrum of JTF operations. The DJC2 has also been deployed in support of Humanitarian Assistance and Disaster Relief (HA/DR) efforts. The capability is intended for all levels of conflict and will be reconfigurable to meet specific GCC and JTF mission requirements. This capability is interoperable with higher and adjacent echelons of command (to include coalition allies) as well as with supporting elements to include joint forces.</p> <p>DJC2 sites are as follows: 6 DJC2 core systems garrisoned at USSOUTHCOM Tampa, Florida (1), USEUCOM Stuttgart, Germany (1), AFRICOM (SETAF) Vicenza, Italy (1), USPACOM Camp Smith, Hawaii (1), Marine Expeditionary Force (III MEF) Camp Hansen, Japan (1), and NAVEUR-NAVAF, JFC Naples, Italy (1).</p> <p>Note that DJC2 is not a follow-on or replacement system for the Global Command and Control System-Joint (GCCS-J); rather, DJC2 employs a suite of applications, ensuring interoperability with the worldwide-installed base of GCCS-J.</p> <p>[P40AMOD / End to End MTOC System]: Funding procures MTOC C4I gear set to support increased operations with Allied Forces. Global Force Management policies have increased requirements for P-8 operations in EUCOM. This European Reassurance Initiative (ERI) Overseas Contingency Operation (OCO) funding provides ability to conduct multi-site P-8A surveillance operations in USEUCOM to counter/monitor growing threats. The P-8A surveillance program ensures unfettered access of Sea Lines of Communication and freedom of navigation for the United States and her Allies. Funding maximizes communications (C4I) and inter-operability with Allied forces.</p>		

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy								<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment						<b>P-1 Line Item Number / Title:</b> 2906 / Tactical/Mobile C4I Systems				
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): B			<b>Program Elements for Code B Items:</b> N/A			<b>Other Related Program Elements:</b> 0604231N				
<b>Line Item MDAP/MAIS Code:</b> N/A										
Exhibits Schedule					Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Tactical/Mobile (TacMobile) C4I Systems				- / 53.683	- / 0.717	- / 1.414	- / 2.973	- / -	- / 2.973
P-40a	Tactical/Mobile (TacMobile) C4I Systems- Tech Refresh				- / 9.998	- / 1.979	- / 2.919	- / 5.765	- / 0.000	- / 5.765
P-40a	End to End MTOC System				- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 7.900	- / 7.900
P-3a	2 / Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.1 (Upgrade)				- / 9.538	- / 10.904	- / 23.594	- / 23.687	- / 0.000	- / 23.687
<b>P-40</b>	<b>Total Gross/Weapon System Cost</b>				<b>- / 73.219</b>	<b>- / 13.600</b>	<b>- / 27.927</b>	<b>- / 32.425</b>	<b>- / 7.900</b>	<b>- / 40.325</b>
<p>*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.</p> <p>Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.</p>										
<p><b>Justification:</b></p> <p>FY18 funding procures Technical Refresh of TacMobile TOC and MTOC C4I and P-8A aircraft interfaces, and Installation in FY18 of Technical Refresh Items procured and produced in FY17. In addition, FY18 funding is for increased data throughput, Assured C2 posture, SATCOM reliability, and space resiliency via band diversity and redundancy for CBSP/NMT MILSATCOM equipped platforms and facilities.</p> <p>FY18 funding procures DJC2 system enhancements for six sites, focusing on delivering Next Generation Enclave (NGE). NGE reduces DJC2 size, weight, and power requirements and also enhances DJC2 cyber security posture.</p>										

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<b>Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy</b>															<b>Date:</b> May 2017				
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 10								<b>P-1 Line Item Number / Title:</b> 2906 / Tactical/Mobile C4I Systems							<b>Aggregated Items Title:</b> Tactical/Mobile (TacMobile) C4I Systems				

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
			Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
1) T4050 Tactical/Mobile																				
1.1) TOC/MTOC 2.0.1	A		288.600	30	8.658	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.2) TOC/MTOC Inc 2.1	A		914.235	34	31.084	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.6) Shore Pre-Installation and Design	A		-	-	0.309	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) T4050 Tactical/Mobile			-	-	40.051	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2) TACAMO																				
2.1) TACAMO	B		1,542.667	3	4.628	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 2) TACAMO			-	-	4.628	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3) T4776 Installation																				
3.1) 2.0.1 Install	A		-	-	3.677	-	-	0.358	-	-	-	-	-	-	-	-	-	-	-	-
3.2) 2.1 Install	A		-	-	5.327	-	-	0.359	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 3) T4776 Installation			-	-	9.004	-	-	0.717	-	-	-	-	-	-	-	-	-	-	-	-
4) JH500 DJC2 Increment I System Enhancements																				
4.1) DJC2 Increment I System Enhancements <sup>(1)</sup>	A		-	-	-	-	-	-	235.631	6	1.414	495.500	6	2.973	-	-	-	495.500	6	2.973
Subtotal: 4) JH500 DJC2 Increment I System Enhancements			-	-	0.000	-	-	-	-	-	1.414	-	-	2.973	-	-	-	-	-	2.973
Total			-	-	53.683	-	-	0.717	-	-	1.414	-	-	2.973	-	-	-	-	-	2.973

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

**Footnotes:**

<sup>(1)</sup> Quantities listed represent DJC2 core system sites. Unit costs vary due to the number or level of core system enhancements performed at each site from year to year. FY18 funding procures DJC2 system enhancements for six sites, focusing on delivering Next Generation Enclave (NGE). FY18 funds also includes delivering NGE enhancements with the addition of Command and Control in a Communications Denied Environment (C2CDE) equipment. These enhancements reduce DJC2 size, weight, and power requirements and also enhances DJC2 cyber security posture.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy													Date: May 2017							
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10						P-1 Line Item Number / Title: 2906 / Tactical/Mobile C4I Systems						Aggregated Items Title: Tactical/Mobile (TacMobile) C4I Systems- Tech Refresh								
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring																				
TOC -- Procurement	A		642.000	2	1.284	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOC -- Installation	A		-	-	0.390	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MTOC -- Procurement (2)	A		786.286	7	5.504	1,979.000	1	1.979	1,319.000	2	2.638	1,855.333	3	5.566	-	-	-	1,855.333	3	5.566
MTOC -- Installation	A		-	-	0.795	-	-	-	-	-	0.281	-	-	0.199	-	-	-	-	-	0.199
FY2013 OCO Funding (JMAST Tech Refresh) -- Procurement	A		-	-	2.025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FY2013 OCO Funding (JMAST Tech Refresh) -- Installation	A		-	-	-	-	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: B Kits/Recurring			-	-	9.998	-	-	1.979	-	-	2.919	-	-	5.765	-	-	-	-	-	5.765
Total			-	-	9.998	-	-	1.979	-	-	2.919	-	-	5.765	-	-	0.000	-	-	5.765
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
Remarks: Models of Systems Affected: Various Type Modification: Tech Refresh  Provides overarching technical modernization and technical refresh to fielded TacMobile systems.																				
Footnotes: (2) 1. Quantities represent separate Command & Control & Intelligence (C2I), Communications, Aircraft Interface, and Mobility/Facility component system upgrades of TacMobile systems. 2. TacMobile Tech Refresh consists of refreshing 5 major components (made up of 23 individual subsystems) that range in cost from \$850K to \$2,500K. The Tech Refresh hardware composition is dependent upon the requirements of the site at the time of refresh. As an example, in FY16, the unit cost was \$1,979K, with the only component scheduled for procurement being the C4I component (at \$1,979K). The average unit cost ranges from \$1,319K in FY17 to \$1,855K in FY18, due to varying costs of components being procured: Tactical Data Links (TADILs) (\$850K) and Facilities (\$1,788K) in FY17; Aircraft Interfaces (\$1,087K), C4I (\$1,979K), and Communications (\$2,500K) in FY18. 3. FY17 installs include 1 unit procured in FY16 in BLI 2906 and 2 units procured in FY16 BLI 2246 due to line item consolidation.																				

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy										Date: May 2017	
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10					P-1 Line Item Number / Title: 2906 / Tactical/Mobile C4I Systems					Aggregated Items Title: End to End MTOC System	

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring																				
End to End MTOC System -- Procurement <sup>(3)</sup>	A		-	-	-	-	-	-	-	-	-	-	-	0.000	7,603.000	1	7.603	7,603.000	1	7.603
End to End MTOC System -- Installation	A		-	-	-	-	-	-	-	-	-	-	-	0.000	-	-	0.297	-	-	0.297
Subtotal: B Kits/Recurring			-	-	0.000	-	-	-	-	-	-	-	-	0.000	-	-	7.900	-	-	7.900
Total			-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	7.900	-	-	7.900

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

**Remarks:**

Models of Systems Affected: MTOC

Type Modification: Tactical/Mobile (TacMobile) C4I Systems - End to End MTOC System

Funding procures MTOC C4I gear set to support increased operations with Allied Forces. Global Force Management policies have increased requirements for P-8 operations in EUCOM. This European Reassurance Initiative (ERI) Overseas Contingency Operation (OCO) funding provides ability to conduct multi-site P-8A surveillance operations in USEUCOM to counter/monitor growing threats. The P-8A surveillance program ensures unfettered access of Sea Lines of Communication and freedom of navigation for the United States and her Allies. Funding maximizes communications (C4I) and inter-operability with Allied forces.

**Footnotes:**

<sup>(3)</sup> European Reassurance Initiative (ERI) Overseas Contingency Operation (OCO) funding Increase in FY18 procures an MTOC C4I gear set to support increased operations with Allied Forces. Global Force Management policies have increased requirements for P-8A aircraft operations in EUCOM. This additional funding provides ability to conduct multi-site P-8A surveillance operations in USEUCOM Area of Responsibility to counter/monitor growing threats. The P-8A surveillance program ensures unfettered access of Sea-Lines of Communication and freedom of navigation for the United States and her Allies. Funding maximizes communications (C4I) and inter-operability with Allied forces.



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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 10		<b>P-1 Line Item Number / Title:</b> 2906 / Tactical/Mobile C4I Systems			<b>Modification Number / Title:</b> 2 / Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.1	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	9.538	10.904	23.594	23.687	0.000	23.687
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	9.538	10.904	23.594	23.687	0.000	23.687
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>9.538</b>	<b>10.904</b>	<b>23.594</b>	<b>23.687</b>	<b>0.000</b>	<b>23.687</b>
<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> )	-	-	-	-	-	-
<b>Description:</b> Provides technical modernization and technical refresh to fielded TacMobile Command and Control, Networking, and Communications systems necessary to support P-8A Poseidon Increment 2 and MQ-4C Triton Unmanned Aerial System (UAS) at their Initial Operating Capability (IOC).						

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 10			<b>P-1 Line Item Number / Title:</b> 2906 / Tactical/Mobile C4I Systems		<b>Modification Number / Title:</b> 2 / Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.1	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Models of Systems Affected:</b> Inc 2.1		<b>Modification Type:</b> Upgrade			<b>Related RDT&amp;E PEs:</b> 0604231N	
<b>Financial Plan</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
<b>Procurement</b>						
<i>Modification Item 1 of 1:</i> Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.1						
B Kits						
Recurring						
1.1.1) TOC - NonOrganic <sup>(4)</sup>	4 / 3.107	6 / 4.242	9 / 6.279	9 / 6.704	- / -	9 / 6.704
1.1.2) MTOC - NonOrganic <sup>(5)</sup>	8 / 5.914	8 / 5.656	15 / 13.792	13 / 13.355	- / -	13 / 13.355
1.1.3) Shore Pre-Installation Design - Organic	- / 0.121	- / 0.200	- / 0.400	- / 0.400	- / -	- / 0.400
<i>Subtotal: Recurring</i>	- / 9.142	- / 10.098	- / 20.471	- / 20.459	- / -	- / 20.459
<i>Subtotal: Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.1</i>	12 / 9.142	14 / 10.098	24 / 20.471	22 / 20.459	- / -	22 / 20.459
<i>Subtotal: Procurement, All Modification Items</i>	- / 9.142	- / 10.098	- / 20.471	- / 20.459	- / -	- / 20.459
<b>Installation</b>						
<i>Modification Item 1 of 1:</i> Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.1	- / 0.396	- / 0.806	- / 3.123	- / 3.228	- / 0.000	- / 3.228
<i>Subtotal: Installation</i>	- / 0.396	- / 0.806	- / 3.123	- / 3.228	- / -	- / 3.228
<b>Total</b>						
<b>Total Cost (Procurement + Support + Installation)</b>	<b>9.538</b>	<b>10.904</b>	<b>23.594</b>	<b>23.687</b>	<b>0.000</b>	<b>23.687</b>

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017								
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 10			<b>P-1 Line Item Number / Title:</b> 2906 / Tactical/Mobile C4I Systems			<b>Modification Number / Title:</b> 2 / Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.1							
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :					<b>MDAP/MAIS Code:</b>								
<b>Modification Item 1 of 1:</b> Tactical Mobile (TacMobile) C4I Systems - Tech Refresh 2.1.1													
<b>Manufacturer Information</b>													
Manufacturer Name: SSC LANT					Manufacturer Location: Charleston, SC								
Administrative Leadtime ( <i>in Months</i> ): 3					Production Leadtime ( <i>in Months</i> ): 6								
<b>Dates</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018</b>							
Contract Dates		Jan 2016		Jan 2017		Jan 2018							
Delivery Dates		Jul 2016		Jul 2017		Jul 2018							
<b>Installation Information</b>													
<b>Method of Implementation:</b> [none specified]:: Installation Name: TacMobile C4I Systems Technical Refresh 2.1.1													
<b>Installation Cost</b>	<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>		
	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	4 / 0.396		8 / 0.806		- / -		- / -		- / -		- / -		
FY 2016	- / -		- / -		23 / 3.123		- / -		- / -		- / -		
FY 2017	- / -		- / -		- / -		24 / 3.228		0 / 0.000		24 / 3.228		
FY 2018	- / -		- / -		- / -		- / -		- / -		- / -		
Total	4 / 0.396		8 / 0.806		23 / 3.123		24 / 3.228		0 / 0.000		24 / 3.228		
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	4	-	4	4	-	-	8	8	7	-	8	8	8
Out	4	-	4	4	-	-	8	8	7	-	8	8	8
<b>Footnotes:</b>													
(4) For Tactical Operations Center: 1. Quantities represent separate Command & Control & Intelligence (C2I), Communications, Aircraft Interface, and Mobility/Facility component system upgrades of TacMobile systems. 2. FY17 installs include 14 unit procured in FY16 in BLI 2906 and 9 units procured in FY16 in BLI 2246.													
(5) For Mobile Tactical Operations Center: 1. Quantities represent separate Command & Control & Intelligence (C2I), Communications, Aircraft Interface, and Mobility/Facility component system upgrades of TacMobile systems. 2. TacMobile Tech Refresh 2.1.1 consists of refreshing 5 major components (made up of 14 individual subsystems) that range in cost from \$500K to \$1,350K. The tech refresh hardware composition is dependent upon the requirements of the site at the time of refresh. As an example, in FY16, the average unit cost was \$707K, with the primary component procured being the C4I component (at \$770K). The average unit cost ranges from \$919K in FY17 to \$1,027K in FY18, in part due to more expensive primary components, to include Person portable Common Data Link (PCDL) (\$1,100K) and Higher Than SECRET (HTS) Enclaves (\$980K). 3. FY17 installs include components procured by PE 0204271N 2246 in FY16.													

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy								Date: May 2017				
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment							P-1 Line Item Number / Title: 2914 / Distributed Common Ground System-Navy (DCGS-N)					
ID Code (A=Service Ready, B=Not Service Ready): B			Program Elements for Code B Items: N/A					Other Related Program Elements: 0305208N				
Line Item MDAP/MAIS Code: 000												
Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	207.637	31.809	24.676	13.790	6.392	20.182	13.005	10.995	23.107	16.472	242.100	589.983
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	207.637	31.809	24.676	13.790	6.392	20.182	13.005	10.995	23.107	16.472	242.100	589.983
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	207.637	31.809	24.676	13.790	6.392	20.182	13.005	10.995	23.107	16.472	242.100	589.983
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	2.319	0.403	0.511	-	0.511	0.301	0.223	1.105	-	-	4.862
Flyaway Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Distributed Common Ground System - Navy (DCGS-N) is the Navy's portion of the Under Secretary of Defense, Intelligence (USD (I)) DCGS Family of Systems (FoS). The Department of Defense (DoD) has defined a DCGS architecture that will be compatible and interoperable across all of the Services' Intelligence, Surveillance and Reconnaissance (ISR) systems and operations. DCGS accesses and ingests data from space borne, airborne, subsurface, and surface ISR collection assets, intelligence databases and intelligence producers. This collected data is shared across a Joint enterprise using the DCGS Integration Backbone (DIB) and in time, the Defense Intelligence Information Enterprise (DI2E) to enhance access and sharing of ISR information across Joint forces through the use of common enterprise standards and services. DCGS FoS supports Joint Task Force (JTF)-level and below combat operations with critical intelligence for battle management and information dominance across the full spectrum of operations, including peace, conflict, war, and Overseas Contingency Operations (OCO). DCGS is a cooperative effort between the services, agencies, and DoD to provide systems capable of receiving, processing, exploiting, and disseminating data from airborne and national reconnaissance platforms. DCGS-N core components include the Analyst Work Station from the Global Command and Control System (GCCS) - Integrated Imagery and Intelligence (I3), Generic Area Limitation Environment (GALE) Signal Intelligence (SIGINT), Common Geo-positioning Services (CGS), Image Product Library (IPL), Modernized Integrated Database (MIDB), Joint Concentrator Architecture (JCA) and Track Management Services.

The DCGS-N system represents the integration of 1) The processing and exploitation of tactical and Imagery Intelligence (IMINT) and SIGINT; 2) Precision target geopositioning, mensuration, and imagery dissemination capabilities; 3) Selected national IMINT requirements and processing capabilities from the National Geospatial-Intelligence Agency (NGA); and 4) Sharing of Intelligence, Surveillance, Reconnaissance and Targeting (ISR&T) and Command and Control information via DIB, DI2E, and Net-Centric Enterprise Services (NCES) standards with a wide range of customers (e.g., Global Command and Control System - Maritime (GCCS-M)), Joint Mission Planning System (JMPS), and many others.

The DCGS-N Enterprise Node (DEN), which incorporates current DIB standards and DI2E policy, facilitates interoperability and data sharing among the DCGS FoS. DCGS-N ensures compliance with the DoD DCGS network architecture.

The Navy is establishing an ISR Enterprise way ahead that will emphasize a reach back strategy to provide intelligence products to support deployed ship and shore operations. The Navy will also migrate to a Service Oriented Architecture (SOA) that requires the development, integration, and testing of a Maritime ISR Enterprise capability, development and migration of ISR SOA applications, and development and integration to leverage a Common Computing Environment (CCE) and the Intelligence Community Information Technology Enterprise (IC ITE). Additionally, DCGS-N will become the focal point for migration of Maritime Domain Awareness (MDA) fusion and analysis Maritime Fusion & Analysis (MFAS) tool applications for the Navy.

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment		P-1 Line Item Number / Title: 2914 / Distributed Common Ground System-Navy (DCGS-N)
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: N/A	Other Related Program Elements: 0305208N
Line Item MDAP/MAIS Code: 000		
<p>DCGS-N Increment 2 addresses a critical shortfall in Tasking, Collection, Processing, Exploitation, and Dissemination (TCPED) capability and capacity to support operational, tactical planning, and execution across the full range of joint military operations. Existing TCPED shortfalls will be exacerbated by planned Navy, Joint, and Allied fielding of new ISR platforms. Currently fielded systems provide localized processing capabilities that will be overwhelmed in future years without a significant change in the way the Navy processes, exploits and disseminates intelligence data. DCGS-N Increment 2 will deliver all source fusion and analytical capabilities; provide MDA capabilities and integrate TCPED capabilities to improve the use and analysis of sensor and platform data. DCGS-N Increment 2 will be based on an enterprise solution to share this information across commands, services, and agencies to promote shared situational awareness. DCGS-N Increment 2 consists of multiple releases. The first release provides an enhanced Navy ISR enterprise that converges and builds on the DCGS-N Increment 1 and Maritime Domain Awareness Enterprise Nodes; leverages the DI2E; is compliant with the CCE and the IC ITE; federates ISR and TCPED workflow and production improving throughout the automation; exploits new and evolving unmanned systems sensor data; provides Multi-Intelligence (Multi-INT) cross-queuing and modular tools. The second release enhances afloat ISR capabilities by providing a set of software centric tools providing Multi-INT fusion and analysis, behavior prediction and intelligent knowledge management designed to operate in disconnected or denied communications environment. Follow-on releases will be developed based on Fleet requirements.</p> <p>Intelligence Carry-On Program (ICOP) is a suite of multi-source intelligence and analytical capabilities which includes an integrated Three-Dimensional (3-D) operational picture displaying intelligence and other data sources to provide a richer and more complete picture of the battle space on Unit Level platforms. The system supports a full motion video capability that receives, processes, exploits, and disseminates organic and non-organic data as well as the ability to process and correlate Electronic Intelligence (ELINT) and external Communications Intelligence (COMINT Externals). It integrates mature Commercial Off-the-Shelf (COTS) and Government Off-the-Shelf (GOTS) applications with shared storage and communication paths to reach back to the DEN, and it provides data sharing to the Maritime Operations Centers (MOC) and national ISR systems, making tactical users a part of the larger ISR enterprise.</p> <p>ICOP is subset to DCGS-N capabilities for Unit Level platforms. DCGS-N only fields on Force Level platforms. There are currently Unit Level platforms identified to receive permanent ICOP Partial or Full Foundation Kit installations. ICOP Foundation Kits include all cabling and mounting plate foundations for antennas and ICOP workstations. The Unit Level platforms will pull from a ICOP workstation or ICOP workstation and Communications Module 3s (CM3s) System rotatable pool based on deployment. ICOP fielding strategy requires both partial foundation kit and ICOP workstations without CM3s or ICOP workstations, (2) CM3s and full foundation kits based on fleet prioritization. Unit level platforms include cruisers (CG), destroyers (DDG), and amphibious transport docks (LPD-17) platforms. Crypto Modifications (Mods) were added to the CM3 production unit end item in FY16 to meet the new mandate for Type 1 Encryption transmission of sensor data.</p> <p>DCGS-N Increment 1 Product Improvement includes DCGS-N Fleet Introductory Training and training equipment, DCGS-N hardware and software technical refresh, ancillary equipment and upgrades to extend service life and provide the fleet imagery intelligence capability. Equipment support includes the assembly and integration associated with the product improvements or modification.</p>		

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy								<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment						<b>P-1 Line Item Number / Title:</b> 2914 / Distributed Common Ground System-Navy (DCGS-N)				
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): B			<b>Program Elements for Code B Items:</b> N/A			<b>Other Related Program Elements:</b> 0305208N				
<b>Line Item MDAP/MAIS Code:</b> 000										
Exhibits Schedule					Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 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	PRODUCT IMPROVEMENT Afloat				- / 55.028	- / 10.207	- / 3.592	- / 9.299	- / 0.000	- / 9.299
P-40a	PRODUCT IMPROVEMENT Ashore				- / 7.872	- / 2.547	- / 9.084	- / 4.491	- / 0.000	- / 4.491
P-5	1 / ICOP	P-5a			- / 11.570	- / 19.055	- / 12.000	- / 0.000	- / 6.392	- / 6.392
P-5	2 / 2914 Distributed Common Ground System - Navy (DCGS-N) Prior Years				- / 133.167	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
<b>P-40</b>	<b>Total Gross/Weapon System Cost</b>				<b>- / 207.637</b>	<b>- / 31.809</b>	<b>- / 24.676</b>	<b>- / 13.790</b>	<b>- / 6.392</b>	<b>- / 20.182</b>
*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.										
<p><b>Justification:</b> DCGS-N Increment 1 planned procurements in FY18 include (9) DCGS-N Increment 1 technical refreshes that consist of (2) 2-rack Ashore technical refreshes, (4) 1-rack Afloat technical refreshes, (2) End-of-Life Afloat Hardware Upgrades, and (1) End-of-Life Ashore Hardware Upgrades. These DCGS-N installations will replace the currently fielded legacy systems and leverage the Navy's CCE as applicable as well as provide upgrades to extend service life.</p> <p><b>OCO:</b> Due to Operation Enduring Freedom In Theater (OEF T) requirements in Central Command (CENTCOM), including the requirements for all deploying maritime assets to support overall theater Strategic Communications objectives, there is a theater demand for unit level intelligence Processing, Exploitation, and Dissemination (PED) capability, specifically for full motion video (FMV). Commander Fifth Fleet (C5F) requires ICOP capabilities to respond to CENCOM and NAVY-wide OPTASK Visual Information (VI) and multi-intelligence requirements to address current and emerging threats. ICOP will replace legacy IDIS laptops and improve current capabilities to warfighters at the unit level, including direct downlink of intelligence information from a wide-range of theater airborne sensors (e.g. P-3, Predator, Reaper, Scan Eagle, F/A-18, etc.) resulting in 90% improvement in battlespace awareness for the deployed unit. Due to its enhanced capability to process and stream intelligence data from airborne platforms and shipboard video sensors, ICOP has transformed unit level ships into intelligence producers, leading to C5F requesting that ICOP be fielded on all unit level platforms deploying into theater. Specifically, C5F requires 25 ICOP systems (system = 1 ICOP box + 2 CM3s) and associated ICOP foundation kits. The materiel solution at the time consisted of a non-standardized IDIS laptop, which could not meet operational OPTASK VI requirements to disseminate off board FMV/ISR data due to shipboard bandwidth constraints. The initial response to these requirements messages resulted in OPNAV resourcing four ICOP prototypes, a system that was designed to rapidly facilitate data dissemination efforts within current shipboard bandwidth allocations. Only four systems were funded at the time due to risk reduction activities associated with a lack of a completed formal Operational Test event. Since the original requirements messages were released, resourcing the full C5F requirement has become even more critical, as C5F has seen a proliferation of new sensors coming on-line in their AOR, and the expansion of data that is required to get back to fleet commanders has dramatically increased. This not only requires an increased number of ICOP workstations from four to 25, but it also mandates transitioning out the legacy antenna/receivers, which does not ingest Type 1 transmissions inherent with the new manned and unmanned sensor data. Due to the additional sensors and sensor data types, continued requirements are further being levied on every platform to meet OPTASK VI requirements, such as the Fleet Visual Information CONOPs, and the Promulgation of the Visual Information Concept of Operations. C5F requires the requisite materiel solutions (ICOP and CM3s) to meet this growing demand. Also, ICOP has been deemed operationally effective and suitable, and was recommended for fleet release by COMOPTEVFOR.</p> <p>Due to European Reassurance Initiative (ERI); this request supports the planned C6F Forward-Deployed Naval Forces (FDNF) DDG FY20 rotation with full Intelligence Carry-On Program (ICOP) ISR capability. In order to support this rotation cycle, it is necessary to receive funding in FY18 to meet Navy Modernization Process timelines. FY18 activities include shipboard installation drawings (SIDs), and installation contracting. Currently, the following DDGs are planned for rotation: USS Arleigh Burke (DDG 51), USS Roosevelt (DDG 80), USS Bulkeley (DDG 84) and USS Oscar Austin (DDG 79). The USS Oscar Austin is already planned, within the current ICOP budget profile, to receive full ICOP capability. However, the three remaining platforms would require an upgrade, which is not included in the current budget outlay. It is critical to outfit all C6F FDNF ships with full ICOP ISR processing, exploitation and dissemination (PED) capability to address NATO Reassurance Measures and theater maritime and ballistic missile threats.</p>										

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment		<b>P-1 Line Item Number / Title:</b> 2914 / Distributed Common Ground System-Navy (DCGS-N)
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): B	<b>Program Elements for Code B Items:</b> N/A	<b>Other Related Program Elements:</b> 0305208N
<b>Line Item MDAP/MAIS Code:</b> 000  As demonstrated during the C6F/Maritime Theater Missile Defense (MTMD) hosted "At-Sea-Demonstration 2015," the ICOP capability significantly enhanced C6F's ability to rapidly provide situational awareness and common tactical pictures with the C6F Maritime Operations Center, maritime units supporting NATO's Readiness Action Plan and the European Phased Adaptive Approach.  The FY18 OCO request adds an additional (3) platforms (11 total) towards meeting the original 25 workstation requirement to enable C5F to meet operational requirements in theater. In addition, The FY18 OCO request includes (3) platforms (3 total) towards meeting the original 4 workstation requirement to enable C6F to meet operational requirements.  FY18 ICOP System (System = 1 ICOP workstation + 2 CM3s) and Foundation Kits (Foundation Kit = all cabling and mounting plate foundations for antennas/receivers). Foundation Kits are permanent installations. Procurements for Systems and Foundations Kits = \$3.482M Installation and DSA = \$2.910M QTY (6) ICOP systems and (6) Foundation Kits Criteria: Major equipment - purchase of specialized, theater-specific equipment		



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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy															Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10							P-1 Line Item Number / Title: 2914 / Distributed Common Ground System-Navy (DCGS-N)								Aggregated Items Title: PRODUCT IMPROVEMENT Afloat					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring -- Product Improvement Afloat																				
DCGS-N Tech Refresh/Upgrade -- Procurement <sup>(1)</sup>	A		1,706.250	12	20.475	432.500	8	3.460	549.250	4	2.197	722.833	6	4.337	-	-	-	722.833	6	4.337
DCGS-N Tech Refresh/Upgrade -- Installation	A		-	-	23.903	-	-	6.250	-	-	0.900	-	-	4.100	-	-	-	-	-	4.100
Subtotal: B Kits/Recurring -- Product Improvement Afloat			-	-	44.378	-	-	9.710	-	-	3.097	-	-	8.437	-	-	-	-	-	8.437
Support Cost																				
Equipment Support	A		-	-	4.774	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Production Support	A		-	-	2.802	-	-	0.225	-	-	0.143	-	-	0.282	-	-	-	-	-	0.282
DSA	A		-	-	3.074	-	-	0.272	-	-	0.352	-	-	0.580	-	-	-	-	-	0.580
Subtotal: Support Cost			-	-	10.650	-	-	0.497	-	-	0.495	-	-	0.862	-	-	-	-	-	0.862
Total			-	-	55.028	-	-	10.207	-	-	3.592	-	-	9.299	-	-	0.000	-	-	9.299
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
Remarks:																				
Models of Systems Affected: Ship																				
Type Modification: Tech Refresh/Upgrade																				
Tech Refresh/Upgrade integration procures Commerical Off-The-Shelf/Non-Developmental Item (COTS/NDI) equipment to replace obsolete and unsupportable equipment for the DCGS-N program for the processing and exploitation of tactical and Imagery Intelligence (IMINT) and Signal Intelligence (SIGINT); Precision target geopositioning, mensuration, and imagery dissemination capabilities; Selected national IMINT requirements and processing capabilities from the National Geospatial-Intelligence Agency (NGA); Sharing of Intelligence, Surveillance, Reconnaissance and Targeting (ISRT) and Command and Control (C2) information via DCGS Integrated Backbone (DIB) and Net-Centric Enterprise Services (NCES) standards. Specifically, this funds tech refresh/upgrades/Engineering Change Proposals (ECPs) to its subsystems to provide access and ingest data from space borne, airborne, subsurface, and surface ISR collection assets, intelligence databases and intelligence producers.																				
Footnotes:																				
<sup>(1)</sup> JSIPS-N Tech Refresh/Upgrade funding has been removed from this section and moved to Distributed Common Ground System - Navy Prior Years. This accounts for the difference in prior year funding. FY18 increase in Afloat product improvement procurement unit cost is a result of FY17 procuring (4) DCGS-N Increment 1 technical refreshes that consist of (1) 1-rack Afloat technical refresh and (3) End-of-Life Afloat Hardware Upgrades whereas FY18 consist of (6) DCGS-N Increment 1 technical refreshes that consist of (4) 1-rack Afloat technical refresh and (2) End-of-Life Afloat Hardware Upgrades. The procurement of fewer End-of-Life Afloat Hardware upgrades and more 1-rack Afloat technical refreshes in FY18 drive the cost closer to the more expensive 1-rack Afloat technical refreshes. Procurement costs range from \$450K for a End-of-Life Afloat Hardware Upgrade to \$1,080K for a 1-rack Afloat technical refresh. FY18 increase in Afloat product improvement installation unit cost is a result of FY17 installing (3) DCGS-N Increment 1 technical refreshes that consist of (0) 1-rack Afloat technical refresh and (3) End-of-Life Afloat Hardware Upgrades whereas FY18 consist of (5) DCGS-N Increment 1 technical refreshes that consist of (4) 1-rack Afloat technical refresh and (1) End-of-Life Afloat Hardware Upgrades. The installation of fewer End-of-Life Afloat Hardware upgrades and more 1-rack Afloat technical refreshes in FY18 drive the cost closer to the more expensive 1-rack Afloat technical refreshes. Installation costs range from \$300K for a End-of-Life Afloat Hardware Upgrade to \$950K for a 1-rack Afloat technical refresh. DCGS-N Inc 1 Block 1 and 2 unit costs represent an average cost based on 3 Rack, 2 Rack, 1 Rack, and End-of-Life Hardware Upgrade configurations dependent on specific platform (CVN, LHD, LCC, LHA), network, infrastructure versions, and alignment with the Navy's Network Infrastructure CCE. In addition, unit costs continue to be updated based on actuals costs, locality and availability of platforms, and specific integration tasking associated with external dependent systems (e.g. Global Command and Control System - Maritime (GCCS-M), Radiant Mercury (RM), and others). DCGS-N Increment 1 planned procurements in FY18 include (9) DCGS-N Increment 1 technical refreshes that consist of (2) 2-rack Ashore technical refreshes, (4) 1-rack Afloat technical refreshes, (2) End-of-Life Afloat Hardware Upgrades, and (1) End-of-Life Ashore Hardware Upgrades. These DCGS-N installations will replace the currently fielded legacy systems and leverage the Navy's Common Computing Environment (CCE)to extend service life. 1st QTR installations reflected in the Installation Schedule are funded in the PY in order to be able to fund the installation contracts 90 days prior to the beginning of shipboard installation work. 90 days are needed to allow sufficient time for the contractor to plan the work schedule, order material, and perform necessary fabrication.																				

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy															Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10							P-1 Line Item Number / Title: 2914 / Distributed Common Ground System-Navy (DCGS-N)								Aggregated Items Title: PRODUCT IMPROVEMENT Ashore					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring -- Product Improvement Ashore																				
DCGS-N Tech Refresh/Upgrade -- Procurement <sup>(2)</sup>	A		890.800	5	4.454	773.500	2	1.547	873.833	6	5.243	857.667	3	2.573	-	-	-	857.667	3	2.573
DCGS-N Tech Refresh/Upgrade -- Installation	A		-	-	3.130	-	-	0.900	-	-	3.500	-	-	1.750	-	-	-	-	-	1.750
Subtotal: B Kits/Recurring -- Product Improvement Ashore			-	-	7.584	-	-	2.447	-	-	8.743	-	-	4.323	-	-	-	-	-	4.323
Support Cost																				
Production Support	A		-	-	0.288	-	-	0.100	-	-	0.341	-	-	0.168	-	-	-	-	-	0.168
Subtotal: Support Cost			-	-	0.288	-	-	0.100	-	-	0.341	-	-	0.168	-	-	-	-	-	0.168
Total			-	-	7.872	-	-	2.547	-	-	9.084	-	-	4.491	-	-	0.000	-	-	4.491
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
Remarks: Models of Systems Affected: Shore Type Modification: Tech Refresh/Upgrades																				
Tech Refresh/Upgrade integration procures Commerical Off-The-Shelf/Non-Developmental Item (COTS/NDI) equipment to replace obsolete and unsupportable equipment for the DCGS-N program to include the processing and exploitation of tactical and Imagery Intelligence (IMINT) and Signal Intelligence (SIGINT); Precision target geopositioning, mensuration, and imagery dissemination capabilities; Selected national IMINT requirements and processing capabilities from the National Geospatial-Intelligence Agency (NGA); Sharing of Intelligence, Surveillance, Reconnaissance and Targeting (ISRT) and Command and Control (C2) information via DCGS Integrated Backbone (DIB) and Net-Centric Enterprise Services (NCES) standards. Specifically, this funds tech refresh/upgrades/Engineering Change Proposals (ECPs) to its subsystems to provide access and ingest data from space borne, airborne, subsurface, and surface ISR collection assets, intelligence databases and intelligence producers.																				
Footnotes: <sup>(2)</sup> JSIPS-N Tech Refresh/Upgrade funding has been removed from this section and moved to Distributed Common Ground System - Navy Prior Years. This accounts for the difference in prior year funding. DCGS-N Inc 1 Block 1 and Block 2 unit costs represent an average cost based on 5 Rack, 3 Rack, 2 Rack, 1 Rack, and End-of-Life Upgrade configurations dependent on specific platform (CVN, LHD, LCC, LHA), network, infrastructure versions, and alignment with the Navy's Network Infrastructure (Common Computing Environment (CCE)). In addition, unit costs continue to be updated based on actuals costs, locality and availability of platforms, and specific integration tasking associated with external dependent systems (e.g. Global Command and Control System - Maritime (GCCS-M), Radiant Mercury (RM), and others). DCGS-N Increment 1 planned procurements in FY18 include (9) DCGS-N Increment 1 technical refreshes that consist of (2) 2-rack Ashore technical refreshes, (4) 1-rack Afloat technical refreshes, (2) End-of-Life Afloat Hardware Upgrades, and (1) End-of-Life Ashore Hardware Upgrades. These DCGS-N installations will replace the currently fielded legacy systems and leverage the Navy's Common Computing Environment (CCE) as applicable as well as provide upgrades to extend service life.																				

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Exhibit P-5, Cost Analysis: FY 2018 Navy												Date: May 2017						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10						P-1 Line Item Number / Title: 2914 / Distributed Common Ground System-Navy (DCGS-N)						Item Number / Title [DODIC]: 1 / ICOP						
ID Code (A=Service Ready, B=Not Service Ready) :									MDAP/MAIS Code:									
Resource Summary				Prior Years		FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total				
Procurement Quantity <i>(Units in Each)</i>				-		-		-		-		-		-				
Gross/Weapon System Cost <i>(\$ in Millions)</i>				11.570		19.055		12.000		0.000		6.392		6.392				
Less PY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Net Procurement (P-1) <i>(\$ in Millions)</i>				11.570		19.055		12.000		0.000		6.392		6.392				
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Total Obligation Authority <i>(\$ in Millions)</i>				11.570		19.055		12.000		0.000		6.392		6.392				
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																		
Initial Spares <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>				-		-		-		-		-		-				
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Hardware - ICOP Cost																		
Recurring Cost																		
1.1.1) ICOP Foundation Kit Procurement <sup>(†)</sup> (3)	55.000	9	0.495	27.093	43	1.165	27.000	30	0.810	-	-	0.000	55.000	6	0.330	55.000	6	0.330
1.1.2) ICOP System Procurement <sup>(†)</sup> (4)	105.814	43	4.550	490.000	18	8.820	490.000	8	3.920	-	-	0.000	490.000	6	2.940	490.000	6	2.940
1.1.3) Back Fit Crypto Mods <sup>(†)</sup> (5)	-	-	0.000	40.000	6	0.240	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	5.045	-	-	10.225	-	-	4.730	-	-	0.000	-	-	3.270	-	-	3.270
Subtotal: Hardware - ICOP Cost	-	-	5.045	-	-	10.225	-	-	4.730	-	-	0.000	-	-	3.270	-	-	3.270
Hardware - INSTALLATIONS Cost																		
Recurring Cost																		
2.1.1) ICOP Foundation Kit Installation Afloat <sup>(6)</sup>	-	-	3.960	-	-	7.130	-	-	6.243	-	-	0.000	-	-	2.640	-	-	2.640
Subtotal: Recurring Cost	-	-	3.960	-	-	7.130	-	-	6.243	-	-	0.000	-	-	2.640	-	-	2.640
Subtotal: Hardware - INSTALLATIONS Cost	-	-	3.960	-	-	7.130	-	-	6.243	-	-	0.000	-	-	2.640	-	-	2.640
Support Cost																		
3.1) ICOP Foundation Kit Production Support	-	-	0.058	-	-	0.076	-	-	0.052	-	-	0.000	-	-	0.021	-	-	0.021

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Exhibit P-5, Cost Analysis: FY 2018 Navy													Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10						P-1 Line Item Number / Title: 2914 / Distributed Common Ground System-Navy (DCGS-N)						Item Number / Title [DODIC]: 1 / ICOP						
ID Code (A=Service Ready, B=Not Service Ready) :									MDAP/MAIS Code:									
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
3.2) ICOP System Production Support	-	-	0.296	-	-	0.589	-	-	0.255	-	-	0.000	-	-	0.191	-	-	0.191
3.3) ICOP Foundation Kit DSA	-	-	2.211	-	-	1.035	-	-	0.720	-	-	0.000	-	-	0.270	-	-	0.270
Subtotal: Support Cost	-	-	2.565	-	-	1.700	-	-	1.027	-	-	0.000	-	-	0.482	-	-	0.482
Gross/Weapon System Cost	-	-	11.570	-	-	19.055	-	-	12.000	-	-	0.000	-	-	6.392	-	-	6.392
Remarks:																		
Intelligence Carry-On Program (ICOP) is a suite of multi-source intelligence and analytical capabilities which includes an integrated Three-Dimensional (3-D) operational picture displaying intelligence and other data sources to provide a richer and more complete picture of the battle space on Unit Level platforms. The system supports a full motion video capability that receives, processes, exploits, and disseminates organic and non-organic data as well as the ability to process and correlate Electronic Intelligence (ELINT) and external Communications Intelligence (COMINT Externals). It integrates a menu of mature Commercial Off-the-Shelf (COTS) and Government Off-the-Shelf (GOTS) applications with shared storage and communication paths to reach back to the DCGS-N Enterprise Node (DEN), and to provide data sharing to the Maritime Operations Centers (MOC) and national ISR systems, making tactical users a part of the larger Intelligence, Surveillance and Reconnaissance (ISR) enterprise.																		
(t) indicates the presence of a P-5a																		
Footnotes:																		
(3) FY18 (OCO) are Full Foundation Kits only which increases the average unit cost in FY18 to the more expensive Full Foundation Kit. FY15 and FY18 (OCO) are Full Foundation Kits only and FY16, FY17 (OCO) are a mixture of both Partial and Full Foundation Kits. Procurement cost range from \$15K for a Partial and \$55K for a Full Foundation Kit. After PB17, the ICOP fielding strategy was updated to include a mixture of partial and full ICOP workstation and Foundation Kit configurations. Unit Cost and Quantities have been updated to reflect the new fielding strategy. Fleet prioritization determines which unit level platform receives a partial or full ICOP workstations and Foundation Kit configuration. ICOP Foundation Kit procurements include all cabling and mounting plate foundations for an ICOP workstation and antennas/receivers. Quantities consist of two configurations depending on the platform receiving the capability. The first configuration is a full foundation kit with cabling and mounting plate foundations for both the ICOP workstation and antennas/receivers. The second configuration is a partial foundation kit with mounting plate foundations for an ICOP workstation only. Foundation Kit unit price varies depending on platform and Full or Partial Foundation Kit, which is determined based on fleet prioritization. ICOP Partial and Full Foundation Kits will be permanently installed on Unit Level platforms. The Unit Level platforms with permanent Foundation Kits will pull from the ICOP workstation and CM3 rotatable pool when deploying.																		
(4) Prior Years procurements consisted of both full and partial ICOP capabilities whereas FY16, FY17 (OCO), and FY18 (OCO) procurements consist of full ICOPs with both workstations and CM3s. Procurement costs range from \$50K for a partial to \$450K for a Full (without Crypto Mods (Prior Years)). Crypto Mods were added to CM3s starting in FY16 and therefore increased Full procurement unit cost to \$490K in FY16 and out. ICOP System procurements include an ICOP workstation or an ICOP workstation and (2) CM3 Antennas. (2) CM3 Antennas provides the platform with approximately 360 degree coverage to receive non-organic sensor data. ICOP Systems will not be permanently installed on a Platform. After procurement, ICOP workstations and ICOP workstations with CM3s Systems will become a part of a rotatable pool for deploying Unit Level Platforms. ICOP quantities consist of two configurations depending on the platform receiving the capability. The first configuration (Full) is a ICOP unit made up of an ICOP workstation and (2) CM3 antennas. The second configuration (partial) is an ICOP unit without any CM3s. ICOP system unit price varies depending on whether the platform will receive an ICOP workstation and CM3s (antennas/receivers) or just an ICOP workstation, which is determined based on fleet prioritization.																		
(5) Crypto Modifications (Mods) were added to the CM3 production unit end items in FY16 to meet the new mandate for Type 1 Encryption transmission of sensor data. FY16 includes procurement of (6) Crypto Mods to back fit CM3s procured in FY15. Crypto Mods are included as a CM3 end item in FY16 and out.																		
(6) FY16 and FY17 (OCO) Foundation Kits are a mixture of Partial and Full installations whereas Prior Year and FY18 (OCO) are Full Foundation Kit installations only which increases the average unit cost in Prior Year and FY18 to the more expensive Full Foundation Kit installation cost.																		

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<b>Exhibit P-5a, Procurement History and Planning: FY 2018 Navy</b>								<b>Date:</b> May 2017				
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 10				<b>P-1 Line Item Number / Title:</b> 2914 / Distributed Common Ground System-Navy (DCGS-N)				<b>Item Number / Title [DODIC]:</b> 1 / ICOP				

<b>Cost Elements</b>	<b>O C O</b>	<b>FY</b>	<b>Contractor and Location</b>	<b>Method/Type or Funding Vehicle</b>	<b>Location of PCO</b>	<b>Award Date</b>	<b>Date of First Delivery</b>	<b>Qty (Each)</b>	<b>Unit Cost (\$ K)</b>	<b>Specs Avail Now?</b>	<b>Date Revision Available</b>	<b>RFP Issue Date</b>
1.1.1) ICOP Foundation Kit Procurement		2016	BAE Systems / San Diego, CA	C / FFP	San Diego	Jul 2016	Aug 2016	43	27.093	N	Oct 2014	
1.1.1) ICOP Foundation Kit Procurement	✓	2017	BAE Systems / San Diego, CA	C / FFP	San Diego	Jun 2017	Jul 2017	30	27.000	N	Oct 2014	
1.1.1) ICOP Foundation Kit Procurement	✓	2018	BAE Systems / San Diego, CA	C / FFP	San Diego	Oct 2017	Nov 2017	6	55.000	N	Oct 2014	
1.1.2) ICOP System Procurement		2016	BAE Systems / San Diego, CA	C / FFP	San Diego	Jul 2016	Oct 2016	18	490.000	N	Oct 2014	
1.1.2) ICOP System Procurement	✓	2017	BAE Systems / San Diego, CA	C / FFP	San Diego	Jun 2017	Sep 2017	8	490.000	N	Oct 2014	
1.1.2) ICOP System Procurement	✓	2018	BAE Systems / San Diego, CA	C / FFP	San Diego	Oct 2017	Jan 2018	6	490.000	N	Oct 2014	
1.1.3) Back Fit Crypto Mods		2016	BAE Systems <sup>(7)</sup> / San Diego, CA	C / FFP	San Diego	Jul 2016	Aug 2016	6	40.000	N	May 2016	

**Footnotes:**

<sup>(7)</sup> Crypto Mods consist of COTS items.

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Exhibit P-5, Cost Analysis: FY 2018 Navy										Date: May 2017									
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10					P-1 Line Item Number / Title: 2914 / Distributed Common Ground System-Navy (DCGS-N)					Item Number / Title [DODIC]: 2 / 2914 Distributed Common Ground System - Navy (DCGS-N) Prior Years									
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:									
Resource Summary				Prior Years		FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total					
Procurement Quantity (Units in Each)				-		-		-		-		-		-					
Gross/Weapon System Cost (\$ in Millions)				133.167		0.000		0.000		0.000		0.000		0.000					
Less PY Advance Procurement (\$ in Millions)				-		-		-		-		-		-					
Net Procurement (P-1) (\$ in Millions)				133.167		0.000		0.000		0.000		0.000		0.000					
Plus CY Advance Procurement (\$ in Millions)				-		-		-		-		-		-					
Total Obligation Authority (\$ in Millions)				133.167		0.000		0.000		0.000		0.000		0.000					
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																			
Initial Spares (\$ in Millions)				-		-		-		-		-		-					
Gross/Weapon System Unit Cost (\$ in Thousands)				-		-		-		-		-		-					
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																			
Cost Elements		Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
		Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Hardware - 2914 DCGS-N Prior Year Cost																			
Recurring Cost																			
1.1.1) JSIPS-N Product Improvement Prior Years <sup>(8)</sup>		1,764.000	23	40.572	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
1.1.2) DCGS-N Increment 1 Initial FRP Systems Prior Years <sup>(9)</sup>		3,086.500	30	92.595	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost		-	-	133.167	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Hardware - 2914 DCGS-N Prior Year Cost		-	-	133.167	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Gross/Weapon System Cost		-	-	133.167	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Remarks:																			
Includes prior year funding for 2914 Distributed Common Ground System - Navy (DCGS-N) for Joint Services Imagery Processing System - Navy (JSIPS-N) and Distributed Common Ground System - Navy (DCGS-N) Increment 1 Ashore and Afloat initial Full Rate Production (FRP) Systems. P3As are no longer shown because funding is prior year only.																			
Footnotes:																			
<sup>(8)</sup> Joint Services Imagery Processing System - Navy (JSIPS-N) Product Improvement Ashore and Afloat Prior Years cost. Includes both Procurement and Installation cost.																			
<sup>(9)</sup> Distributed Common Ground Systems (DCGS-N) Increment 1 Afloat and Ashore Initial Full Rate Production (FRP) Systems Prior Years cost. Includes both Procurement and Installation. PB16 and PB17 inadvertently did not include DCGS-N Increment 1 Afloat Prior year (\$57.9M). P3A was last shown in PB15. \$57.9M was added back into Prior Year cost to account for Total DCGS-N Increment 1 Prior Year.																			

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy								Date: May 2017				
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment						P-1 Line Item Number / Title: 2915 / CANES						
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A					Other Related Program Elements: 0303138N				
Line Item MDAP/MAIS Code: M417												
Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	1,068.991	274.641	212.030	322.754	0.000	322.754	419.686	406.255	364.389	410.379	2,742.031	6,221.156
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	1,068.991	274.641	212.030	322.754	0.000	322.754	419.686	406.255	364.389	410.379	2,742.031	6,221.156
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	1,068.991	274.641	212.030	322.754	0.000	322.754	419.686	406.255	364.389	410.379	2,742.031	6,221.156
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	9.000	3.573	11.645	-	11.645	16.295	15.705	16.804	6.241	Continuing	Continuing
Flyaway Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-
Description: Consolidated Afloat Networks & Enterprise Services (CANES) is the Navy's only Program of Record to replace existing afloat networks and provide the necessary infrastructure for applications, systems, and services to dominate the cyber warfare domain. CANES is the technical and infrastructure consolidation of existing, separately managed afloat networks including Integrated Shipboard Network Systems (ISNS), Combined Enterprise Regional Information Exchange System - Maritime, Sensitive Compartmented Information (SCI) Networks, and Submarine Local Area Network. These legacy afloat network designs are currently End of Life and CANES will replace these unaffordable and obsolete networks.  The fundamental goal of CANES is to bring Infrastructure as a Service and Platform as a Service, within which current and future iterations of Navy Tactical Network computing and storage capabilities will reside. CANES will provide complete infrastructure inclusive of hardware, software, processing, storage, and end user devices for Unclassified, Coalition, Secret and SCI for all basic network services (email, web, chat, collaboration) to a wide variety of Navy surface combatants, submarines, Maritime Operations Centers (MOC), Regional Network Operations and Security Centers (RNOSC) and Aircraft. In addition, hosted applications and systems inclusive of Command and Control, Intelligence, Surveillance and Reconnaissance, Information Operations, Logistics and Business domains require the CANES infrastructure to operate in the tactical environment. Integrating these applications and systems is accomplished through application integration, the engineering process used to evaluate and validate compatibility between CANES and Navy-validated applications, systems and services that will utilize the CANES infrastructure and services. Specific programs, such as Distributed Common Ground System - Navy, Global Command and Control System - Maritime, Naval Tactical Command Support System, and Undersea Warfare Decision Support System, are dependent on the CANES common computing environment to field, host, and sustain their capability because they no longer provide their own hardware. CANES requires that Automated Digital Network System (ADNS) field prior to or concurrently with CANES due to architectural reliance between the two programs.  CANES will develop technical updates on a rolling four year hardware baseline and a two year software baseline to ensure no cyber security vulnerabilities exist due to hardware and software obsolescence. Fielding of CANES hardware and software baselines will be in alignment with the Chief of Naval Operation's Optimized Fleet Response Plan (OFRP). Technology refresh of existing CANES systems will be inclusive of both the latest CANES hardware and software baselines and will be executed on each ship no later than every six years. CANES is based on the overarching concept of reducing the number of afloat networks and providing enhanced efficiency through a single engineering focus on integrated technical solutions. This will allow for streamlined acquisition, contracting, and test events, and significant lifecycle efficiencies through consolidation of multiple current configuration management baselines, logistics, and training efforts into a unified support structure.												

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy								<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment						<b>P-1 Line Item Number / Title:</b> 2915 / CANES				
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A			<b>Program Elements for Code B Items:</b> N/A			<b>Other Related Program Elements:</b> 0303138N				
<b>Line Item MDAP/MAIS Code:</b> M417										
Exhibits Schedule					Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 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	5F010/5F776 CANES - Ashore Non-MIP				- / 9.357	- / 0.000	- / 0.000	- / 2.417	- / 0.000	- / 2.417
P-5	1 / CANES				- / 179.317	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	1 / 5F010/5F777 CANES - Afloat Non-MIP (TBD)				- / 880.317	- / 274.641	- / 212.030	- / 320.337	- / 0.000	- / 320.337
<b>P-40</b>	<b>Total Gross/Weapon System Cost</b>				<b>- / 1,068.991</b>	<b>- / 274.641</b>	<b>- / 212.030</b>	<b>- / 322.754</b>	<b>- / 0.000</b>	<b>- / 322.754</b>
<p>*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.</p> <p>Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.</p>										
<p><b>Justification:</b></p> <p>The FY18 increase in the CANES funding profile optimizes a larger percentage of Chief of Naval Operations ship availabilities to mitigate heightened cyber security threats across Navy tactical networks and supports the Deputy Secretary of Defense direction to remove End of Life (EOL) Windows Operating Systems software from the Fleet as quickly as feasible. Microsoft's end of cyber security support for legacy versions of Windows, as well as networks that rely on obsolete hardware and software, are driving increased sustainment costs, reducing operational availability and creating critical cyber security vulnerability in Navy Tactical Networks. Replacing these legacy networks and modernizing the tactical environment with CANES is the cornerstone for all C4ISR investments. The program has demonstrated a robust production and installation industrial base capable of executing the planned work in FY18.</p> <p>FY 2018 - CANES funds are for the procurement of (24) Afloat production units (2 Force Level, 11 Unit Level, 11 Subs), (13) Technical Insertion units (1 Force Level, 9 Unit Level, 3 Subs), and (1) Afloat First Article, with integration and associated costs for pre-installation design and the installation of (13) Afloat production units and (11) Technical Insertion units. CANES funds will also be used for the procurement and installation of (1) Ashore production unit.</p> <p>It is important to note that procurement quantities across the FYDP are the same CANES end item product referenced in CANES Intell LI 2925. Installation quantities represent sites receiving CANES as also referenced in LI 2925. The associated dollars in this exhibit represent the non-MIP portions of the CANES enclave.</p> <p>The decrease in average unit installation cost from FY17 to FY18 is due to a reduced number of more expensive Force Level (CVN, LHD) units in the FY18 installation plan. FY17 quantities were adjusted from PB17 due to fact of life fielding plan changes driven by installation availability schedules, resulting in a different mix of platforms procured and installed.</p> <p>FY17 quantities were adjusted from PB17 due to fact of life fielding plan changes driven by installation availability schedules, resulting in a different mix of platforms procured and installed.</p>										



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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy														Date: May 2017						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10						P-1 Line Item Number / Title: 2915 / CANES						Aggregated Items Title: 5F010/5F776 CANES - Ashore Non-MIP								
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring																				
CANES - Ashore 5F010/5F776 (Non-MIP) -- Procurement (1)	A		1,818.500	2	3.637	-	-	-	-	-	-	1,346.000	1	1.346	-	-	-	1,346.000	1	1.346
CANES - Ashore 5F010/5F776 (Non-MIP) -- Installation	A		-	-	2.110	-	-	-	-	-	-	-	-	1.000	-	-	-	-	-	1.000
Subtotal: B Kits/Recurring			-	-	5.747	-	-	-	-	-	-	-	-	2.346	-	-	-	-	-	2.346
B Kits/Non-Recurring																				
CANES - Ashore First Articles (Non-MIP) (2)	A		3,481.000	1	3.481	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: B Kits/Non-Recurring			-	-	3.481	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Support Cost																				
CANES - Ashore Production Support (Non-MIP)	A		-	-	0.129	-	-	-	-	-	-	-	-	0.071	-	-	-	-	-	0.071
Subtotal: Support Cost			-	-	0.129	-	-	-	-	-	-	-	-	0.071	-	-	-	-	-	0.071
Total			-	-	9.357	-	-	0.000	-	-	0.000	-	-	2.417	-	-	0.000	-	-	2.417
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
Remarks: Models of Systems Affected: Consolidated Afloat Networks & Enterprise Services (CANES) Non-MIP																				
The consolidation of existing Ashore Network programs of record designed to provide an agile, responsive Common Computing Environment (CCE) and the eventual addition of Afloat Core Services (ACS) within and upon which application developers will host Command and Control, Warfare, Intelligence, Logistics, and business and education applications and services for Maritime Operation Command (MOC), Regional Network Operations and Security Centers (RNOSC) and Technical Training Equipment (TTE).																				
Footnotes: (1) -Ashore procurement quantities are detailed as follows: Technical Training Equipment (TTE) - PY (2), FY18 (1), FY19-FY22 (0); Maritime Operation Center (MOC) - FY16-FY18 (0); FY19(3), FY20 (2), FY21 (3). -A MOC is a fully operational system configuration. A TTE configuration is a subset of a MOC configuration. This scale difference accounts for the fluctuation in per unit costs across fiscal years commensurate with the procurement quantities outlined in above note. -TTE has no associated DSA requirements. (2) Production Lead Time is 8 months for First Articles. First Articles are defined as necessary production design drawings, environmental (shock and vibration) qualifications, logistics and training artifacts as well as a certified tested baseline provided to the government for each platform first of its kind. All following articles of the same variant require a Production Lead Time of 5 months for Ashore units and 6 months for afloat units. Total Ashore lead time, including 1 month Admin lead time, is 6 months. Ashore production lead times require one month less than Afloat production lead times due to the long lead time afloat production quality racks and minimized shock and vibration requirements for shore facilities. CANES First Articles are not installed. First Article average unit cost fluctuations are attributable to variances in system configuration requirements among shore sites. A shore training unit (TTE) has fewer users and runs fewer applications than a shore Maritime Operations Center (MOC). MOCs are larger in scale compared to the shore training sites and represent a super set of users, applications and connected systems. The prior year Ashore First Article procurement is one training unit.																				

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Exhibit P-5, Cost Analysis: FY 2018 Navy													Date: May 2017								
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10							P-1 Line Item Number / Title: 2915 / CANES						Item Number / Title [DODIC]: 1 / CANES								
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:											
Resource Summary				Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
Procurement Quantity <i>(Units in Each)</i>				-			-			-			-			-			-		
Gross/Weapon System Cost <i>(\$ in Millions)</i>				179.317			0.000			0.000			0.000			0.000			0.000		
Less PY Advance Procurement <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Net Procurement (P-1) <i>(\$ in Millions)</i>				179.317			0.000			0.000			0.000			0.000			0.000		
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Total Obligation Authority <i>(\$ in Millions)</i>				179.317			0.000			0.000			0.000			0.000			0.000		
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																					
Initial Spares <i>(\$ in Millions)</i>				-			-			-			-			-			-		
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>				-			-			-			-			-			-		
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																					
Cost Elements	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total					
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)			
Flyaway - European Reassurance Initiative Cost																					
Non Recurring Cost																					
1.1.1) European Reassurance Initiative.	80.000	5	0.400	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000			
Subtotal: Non Recurring Cost	-	-	0.400	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000			
Subtotal: Flyaway - European Reassurance Initiative Cost	-	-	0.400	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000			
Hardware - Operation Rolling Thunder (ORT) Cost																					
Recurring Cost																					
2.1.1) ORT - Prior Year	359.566	53	19.057	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000			
Subtotal: Recurring Cost	-	-	19.057	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000			
Subtotal: Hardware - Operation Rolling Thunder (ORT) Cost	-	-	19.057	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000			
Hardware - Automated Digital Network System (ADNS) Cost																					
Recurring Cost																					
3.1.1) ADNS Inc II/III Prior Year	1,278.880	125	159.860	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000			
Subtotal: Recurring Cost	-	-	159.860	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000			
Subtotal: Hardware - Automated Digital Network System (ADNS) Cost	-	-	159.860	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000			

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Exhibit P-5, Cost Analysis: FY 2018 Navy												Date: May 2017						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10						P-1 Line Item Number / Title: 2915 / CANES						Item Number / Title [DODIC]: 1 / CANES						
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 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Gross/Weapon System Cost	-	-	179.317	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 10		<b>P-1 Line Item Number / Title:</b> 2915 / CANES			<b>Modification Number / Title:</b> 1 / 5F010/5F777 CANES - Afloat Non-MIP	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	880.317	274.641	212.030	320.337	0.000	320.337
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	880.317	274.641	212.030	320.337	0.000	320.337
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
<b>Total Obligation Authority</b> <i>(\$ in Millions)</i>	<b>880.317</b>	<b>274.641</b>	<b>212.030</b>	<b>320.337</b>	<b>0.000</b>	<b>320.337</b>
<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>	-	-	-	-	-	-
<b>Description:</b> The consolidation of existing Afloat Network programs of record designed to provide an agile, responsive Common Computing Environment (CCE) and afloat Core Services (ACS) within and upon which application developers will host Command and Control, Warfare, Intelligence, Logistics, and business and education applications and services. Migration of Non-Classified Enclave (NCE) capabilities into the CANES baseline.						

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy						<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 10			<b>P-1 Line Item Number / Title:</b> 2915 / CANES			<b>Modification Number / Title:</b> 1 / 5F010/5F777 CANES - Afloat Non-MIP	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :					<b>MDAP/MAIS Code:</b>		
<b>Models of Systems Affected:</b> Consolidated Afloat Networks & Enterprise Services (CANES) Non-MIP			<b>Modification Type:</b> TBD			<b>Related RDT&amp;E PEs:</b> 0303138N	
<b>Financial Plan</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
<b>Procurement</b>							
<i>Modification Item 1 of 1:</i> 5F010/5F777 CANES - Afloat Non-MIP							
B Kits							
Recurring							
1.1.1) CANES - Afloat 5F010/5F777 (Non-MIP) - NonOrganic <sup>(3)</sup>	67 / 426.005	6 / 44.921	12 / 78.599	24 / 125.254	- / -	24 / 125.254	
1.1.2) CANES - Afloat Technical Insertion (Non-MIP) - NonOrganic <sup>(4)</sup>	- / -	3 / 11.000	10 / 36.040	13 / 46.187	- / -	13 / 46.187	
1.1.3) CANES - Service Life Extension Program (SLEP) (Non-MIP) - NonOrganic	8 / 8.424	- / -	- / -	- / -	- / -	- / -	
<i>Subtotal: Recurring</i>	- / 434.429	- / 55.921	- / 114.639	- / 171.441	- / -	- / 171.441	
Non-Recurring							
1.2.1) CANES - Afloat First Articles (Non-MIP) - Organic <sup>(5)</sup>	9 / 54.780	1 / 8.747	1 / 8.000	1 / 7.563	- / -	1 / 7.563	
1.2.2) CANES - Non-Recurring Engineering (Non-MIP) - Organic	- / 26.907	- / -	- / -	- / -	- / -	- / -	
<i>Subtotal: Non-Recurring</i>	- / 81.687	- / 8.747	- / 8.000	- / 7.563	- / -	- / 7.563	
<i>Subtotal: 5F010/5F777 CANES - Afloat Non-MIP</i>	84 / 516.116	10 / 64.668	23 / 122.639	38 / 179.004	- / -	38 / 179.004	
<i>Subtotal: Procurement, All Modification Items</i>	- / 516.116	- / 64.668	- / 122.639	- / 179.004	- / -	- / 179.004	
<b>Support (All Modification Items)</b>							
2.1) CANES - Afloat Production Support (Non-MIP)	- / 22.131	- / 2.943	- / 6.034	- / 9.023	- / 0.000	- / 9.023	
2.2) CANES - Afloat Design Service Agent (Non-MIP)	- / 31.860	- / 17.948	- / 6.041	- / 7.056	- / 0.000	- / 7.056	
<i>Subtotal: Support</i>	- / 53.991	- / 20.891	- / 12.075	- / 16.079	- / -	- / 16.079	
<b>Installation</b>							
<i>Modification Item 1 of 1:</i> 5F010/5F777 CANES - Afloat Non-MIP	- / 310.210	- / 189.082	- / 77.316	- / 125.254	- / 0.000	- / 125.254	
<i>Subtotal: Installation</i>	- / 310.210	- / 189.082	- / 77.316	- / 125.254	- / -	- / 125.254	
<b>Total</b>							
<b>Total Cost (Procurement + Support + Installation)</b>	<b>880.317</b>	<b>274.641</b>	<b>212.030</b>	<b>320.337</b>	<b>0.000</b>	<b>320.337</b>	

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017								
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 10				<b>P-1 Line Item Number / Title:</b> 2915 / CANES				<b>Modification Number / Title:</b> 1 / 5F010/5F777 CANES - Afloat Non-MIP					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :						<b>MDAP/MAIS Code:</b>							
<b>Modification Item 1 of 1:</b> 5F010/5F777 CANES - Afloat Non-MIP													
<b>Manufacturer Information</b>													
Manufacturer Name: Multiple Vendors <sup>(6)</sup>						Manufacturer Location: Various							
Administrative Leadtime (in Months): 1						Production Leadtime (in Months): 6							
<b>Dates</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018</b>							
Contract Dates		Feb 2016		Jan 2017		Nov 2017							
Delivery Dates		Aug 2016		Jul 2017		May 2018							
<b>Installation Information</b>													
<b>Method of Implementation:</b> [none specified]:: Installation Name: CANES - Afloat 5F010/5F777 (Non-MIP)													
<b>Installation Cost</b>	<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>		
	Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		
Prior Years	50 / 302.995		17 / 178.490		- / -		- / -		- / -		- / -		
FY 2016	- / -		1 / 10.592		5 / 36.445		- / -		- / -		- / -		
FY 2017	- / -		- / -		3 / 19.388		9 / 69.669		0 / 0.000		9 / 69.669		
FY 2018	- / -		- / -		- / -		4 / 13.708		0 / 0.000		4 / 13.708		
Total	50 / 302.995		18 / 189.082		8 / 55.833		13 / 83.377		0 / 0.000		13 / 83.377		
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	39	11	2	2	8	6	1	2	1	4	4	4	1
Out	35	3	6	4	4	7	8	1	3	1	4	4	4
<b>Method of Implementation:</b> [none specified]:: Installation Name: CANES - Afloat Technical Insertion (Non-MIP)													
<b>Installation Cost</b>	<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>		
	Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total 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 2016	- / -		- / -		3 / 6.737		- / -		- / -		- / -		
FY 2017	- / -		- / -		2 / 14.746		8 / 32.502		0 / 0.000		8 / 32.502		
FY 2018	- / -		- / -		- / -		3 / 9.375		0 / 0.000		3 / 9.375		
Total	- / -		- / -		5 / 21.483		11 / 41.877		0 / 0.000		11 / 41.877		

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 10	<b>P-1 Line Item Number / Title:</b> 2915 / CANES	<b>Modification Number / Title:</b> 1 / 5F010/5F777 CANES - Afloat Non-MIP

<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :	<b>MDAP/MAIS Code:</b>
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**Modification Item 1 of 1:** 5F010/5F777 CANES - Afloat Non-MIP

**Installation Information**

**Method of Implementation:** [none specified]:: Installation Name: CANES - Afloat Technical Insertion (Non-MIP)

**Installation Schedule**

	PYS	FY 2016				FY 2017				FY 2018			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
In	-	-	-	-	-	-	2	1	-	2	4	2	2
Out	-	-	-	-	-	-	-	2	1	-	2	4	2

**Method of Implementation:** [none specified]:: Installation Name: CANES - Service Life Extension Program (SLEP) (Non-MIP)

Installation Cost	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	8 / 7.215	- / -	- / -	- / -	- / -	- / -
FY 2016	- / -	- / -	- / -	- / -	- / -	- / -
FY 2017	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -
Total	8 / 7.215	- / -	- / -	- / -	- / -	- / -

**Installation Schedule**

	PYS	FY 2016				FY 2017				FY 2018			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
In	8	-	-	-	-	-	-	-	-	-	-	-	-
Out	7	1	-	-	-	-	-	-	-	-	-	-	-

**Footnotes:**

(3) - First quarter installations reflected in the Installation Schedule are funded in the prior year in order to fund the installation contracts 90 days prior to the beginning of installation work. 90 days are needed to allow sufficient time for the contractor to plan the work schedule, order material, and perform necessary fabrication. This procedure allows installations to be scheduled in the first quarter, supporting Fleet availabilities. - CANES installations are conducted across several fleet concentration areas supported by six installation Multiple Award Contract (MAC) holders. The SPAWAR Installation Management Organization (IMO) has ensured sufficient Alteration Installation Teams (AIT) resources are available to meet the FY18 - 22 CANES installation plan. - CANES Afloat production units require an additional 4 months after delivery for integration, assembly and testing prior to installation start. Installations do not begin until 10 months after contract award (6 months production lead time (PLT) + 4 months integration). Total lead time, including admin lead time, is 11 months. - The procurement average unit cost fluctuation is due to variance in system configuration requirements for each CANES platform type. Furthermore, because CANES production units and installations are procured through separate multiple award contracts, there are unit cost fluctuations associated with the contracting process. A CANES unit level platform (DDG/CG/LSD) requires a smaller system, supporting fewer users and applications than force level platforms with a greater number of users and applications. For example, a CANES DDG design consists of 18 equipment racks and ~400 workstations, while a CANES CVN system consists of 48 equipment racks and ~3000 workstations. The average procurement cost (hardware, software, integration, and engineering support) for a unit level ship ranges from \$5.2M to \$7.5M, while the average procurement cost for a force level platform ranges from \$11.8M to \$15.6M, and submarine unit procurement costs range from \$2.7M

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 10	<b>P-1 Line Item Number / Title:</b> 2915 / CANES	<b>Modification Number / Title:</b> 1 / 5F010/5F777 CANES - Afloat Non-MIP
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :		<b>MDAP/MAIS Code:</b>
<p>to \$4.6M. These costs include both the MIP and non-MIP components of the CANES units. - Installation cost fluctuations are attributed to and dependent on ship class, variant of predecessor system the hull currently has installed .As an example of variant differences, if a CVN has an ISNS Delta variant installed, a CANES installation is estimated to be \$18.2M. If that same CVN had a legacy Asynchronous Transfer Mode Local Area Network (ATM LAN) the CANES installation is estimated to be \$22.4M. FY17 quantities were adjusted from PB17 due to fact of life fielding plan changes driven by installation availability schedules, resulting in a different mix of platforms procured and installed.</p> <p>(4) - First quarter technical insertion installations reflected in the Installation Schedule are funded in the prior year in order to be able to fund the installation contracts 90 days prior to the beginning of shipboard installation work. 90 days are needed to allow sufficient time for the contractor to plan the work schedule, order material, and perform necessary fabrication. This procedure allows installations to be scheduled in the first quarter thereby supporting Fleet availability. - CANES technical insertion installations are conducted across several fleet concentration areas supported by six installation Multiple Award Contract (MAC) holders. The SPAWAR Installation Management Organization (IMO) has ensured sufficient Alteration Installation Teams (AIT) resources are available to meet the FY18 - 22 CANES installation plan. - CANES Afloat technical insertion units require an additional 4 months after delivery for operational integration, assembly and testing prior to installation start. Installations do not begin until 10 months after contract award (6 months production lead time (PLT) + 4 months integration). Total lead time, including admin lead time, is 11 months.</p> <p>(5) CANES first articles are defined as necessary production design drawings, environmental (shock and vibration) qualifications, logistics and training artifacts as well as a certified tested baseline provided to the government for each platform first of its kind. First articles are separate from production units and must be bought prior to the procurement of the corresponding production units. Procurement Lead Time (PLT) is 8 months for First Articles (DDG,CVN, submarines, etc). All following production articles of the same variant require a PLT of 6 months. CANES First Articles are not installed. Average unit cost fluctuations are attributable to variances in system configuration requirements among platforms. A DDG/CG/LSD (unit level platforms) has fewer users and runs fewer applications than a LHD/CVN/LPD (force level platforms). Force level platforms are larger in scale compared to the unit level ships and represent a super set of users, applications and connected systems.</p> <p>(6) CANES: Full Production Contract has 7 possible vendors on MAC award: Northrop Grumman Systems Corp, BAE Sytems Technology Solutions &amp; Services, General Dynamics C4 Systems, Global Technical Systems, SERCO, Inc, CGI Federal Inc, DRS Laurel Technologies. Contract will be used for both production and tech refresh units</p>		



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**Exhibit P-40, Budget Line Item Justification:** FY 2018 Navy **Date:** May 2017

<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment	<b>P-1 Line Item Number / Title:</b> 2920 / RADIAC
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<b>ID Code</b> (A=Service Ready, B=Not Service Ready): B	<b>Program Elements for Code B Items:</b> 0708017N	<b>Other Related Program Elements:</b> 0603542N, 0702856N
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**Line Item MDAP/MAIS Code:** N/A

Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	50.740	6.768	8.092	10.718	0.000	10.718	8.301	8.661	8.740	8.912	Continuing	Continuing
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	50.740	6.768	8.092	10.718	0.000	10.718	8.301	8.661	8.740	8.912	Continuing	Continuing
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority (<i>\$ in Millions</i>)</b>	<b>50.740</b>	<b>6.768</b>	<b>8.092</b>	<b>10.718</b>	<b>0.000</b>	<b>10.718</b>	<b>8.301</b>	<b>8.661</b>	<b>8.740</b>	<b>8.912</b>	<b>Continuing</b>	<b>Continuing</b>

*(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 Radiation Detection, Indication and Computation (RADIAC) Program is responsible for providing radiation monitoring instruments that detect and measure ionizing radiation. These instruments are used on all Navy, Coast Guard and Military Sealift Command vessels, and at every Navy shore installation, in order to ensure the safety of personnel, continuity of operations in radiological or nuclear contingencies, and protection of the environment.

[P40A / M2100 - Survey Meters]: M2100. Radiation survey meters, required by 10CFR20 and the Navy's mission, are used to detect, measure and monitor radiation levels in support of operations involving radioactive materials. Navy operations associated with radioactive materials include operation of nuclear reactors, maintenance on radioactive systems or components, testing of components for structural integrity (X-ray), research, and medical diagnostics and treatment. Additionally, radiation survey meters are used to search for, locate and intercept radioactive material, and in responding to casualties involving radioactive materials. Where radiation survey meters are used to support operations involving radioactive material, they provide real-time information used to control personnel radiation exposure and to identify and control the spread of radioactivity. When used to search for radioactive material, they provide an extremely reliable method of identifying radioactive material while minimizing the risk to personnel conducting these operations.

[P40A / Radiological Detection System]: M2100, Radiological Detection System (RDS): This is a basic RADIAC instrument used in Consequence Management and Occupational Safety and Health applications by all ships (U.S. Navy, U.S. Coast Guard and Military Sealift Command) and shore commands. It is used to survey for radioactive surface contamination pursuant to nuclear plant operations or nuclear plant maintenance; following medical procedures involving radioactive isotopes; or casualties and events that release radioactivity into the environment such as after a nuclear reactor accident or the use of weapons involving nuclear devices or radioactivity. It is also used to perform surveys for various types of radiation in order to monitor environmental conditions in areas and spaces immediately adjacent to where radioactive material is stored or used during routine operations; where nuclear plant operations occur; and where radioisotopes are used for maintenance, such as during industrial radiography operations.

The RDS consists of a control unit and a suite of probes that survey for different types of radioactivity (Alpha, Beta, Gamma, Neutron). The control unit is necessary for all applications but the four probes are used for different situations. That means the control unit will have the highest procurement objective and the four probes will be bought in varying quantities. The probes will be configured as a separate unit of issue and provided to customers dependent upon the intended end use.

This instrument will replace the Navy's 30-year old IM-265/PDQ Multi-Function RADIAC control unit and its ancillary probes, of which there are several thousand control units and probes in the inventory. The procurement will be phased over multiple years. The RDS is being developed by the Joint Project Manager, Radiological & Nuclear Defense in order that the Army, Navy, Marine Corps and Air Force will have a Joint instrument that will enable interoperability and surge support of assets from all the components to forward deployed units.

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment		P-1 Line Item Number / Title: 2920 / RADIAC
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 0708017N	Other Related Program Elements: 0603542N, 0702856N
Line Item MDAP/MAIS Code: N/A		
<p>[P40A / M2100 NWCF Contract Service Fee]: M2100 NWCF Contract Service Fee: The PCO for hardware acquisitions is a Navy Working Capital Fund activity that charges a set fee for each contract award and modification. The applicable fee for a given year is applied to the total value of the Cost Code hardware acquisitions.</p> <p>[P40A / M2200 - Dosimetry]: M2200. Dosimetry consists of radiation sensitive materials that are used for detecting and measuring an individual's exposure to ionizing radiation and to aid in minimizing this exposure. Dosimetry is required to be worn by personnel who work with sources of radioactivity or by personnel responding to casualties involving radioactivity. Most dosimeters are small devices that are worn on the belt, on a lanyard around the neck or attached to a shirt. Some dosimeters provide direct readout enabling the wearer to monitor and control radiation exposure. Other types of dosimeters must be removed from the wearer to be evaluated in special dosimeter readers that extract the recorded radiation exposure value from the dosimeter. Radiation exposure measured by dosimetry is recorded in individual medical records when formal tracking of the radiation exposure is required.</p> <p>In accordance with 10CFR20, dosimetry is required to be worn by personnel who work with sources of radioactivity. In the Navy this includes personnel in the Nuclear Propulsion, Nuclear Weapons, and Medical and Radiological Affairs Support programs. In these programs radiation exposure is measured by dosimetry and recorded in individual medical records for tracking purposes. Dosimetry is also worn by personnel responding to casualties involving radioactivity to control their exposure within acceptable levels.</p> <p>[P40A / DT-702 Card]: M2200, DT-702 Card: The DT-702 Thermoluminescent Dosimeter (TLD) is a small metal card, a little smaller and thinner than a domino, that contains four circular slots containing different elements that are sensitive to various types of radioactivity. The card is placed in a plastic holder so it is protected and able to be worn by personnel on a lanyard or on their clothing. It is issued to sailors and civilians who are occupationally exposed to radiation. This includes Navy programs such as Nuclear Propulsion, Explosive Ordnance Disposal, Nuclear Weapons, Industrial Radiography and Medical. The DT-702 provides primary dosimetry, whereby dosage accumulated on this card can be entered into the respective person's permanent medical files. The processes associated with the DT-702 also are compliant with 10CFR20 by being approved by the National Voluntary Laboratory Accreditation Program (NVLAP), which is administered by the National Institute of Standards &amp; Technology (NIST). The cards are issued to individuals and tracked by serial numbers. The cards are periodically turned in (and another card is issued so there is no coverage gap) to have the dose extracted by an 8800 Reader. The process by which the cards are read include several heating cycles that eventually make the receptor elements unusable, so the life of a TLD is finite -- about 100 reads -- and then they have to be replaced. Cards are procured approximately every two to three years in order to achieve the lowest unit price available when buying in quantity. Under the current contract the most cost effective price is achieved at no fewer than 20,000 units.</p> <p>[P40A / DT-702 Card Holder]: M2200, DT-702 Card Holder: A plastic case into which the DT-702 card is placed for the card's protection and so it can be worn on a lanyard or on a belt. It has four circular windows made of specific materials of various thickness to allow the proper filtration of radiation to the dosimeter elements under each of the windows.</p> <p>[P40A / Extremity Dosimeter]: M2200, Extremity Dosimeter: An extremity dosimeter is used to measure concentrated exposure to the hands when a radiation worker is reaching into a glove box or medical personnel are performing fluoroscopy tasks. This item is composed of three inexpensive pieces: 1) a plastic ring (\$2) to wear on a finger; 2) a dosimeter (\$36) that measures exposure; and 3) a cap that secures the dosimeter to the ring. The ring is made to a specific thickness depending on the type of radiation the dosimeter is intended to measure (\$3). These items will be procured in quantities of 3,000 each. An average unit cost for the three items is used and all 9,000 components are shown on this one Cost Element.</p> <p>[P40A / Battlefield Dosimeter]: M2200, Battlefield Dosimeter: A dosimeter designed for use during nuclear or radiological events involving high energy gamma and neutron irradiation. The concept of operations for such a dosimeter is that it is issued at MOP (Military Operational Posture) III to allow the commander to manage the exposure received by members of recovery teams. It is also used to perform triage on casualties, allowing medical personnel to effectively allocate their ministrations.</p> <p>[P40A / Battlefield Dosimeter Cases]: M2200, Battlefield Dosimeter Cases: The Battlefield Dosimeter will spend much of its time aboard ships stored in Damage Control Lockers. The instrument will also have to be shipped to and from a RADIAC Calibration Laboratory to undergo periodic calibrations. Because allowances for the instruments on the various ship classes range from 12 on an LCS to 700 each on a CVN, cases configured to hold different quantities (25, 50, 100) will be procured to afford the necessary protection for storage and shipping while maximizing shipboard storage space efficiency. The price shown in FYs 2015 and 2016 were for cases that hold 100 units. Thereafter, cases in all three sizes will be procured and costs will vary. All configurations will be shown on one Cost Element.</p>		

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment		<b>P-1 Line Item Number / Title:</b> 2920 / RADIAC
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): B	<b>Program Elements for Code B Items:</b> 0708017N	<b>Other Related Program Elements:</b> 0603542N, 0702856N
<b>Line Item MDAP/MAIS Code:</b> N/A		
<p>[P40A / Electronic Personal Dosimeter]: M2200, Electronic Personal Dosimeter (EPD): An electronic dosimeter that includes a real-time digital display of radiation dose being received. These so-called secondary dosimeters are normally used in conjunction with the DT-702 primary dosimeter in order to provide the wearer with real-time radiation dose information and alarm features that aid workers in controlling their radiation exposure. The DT-702 (Cost Element 2.1) is the Navy's approved dosimeter to record dose of record in each individual's medical record, but it is a "passive" device; i.e., it does not immediately display the dose being received. Instead, the dose is stored on the card on four different elements. It must be turned in and read by a machine (the 8800 Reader), a process that takes weeks, and therefore does not indicate if the wearer is in imminent danger.</p> <p>[P40A / M2200 NWCF Contract Service Fee]: M2200 NWCF Contract Service Fee: The PCO for hardware acquisitions is a Navy Working Capital Fund activity that charges a set fee for each contract award and modification. The applicable fee for a given year is applied to the total value of the Cost Code hardware acquisitions.</p> <p>[P40A / M2400 - Other RADIAC]: M2400. Other RADIAC. The RADIAC Program fields 70 different families of instruments, consisting of a total of almost 43,000 instruments and 400,000 dosimeters. Those families that fall into similar functionality have been grouped here into the M2100, M2200, M2500 and M2600 Cost Codes. This Cost Code consists of instruments that have specialized functions that only they perform, and therefore would require an unmanageable and meaningless number of additional Cost Codes if each were addressed individually. In the context of the family metaphor used here, these instruments are no less important but are orphans in the sense there are not many of similar functionality that they could be grouped with. This Cost Code also supports replenishment of Ready for Issue (RFI) stocks when instruments in any Cost Code fall below stock levels sufficient to meet quarterly demand. This Cost Element (Spares) is a Continuing element that varies year-to-year based on emergent requirements and the quantity and unit cost of the item(s) being replenished.</p> <p>Supports instruments that are disparate in functionality and cannot be readily grouped into the other RADIAC Cost Codes.</p> <p>[P40A / Criticality Monitor]: M2400, Criticality Monitor: Radiation detection system used to continuously monitor general area radiation levels and designed to detect an uncontrolled reactor criticality event. This system is used in reactor construction and overhaul facilities to ensure compliance with 10CFR20.</p> <p>[P40A / Criticality Monitor Technical Repair Standard]: M2400, Criticality Monitor Technical Repair Standard: Technical Repair Standard data, calibration software and initial spare parts for the Criticality Monitor.</p> <p>[P40A / Tool Contamination Monitor, Shore]: M2400, Tool Contamination Monitor: Used to scan tools and other equipment prior to release from a radiological work area to a general work area in order to ensure the equipment did not become contaminated with radiation while being used in the radiological area.</p> <p>[P40A / Tool Contamination Monitor, Ship]: M2400, Tool Contamination Monitor Ship: Certification that the units procured for shipboard use will meet DoD Standard 1399 for pitch and roll.</p> <p>[P40A / Spares]: M2400, Spares: Purchase of additional quantities of existing models of RADIACs to replenish or supplement stocks of spare items due to minor increases in program allowances, minor inventory losses, or due to items being beyond economical repair.</p> <p>[P40A / M2400 NWCF Contract Service Fee]: M2400 NWCF Contract Service Fee: The PCO for hardware acquisitions is a Navy Working Capital Fund activity that charges a set fee for each contract award and modification. The applicable fee for a given year is applied to the total value of the Cost Code hardware acquisitions.</p> <p>[P40A / M2500 - Air Sampling Systems]: M2500. Monitoring for airborne radioactivity is done to detect leaks from nuclear reactors or associated systems to ensure that radioactivity is not inadvertently released to the environment from these operations. Additionally, monitoring for airborne radioactivity is performed during maintenance on radioactive components or during events that might cause radioactivity to be released to the air. Monitoring for airborne radioactivity is normally done by drawing air across filter paper to collect airborne radioactive particles. This filter paper is then evaluated by radiation detectors and the concentration of airborne radioactivity is calculated. The types of airborne radioactivity monitoring systems include fixed systems and portable systems. Fixed systems sample air from pre-determined locations and normally include built-in radiation detectors for determining the airborne radioactivity concentration. Portable systems can be used to sample air at any desired location, but normally require the use of separate radiation detection instruments to measure the radioactive particles deposited on the filter paper to determine the airborne radioactivity concentration.</p>		

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment		P-1 Line Item Number / Title: 2920 / RADIAC
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 0708017N	Other Related Program Elements: 0603542N, 0702856N
Line Item MDAP/MAIS Code: N/A		
<p>[P40A / Air Particle Detector (APD) Ship Frames]: M2500, Air Particle Detector, Ship, Frames: Government Furnished Material (GFM) to be provided to the manufacturer of the APD Ship (IM-272/WDQ). This material consists of the housing and specific internal components from the IM-239/WDQ. The housings and identified internal components from the IM-239/WDQ will be prepared in the depot level maintenance facility for the item and provided to the manufacturer of the IM-272/WDQ. Use of these housings and components reduces the overall cost of the IM-272/WDQ and avoids the cost of a ship alteration by ensuring the IM-272/WDQ will have the same shipboard footprint as the IM-239/WDQ.</p>		
<p>[P40A / APD Ship]: M2500, Air Particle Detector, Ship: Airborne radioactivity monitoring system for use on CVNs and all submarines. This system (IM-272/WDQ) is a replacement for the existing IM-239/WDQ used on all Navy nuclear ships. The IM-272/WDQ incorporates significant technology enhancements that will reduce spurious false alarms and reduce operator maintenance.</p>		
<p>[P40A / APD Ship Engineering Change Proposal]: M2500, APD Ship Engineering Change Proposal (ECP): Naval Reactors has directed an ECP be designed and incorporated that will reduce noise and vibration for the IM-272/WDQ in order that it will meet (classified) specifications for COLUMBIA class submarines. No further production units will be ordered until the ECP is incorporated into the design.</p>		
<p>[P40A / APD Ship Data]: M2500, Air Particle Detector, Ship Data: Upon award of the contract in September 2014, the cost of Contract Data Requirements List and Contract Line Item Number data became known. This data includes a one-time cost for Technical Manuals in FY15. Subsequent years include the Technical Repair Standard, drawings, and production reports with every delivery order.</p>		
<p>[P40A / APD Ship Initial Spare Parts]: M2500, Air Particle Detector, Ship, Initial Spare Parts: In FY17 procure initial spare parts to support fielding. In FY18-FY20, procure parts to upgrade the initial 40 units procured in FY14 to a new acoustic standard directed by Naval Reactors.</p>		
<p>[P40A / APD Ship Provisioning]: M2500, APD Ship Provisioning Conference: The contractor hosted a Provisioning Conference. At the Provisioning Conference, the equipment was broken down to Source, Maintenance and Recoverability (SM&amp;R) codes and maintenance philosophies were established for each part. Prior to the conference, preliminary copies of the following items were provided:</p> <ol style="list-style-type: none"><li>1. Provisioning Parts List</li><li>2. APD-Ship Interim Spare Parts List</li><li>3. Product Drawings and Associated Lists</li><li>4. Electronic Equipment Interactive Electronic Technical Manual</li><li>5. HM&amp;E Equipment Technical Repair Standard (TRS) for IM-272/WDQ RADIACMETER</li><li>6. Detail Specification Documents (DSD)</li><li>7. Logistics Data Product, Special Equipment Long Lead Time Items List (SELLTIL)</li><li>8. Special Equipment Tools and Test Equipment List (SETTEL)</li><li>9. Logistics Data Product, Special Equipment Common and Bulk Items List (SECBIL)</li><li>10. Engineering Data for Provisioning (EDFP)</li></ol>		
<p>[P40A / APD Shore]: M2500, Air Particle Detector (APD) Shore: This system is a replacement for the existing IM-239/WDQ designed for ships that is also currently used in radiological maintenance facilities ashore. The APD Shore incorporates significant technology enhancements that will reduce spurious false alarms and reduce operator maintenance, and since it does not need to be hardened for shipboard use, it will be cheaper to procure and maintain than the new IM-272/WDQ units (Cost Element 4.2) being procured for ships.</p>		
<p>[P40A / APD Shore Initial Spare Parts]: M2500, Air Particle Detector, Shore, Initial Spare Parts: Initial spare parts and Tc-99 check sources.</p>		
<p>[P40A / Air Particle Sampler]: M2500, Air Particle Sampler: Portable airborne radioactivity sampling system. Used during radiological work or during radiological casualties to draw air across a filter paper to collect radioactive particles. The filter paper is then evaluated using separately provided radiation detectors to determine the concentration of airborne radioactivity.</p>		
<p>[P40A / Air Particle Sampler Data &amp; Parts]: M2500, Air Particle Sampler Data &amp; Parts: Technical Repair Standard, drawings, initial spare parts and First Article Test Report for the Air Particle Sampler.</p>		

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment		<b>P-1 Line Item Number / Title:</b> 2920 / RADIAC
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): B	<b>Program Elements for Code B Items:</b> 0708017N	<b>Other Related Program Elements:</b> 0603542N, 0702856N
<b>Line Item MDAP/MAIS Code:</b> N/A		
<p>[P40A / Tritium Monitor]: M2500, Tritium Monitor: The AN/PDR-73 Tritium Monitor is used at nuclear weapons storage facilities and research laboratories to sample the air for the presence of tritium, which is a toxic radiation hazard if inhaled. The current instrument is 30 years old and cannot be repaired due to obsolete components. At the current loss rate due to normal wear and tear there will be insufficient assets to meet operational requirements, so a replacement must be procured.</p> <p>[P40A / Tritium Monitor Testing, Data, Parts &amp; Training]: M2500, Tritium Monitor Initial Spare Parts Testing, Data &amp; Training: In FY17 procure Electro Magnetic Interference testing, Technical Manuals, and Technical Repair Standard. In FY18 procure initial spare parts to support fielding and factory training of RADIAC Calibration Laboratory Electronic Technicians and program engineers.</p> <p>[P40A / M2500 NWCF Contract Service Fee]: M2500 NWCF Contract Service Fee: The PCO for hardware acquisitions is a Navy Working Capital Fund activity that charges a set fee for each contract award and modification. The applicable fee for a given year is applied to the total value of the Cost Code hardware acquisitions.</p> <p>[P40A / M2600 - Laboratory Test Equipment]: M2600. This Cost Code supports specialized equipment usually found in laboratories, hospitals and test facilities. This kind of equipment is distinct enough to warrant separating it for management purposes from the M2400 Cost Code.</p> <p>[P40A / Gamma Counter Upgrade]: M2600, Gamma Counter Upgrade: This laboratory equipment provides the capability of detecting loose contamination and the advantage of distinguishing if there is beta or gamma radiation/contamination present in the area. It provides automation in both the actual counting of samples and their automatic analysis. The upgrade is to software and hardware to improve performance and increase functionality. The upgrade will change the detecting medium to increase the counting efficiency.</p> <p>[P40A / Calibrators]: M2600, Calibrators: Calibrators are the basic tool used to calibrate all Navy radiological detection equipment. They consist of a high energy radiological source (Cs-137) in a shielded container that is located in a specially constructed room, or "range." A technician places the instrument to be calibrated at a specific calibration point in the range and remotely operates the calibrator by raising the source out of its container so that the radiological source becomes exposed and it irradiates the instrument. The instrument's response to the radiation is measured so that it can be calibrated to specific tolerances. The current suite of AN/UDM-1B calibrators is over 30 years old, and the natural decay of the strength of the radioactive source over time restricts calibration effectiveness by limiting the scale of calibration points below American National Standards Institute (ANSI) requirements that are followed in accordance with Navy policy. Also, due to the age of the calibrators, there are several parts no longer supported by the manufacturer, and a malfunctioning calibrator (e.g., where the source gets stuck in the exposed position) poses a very high safety risk.</p> <p>[P40A / Calibrator Initial Spare Parts &amp; Training]: M2600, Calibrator Initial Spare Parts &amp; Training: Initial spare parts and vendor training at each of the seven RADIAC Calibration Laboratories where the equipment will be installed.</p> <p>[P40A / M2600 NWCF Contract Service Fee]: M2600 NWCF Contract Service Fee: The PCO for hardware acquisitions is a Navy Working Capital Fund activity that charges a set fee for each contract award and modification. The applicable fee for a given year is applied to the total value of the Cost Code hardware acquisitions.</p> <p>[P40A / M2830 - Support - Production Engineering]: M2830, Production Engineering: Labor cost of the government and contractor personnel who prepare the acquisitions.</p> <p>[P40A / Production Engineering Carderock]: M2830, Production Engineering: Labor cost of the government Engineers, Health Physicists, Scientists and others who prepare the acquisitions.</p> <p>[P40A / Production Engineering ISEA]: M2830, Production Engineering In Service Engineering Agent (ISEA): Labor cost of the contractor Engineers, Logisticians, Technical Writer, Program Analyst, and Systems Analysts who help prepare the acquisitions.</p> <p>[P40A / M2830 NWCF Contract Service Fee]: M2830 NWCF Contract Service Fee: The PCO for acquisitions is a Navy Working Capital Fund activity that charges a set fee for each contract award and modification. The applicable fee for a given year is applied to the total value of the Cost Code services acquisition.</p>		
<b>Justification:</b>		

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment		<b>P-1 Line Item Number / Title:</b> 2920 / RADIAC
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): B	<b>Program Elements for Code B Items:</b> 0708017N	<b>Other Related Program Elements:</b> 0603542N, 0702856N
<b>Line Item MDAP/MAIS Code:</b> N/A  Title 10 of the Code of Federal Regulations, Part 20 (10 CFR 20) requires RADIAC instruments be used to ensure the safety of personnel who work with or are exposed to radioactive materials in their work. Additionally, the Navy's mission requires personnel and ships to have the ability to operate in radiological environments and the ability to identify and interdict radiological Weapons of Mass Destruction (WMD). Navy programs that require RADIAC instruments for Occupational Safety & Health (OSH) reasons under the provisions of 10 CFR 20 include Naval Nuclear Propulsion, Nuclear Weapons, Medical, and Radiological Affairs Support. Non-OSH programs include Radiological Defense, Consequence Management, Training, Technical (RADIAC calibration, shielding evaluation, research, etc.) and Radiological Search (maritime interdiction to locate or intercept WMD).		

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy								Date: May 2017				
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment						P-1 Line Item Number / Title: 2925 / CANES Intell						
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A					Other Related Program Elements: 0303138N				
Line Item MDAP/MAIS Code: M417												
Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	255.032	28.695	36.013	48.028	0.000	48.028	59.321	56.636	49.192	50.176	446.377	1,029.470
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	255.032	28.695	36.013	48.028	0.000	48.028	59.321	56.636	49.192	50.176	446.377	1,029.470
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	255.032	28.695	36.013	48.028	0.000	48.028	59.321	56.636	49.192	50.176	446.377	1,029.470
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	0.896	-	0.896	1.367	1.783	1.557	0.790	Continuing	Continuing
Flyaway Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-
Description:												
Consolidated Afloat Networks & Enterprise Services (CANES) is the Navy's only Program of Record to replace existing afloat networks and provide the necessary infrastructure for applications, systems, and services to dominate the cyber warfare domain. CANES is the technical and infrastructure consolidation of existing, separately managed afloat networks including Integrated Shipboard Network Systems (ISNS), Combined Enterprise Regional Information Exchange System - Maritime, Sensitive Compartmented Information (SCI) Networks, and Submarine Local Area Network. These legacy afloat network designs are currently End of Life and CANES will replace these unaffordable and obsolete networks.												
The fundamental goal of CANES is to bring Infrastructure as a Service and Platform as a Service, within which current and future iterations of Navy Tactical Network computing and storage capabilities will reside. CANES will provide complete infrastructure inclusive of hardware, software, processing, storage, and end user devices for Unclassified, Coalition, Secret and SCI for all basic network services (email, web, chat, collaboration) to a wide variety of Navy surface combatants, submarines, Maritime Operations Centers (MOC), Regional Network Operations and Security Centers (RNOSC) and Aircraft. In addition, hosted applications and systems inclusive of Command and Control, Intelligence, Surveillance and Reconnaissance, Information Operations, Logistics and Business domains require the CANES infrastructure to operate in the tactical environment. Integrating these applications and systems is accomplished through application integration, the engineering process used to evaluate and validate compatibility between CANES and Navy-validated applications, systems and services that will utilize the CANES infrastructure and services. Specific programs, such as Distributed Common Ground System - Navy, Global Command and Control System - Maritime, Naval Tactical Command Support System, and Undersea Warfare Decision Support System, are dependent on the CANES common computing environment to field, host, and sustain their capability because they no longer provide their own hardware. CANES requires that Automated Digital Network System (ADNS) field prior to or concurrently with CANES due to architectural reliance between the two programs.												
CANES will develop technical updates on a rolling four year hardware baseline and a two year software baseline to ensure no cyber security vulnerabilities exist due to hardware and software obsolescence. Fielding of CANES hardware and software baselines will be in alignment with the Chief of Naval Operation's Optimized Fleet Response Plan (OFRP). Technology refresh of existing CANES systems will be inclusive of both the latest CANES hardware and software baselines and will be executed on each ship no later than every six years. CANES is based on the overarching concept of reducing the number of afloat networks and providing enhanced efficiency through a single engineering focus on integrated technical solutions. This will allow for streamlined acquisition, contracting, and test events, and significant lifecycle efficiencies through consolidation of multiple current configuration management baselines, logistics, and training efforts into a unified support structure.												

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy								<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment						<b>P-1 Line Item Number / Title:</b> 2925 / CANES Intell				
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A				<b>Program Elements for Code B Items:</b> N/A			<b>Other Related Program Elements:</b> 0303138N			
<b>Line Item MDAP/MAIS Code:</b> M417										
Exhibits Schedule					Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 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	CANES - Ashore 5G010/5G776 MIP				- / 4.214	- / 0.000	- / 0.000	- / 0.449	- / 0.000	- / 0.449
P-5	1 / CANES Intell				- / 1.050	- / 0.000	- / 0.000	- / 0.000	- / 0.000	- / 0.000
P-3a	1 / CANES-Afloat 5G010/5G777 MIP (TBD)				- / 249.768	- / 28.695	- / 36.013	- / 47.579	- / 0.000	- / 47.579
<b>P-40</b>	<b>Total Gross/Weapon System Cost</b>				<b>- / 255.032</b>	<b>- / 28.695</b>	<b>- / 36.013</b>	<b>- / 48.028</b>	<b>- / 0.000</b>	<b>- / 48.028</b>
<p>*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.</p> <p>Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.</p>										
<p><b>Justification:</b></p> <p>The FY18 increase in the CANES funding profile optimizes a larger percentage of Chief of Naval Operations ship availabilities to mitigate heightened cyber security threats across Navy tactical networks and supports the Deputy Secretary of Defense direction to remove End of Life (EOL) Windows Operating Systems software from the Fleet as quickly as feasible. Microsoft's end of cyber security support for legacy versions of Windows, as well as networks that rely on obsolete hardware and software, are driving increased sustainment costs, reducing operational availability and creating critical cyber security vulnerability in Navy Tactical Networks. Replacing these legacy networks and modernizing the tactical environment with CANES is the cornerstone for all C4ISR investments. The program has demonstrated a robust production and installation industrial base capable of executing the planned work in FY18. A reduction in this investment results in increased operational risk to legacy network sustainment and leaves the Navy's tactical domain vulnerable to existing and projected near term nation-state cyber threats.</p> <p>FY 2018 - CANES funds are for the procurement of (24) Afloat production units (2 Force Level, 11 Unit Level, 11 Subs), (13) Technical Insertion units (1 Force Level, 9 Unit Level, 3 Subs), and (1) Afloat First Article, with integration and associated costs for pre-installation design and the installation of (13) Afloat production units and (11) Technical Insertion units. CANES funds will also be used for the procurement and installation of (1) Ashore production unit.</p> <p>It is important to note that procurement quantities across the FYDP are the same CANES end item products referenced in CANES LI 2915. Installation quantities represent sites receiving CANES as also referenced in LI 2915. The associated dollars in this exhibit represent the MIP portions of the CANES enclave.</p> <p>The decrease in average unit installation cost from FY17 to FY18 is due a reduced number of more expensive Force Level (CVN, LHD) units in the FY18 installation plan. FY17 quantities were adjusted from PB17 due to fact of life fielding plan changes driven by installation availability schedules, resulting in a different mix of platforms procured and installed.</p> <p>FY17 quantities were adjusted from PB17 due to fact of life fielding plan changes driven by installation availability schedules, resulting in a different mix of platforms procured and installed.</p>										



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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy															Date: May 2017						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10						P-1 Line Item Number / Title: 2925 / CANES Intell						Aggregated Items Title: CANES - Ashore 5G010/5G776 MIP									
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)	
B Kits/Recurring																					
CANES-Ashore Production Units MIP -- Procurement <sup>(1)</sup>		A		248.500	2	0.497	-	-	-	-	-	-	332.000	1	0.332	-	-	-	332.000	1	0.332
CANES-Ashore Production Units MIP -- Installation		A		-	-	0.427	-	-	-	-	-	-	-	-	0.100	-	-	-	-	-	0.100
Subtotal: B Kits/Recurring			-	-	0.924	-	-	-	-	-	-	-	-	-	0.432	-	-	-	-	-	0.432
B Kits/Non-Recurring																					
CANES - Ashore First Articles - MIP <sup>(2)</sup>		A		3,264.000	1	3.264	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: B Kits/Non-Recurring			-	-	3.264	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Support Cost																					
CANES - Ashore Production Support (MIP)		A		-	-	0.026	-	-	-	-	-	-	-	-	0.017	-	-	-	-	-	0.017
Subtotal: Support Cost			-	-	0.026	-	-	-	-	-	-	-	-	-	0.017	-	-	-	-	-	0.017
Total			-	-	4.214	-	-	0.000	-	-	0.000	-	-	0.449	-	-	0.000	-	-	0.449	
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																					
Remarks:																					
Models of Systems Affected: Consolidated Afloat Networks & Enterprise Services (CANES) MIP																					
The consolidation of existing Ashore Network programs of record designed to provide an agile, responsive Common Computing Environment (CCE) and the eventual addition of Afloat Core Services (ACS) within and upon which application developers will host Command and Control, Warfare, Intelligence, Logistics, and business and education applications and services for Maritime Operation Command (MOC), Regional Network Operations and Security Centers (RNOSC) and Technical Training Equipment (TTE).																					
Footnotes:																					
<sup>(1)</sup> - Ashore procurement quantities are detailed as follows: Technical Training Equipment (TTE) - PY (2), FY18 (1), FY19-FY22 (0); Maritime Operation Center (MOC) - FY16-FY18 (0); FY19(3), FY20 (2), FY21 (3). - A MOC is a fully operational system configuration. A TTE configuration is a subset of a MOC configuration. This scale difference accounts for the fluctuation in per unit costs across fiscal years commensurate with the procurement quantities outlined in above note. -TTE has no associated DSA requirements.																					
<sup>(2)</sup> Production Lead Time is 8 months for First Articles. First Articles are defined as necessary production design drawings, environmental (shock and vibration) qualifications, logistics and training artifacts as well as a certified tested baseline provided to the government for each platform first of its kind. All following articles of the same variant require a Production Lead Time of 5 months for Ashore units and 6 months for afloat units. Total Ashore lead time, including 1 month Admin lead time, is 6 months. Ashore production lead times require one month less than Afloat production lead times due to the long lead time afloat production quality racks and minimized shock and vibration requirements for shore facilities. CANES First Articles are not installed.																					

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Exhibit P-5, Cost Analysis: FY 2018 Navy												Date: May 2017						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10						P-1 Line Item Number / Title: 2925 / CANES Intell						Item Number / Title [DODIC]: 1 / CANES Intell						
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Resource Summary				Prior Years		FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total				
Procurement Quantity (Units in Each)				-		-		-		-		-		-		-		
Gross/Weapon System Cost (\$ in Millions)				1.050		0.000		0.000		0.000		0.000		0.000		0.000		
Less PY Advance Procurement (\$ in Millions)				-		-		-		-		-		-		-		
Net Procurement (P-1) (\$ in Millions)				1.050		0.000		0.000		0.000		0.000		0.000		0.000		
Plus CY Advance Procurement (\$ in Millions)				-		-		-		-		-		-		-		
Total Obligation Authority (\$ in Millions)				1.050		0.000		0.000		0.000		0.000		0.000		0.000		
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																		
Initial Spares (\$ in Millions)				-		-		-		-		-		-		-		
Gross/Weapon System Unit Cost (\$ in Thousands)				-		-		-		-		-		-		-		
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Hardware Cost																		
Non Recurring Cost																		
1.1.1) Cooperative Maritime Forces Pacific (CMFP)	-	-	1.050	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Non Recurring Cost	-	-	1.050	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Hardware Cost	-	-	1.050	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Gross/Weapon System Cost	-	-	1.050	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy				<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 10		<b>P-1 Line Item Number / Title:</b> 2925 / CANES Intell			<b>Modification Number / Title:</b> 1 / CANES-Afloat 5G010/5G777 MIP	

<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	249.768	28.695	36.013	47.579	0.000	47.579
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	249.768	28.695	36.013	47.579	0.000	47.579
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>249.768</b>	<b>28.695</b>	<b>36.013</b>	<b>47.579</b>	<b>0.000</b>	<b>47.579</b>
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>						
Initial Spares ( <i>\$ in Millions</i> )	-	-	-	-	-	-
Gross/Weapon System Unit Cost ( <i>\$ in Thousands</i> )	-	-	-	-	-	-

**Description:**

The consolidation of existing Afloat Network programs of record designed to provide an agile, responsive Common Computing Environment (CCE) and Afloat Core Services (ACS) within and upon which application developers will host Command and Control, Warfare, Intelligence, Logistics, and business and education applications and services. Migration of Non-Classified Enclave (NCE) capabilities into the CANES baseline.

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 10			<b>P-1 Line Item Number / Title:</b> 2925 / CANES Intell		<b>Modification Number / Title:</b> 1 / CANES-Afloat 5G010/5G777 MIP	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Models of Systems Affected:</b> Consolidated Afloat Networks & Enterprise Services (CANES) MIP			<b>Modification Type:</b> TBD		<b>Related RDT&amp;E PEs:</b> 0303238N	
<b>Financial Plan</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
<b>Procurement</b>						
<b>Modification Item 1 of 1:</b> CANES-Afloat 5G010/5G777 MIP						
B Kits						
Recurring						
1.1.1) CANES - Afloat Production Units - MIP - NonOrganic <sup>(3)</sup>	67 / 133.110	6 / 5.106	12 / 13.135	24 / 19.887	- / -	24 / 19.887
1.1.2) CANES Afloat Technical Insertion - MIP - NonOrganic <sup>(4)</sup>	- / -	3 / 1.000	10 / 6.704	13 / 7.264	- / -	13 / 7.264
<b>Subtotal: Recurring</b>	- / 133.110	- / 6.106	- / 19.839	- / 27.151	- / -	- / 27.151
Non-Recurring						
1.2.1) CANES - Afloat First Articles - MIP - Organic <sup>(5)</sup>	9 / 32.697	1 / 1.812	1 / 1.118	1 / 0.618	- / -	1 / 0.618
1.2.2) CANES-Non-Recurring Engineering (MIP) - Organic	- / 4.732	- / -	- / -	- / -	- / -	- / -
<b>Subtotal: Non-Recurring</b>	- / 37.429	- / 1.812	- / 1.118	- / 0.618	- / -	- / 0.618
<b>Subtotal: CANES-Afloat 5G010/5G777 MIP</b>	76 / 170.539	10 / 7.918	23 / 20.957	38 / 27.769	- / -	38 / 27.769
<b>Subtotal: Procurement, All Modification Items</b>	- / 170.539	- / 7.918	- / 20.957	- / 27.769	- / -	- / 27.769
<b>Support (All Modification Items)</b>						
2.1) CANES - Afloat Production Support (MIP)	- / 6.917	- / 0.321	- / 1.044	- / 1.429	- / 0.000	- / 1.429
2.2) CANES - Afloat Design Service Agent (MIP)	- / 9.509	- / 1.834	- / 2.036	- / 1.558	- / 0.000	- / 1.558
<b>Subtotal: Support</b>	- / 16.426	- / 2.155	- / 3.080	- / 2.987	- / -	- / 2.987
<b>Installation</b>						
<b>Modification Item 1 of 1:</b> CANES-Afloat 5G010/5G777 MIP	- / 62.803	- / 18.622	- / 11.976	- / 16.823	- / 0.000	- / 16.823
<b>Subtotal: Installation</b>	- / 62.803	- / 18.622	- / 11.976	- / 16.823	- / -	- / 16.823
<b>Total</b>						
<b>Total Cost (Procurement + Support + Installation)</b>	<b>249.768</b>	<b>28.695</b>	<b>36.013</b>	<b>47.579</b>	<b>0.000</b>	<b>47.579</b>

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy						<b>Date:</b> May 2017							
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 10				<b>P-1 Line Item Number / Title:</b> 2925 / CANES Intell				<b>Modification Number / Title:</b> 1 / CANES-Afloat 5G010/5G777 MIP					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :						<b>MDAP/MAIS Code:</b>							
<b>Modification Item 1 of 1:</b> CANES-Afloat 5G010/5G777 MIP													
<b>Manufacturer Information</b>													
Manufacturer Name: Multiple Vendors <sup>(6)</sup>						Manufacturer Location: Various							
Administrative Leadtime <i>(in Months)</i> : 1						Production Leadtime <i>(in Months)</i> : 6							
<b>Dates</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018</b>							
Contract Dates		Feb 2016		Jan 2017		Nov 2017							
Delivery Dates		Aug 2016		Jul 2017		May 2018							
<b>Installation Information</b>													
<b>Method of Implementation:</b> [none specified]:: Installation Name: CANES - Afloat Production Units - MIP													
<b>Installation Cost</b>	<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>		
	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	50 / 62.803		17 / 17.579		- / -		- / -		- / -		- / -		
FY 2016	- / -		1 / 1.043		5 / 5.468		- / -		- / -		- / -		
FY 2017	- / -		- / -		3 / 2.909		9 / 9.926		0 / 0.000		9 / 9.926		
FY 2018	- / -		- / -		- / -		4 / 1.953		0 / 0.000		4 / 1.953		
Total	50 / 62.803		18 / 18.622		8 / 8.377		13 / 11.879		0 / 0.000		13 / 11.879		
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	39	11	2	2	8	6	1	2	1	4	4	4	1
Out	35	3	6	4	4	7	8	1	3	1	4	4	4
<b>Method of Implementation:</b> [none specified]:: Installation Name: CANES Afloat Technical Insertion - MIP													
<b>Installation Cost</b>	<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>		
	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	- / -		- / -		- / -		- / -		- / -		- / -		
FY 2016	- / -		- / -		3 / 1.129		- / -		- / -		- / -		
FY 2017	- / -		- / -		2 / 2.470		8 / 3.837		0 / 0.000		8 / 3.837		
FY 2018	- / -		- / -		- / -		3 / 1.107		0 / 0.000		3 / 1.107		
Total	- / -		- / -		5 / 3.599		11 / 4.944		0 / 0.000		11 / 4.944		

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy										<b>Date:</b> May 2017			
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 10					<b>P-1 Line Item Number / Title:</b> 2925 / CANES Intell					<b>Modification Number / Title:</b> 1 / CANES-Afloat 5G010/5G777 MIP			
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :								<b>MDAP/MAIS Code:</b>					
<b>Modification Item 1 of 1:</b> CANES-Afloat 5G010/5G777 MIP													
<b>Installation Information</b>													
<b>Method of Implementation:</b> [none specified]:: Installation Name: CANES Afloat Technical Insertion - MIP													
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	-	-	-	-	-	-	2	1	-	2	4	2	2
Out	-	-	-	-	-	-	-	2	1	-	2	4	2
<p><b>Footnotes:</b></p> <p>(3) - First quarter installations reflected in the Installation Schedule are funded in the prior year in order to fund the installation contracts 90 days prior to the beginning of installation work. 90 days are needed to allow sufficient time for the contractor to plan the work schedule, order material, and perform necessary fabrication. This procedure allows installations to be scheduled in the first quarter, supporting Fleet availabilities. -CANES installations are conducted across several fleet concentration areas supported by six installation Multiple Award Contract (MAC) holders. The SPAWAR Installation Management Organization (IMO) has ensured sufficient Alteration Installation Teams (AIT) resources are available to meet the FY18 - 22 CANES installation plan. -CANES Afloat production units require an additional 4 months after delivery for integration, assembly and testing prior to installation start. Installations do not begin until 10 months after contract award (6 months production lead time (PLT) + 4 months integration). Total lead time, including admin lead time, is 11 months. -The procurement average unit cost fluctuation is due to variance in system configuration requirements for each CANES platform type. Furthermore, because CANES production units and installations are procured through separate multiple award contracts, there are unit cost fluctuations associated with the contracting process. A CANES unit level platform (DDG/CG/LSD) requires a smaller system, supporting fewer users and applications than force level platforms with a greater number of users and applications. For example, a CANES DDG design consists of 18 equipment racks and ~400 workstations, while a CANES CVN system consists of 48 equipment racks and ~3000 workstations. The average procurement cost (hardware, software, integration, and engineering support) for a unit level ship ranges from \$5.2M to \$7.5M, while the average procurement cost for a force level platform ranges from \$11.8M to \$15.6M, and submarine unit procurement costs range from \$2.7M to \$4.6M. These costs include both the MIP and non-MIP components of the CANES units. -Installation cost fluctuations are attributed to and dependent on ship class, variant of predecessor system the hull currently has installed. As an example of variant differences, if a CVN has an ISNS Delta variant installed, a CANES installation is estimated to be \$18.2M. If that same CVN had a legacy Asynchronous Transfer Mode Local Area Network (ATM LAN) the CANES installation is estimated to be \$22.4M. -FY17 quantities were adjusted from PB17 due to fact of life fielding plan changes driven by installation availability schedules, resulting in a different mix of platforms procured and installed.</p> <p>(4) - First quarter technical insertion installations reflected in the Installation Schedule are funded in the prior year in order to be able to fund the installation contracts 90 days prior to the beginning of shipboard installation work. 90 days are needed to allow sufficient time for the contractor to plan the work schedule, order material, and perform necessary fabrication. This procedure allows installations to be scheduled in the first quarter thereby supporting Fleet availability. - CANES technical insertion installations are conducted across several fleet concentration areas supported by six installation Multiple Award Contract (MAC) holders. The SPAWAR Installation Management Organization (IMO) has ensured sufficient Alteration Installation Teams (AIT) resources are available to meet the FY18 - 22 CANES installation plan. - CANES Afloat technical insertion units require an additional 4 months after delivery for operational integration, assembly and testing prior to installation start. Installations do not begin until 10 months after contract award (6 months production lead time (PLT) + 4 months integration). Total lead time, including admin lead time, is 11 months.</p> <p>(5) First articles are defined as necessary production design drawings, environmental (shock and vibration) qualifications, logistics and training artifacts as well as a certified tested baseline provided to the government for each platform first of its kind. First articles are separate from production units and must be bought prior to the procurement of the corresponding production units. Procurement Lead Time (PLT) is 8 months for First Articles (DDG, CVN, submarines, etc). All following production articles of the same variant require a PLT of 6 months. CANES First Articles are not installed. Average unit cost fluctuations are attributable to variances in system configuration requirements among platforms. A DDG/CG/LSD (unit level platforms) has fewer users and runs fewer applications than a LHD/CVN/LPD (force level platforms). Force level platforms are larger in scale compared to the unit level ships and represent a super set of users, applications and connected systems. The FY15 and FY17 units are Unit Level procurements. The FY16 procurement is a force level system.</p> <p>(6) CANES: Full Production Contract has 7 possible vendors on MAC award: Northrop Grumman Systems Corp, BAE Sytems Technology Solutions &amp; Services, General Dynamics C4 Systems, Global Technical Systems, SERCO, Inc, CGI Federal Inc, DRS Laurel Technologies. This contract will be used for both production and tech refresh units.</p>													

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**Exhibit P-40, Budget Line Item Justification:** FY 2018 Navy **Date:** May 2017

<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment	<b>P-1 Line Item Number / Title:</b> 2940 / Gen Purp Elec Test Equip (GPETE)
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<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A	<b>Program Elements for Code B Items:</b> N/A	<b>Other Related Program Elements:</b> N/A
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**Line Item MDAP/MAIS Code:** N/A

Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	13,363.567	6.962	6.428	6.861	0.000	6.861	6.996	7.143	7.290	7.435	42.029	13,454.711
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	13,363.567	6.962	6.428	6.861	0.000	6.861	6.996	7.143	7.290	7.435	42.029	13,454.711
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority (<i>\$ in Millions</i>)</b>	<b>13,363.567</b>	<b>6.962</b>	<b>6.428</b>	<b>6.861</b>	<b>0.000</b>	<b>6.861</b>	<b>6.996</b>	<b>7.143</b>	<b>7.290</b>	<b>7.435</b>	<b>42.029</b>	<b>13,454.711</b>

*(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:

This program provides for the initial procurement and distribution of General Purpose Electronic Test Equipment (GPETE). This equipment is essential to the operational readiness of the Navy for repair, installation, and maintenance (preventive and routine) of electronic systems and equipments, both afloat and ashore. The GPETE procured must meet rigid technical requirements, be cost effective and satisfy valid deficiencies in authorized allowance. Within the TMDE program, GPETE is classified under 4 functional groups: Fiber Optics (M600), Signal Generators (M6001), Oscilloscopes & Meters (M6002), and Passive/Ancillary/Mechanical (M6004). The program also breaks out a fifth cost code (M6003) for non-equipment (i.e. labor) tasks including engineering, procurement and integrated logistics support. The TMDE program procures Commercial-off-the-Shelf (COTS; i.e. non-government manufactured test equipment that is available to the general public) GPETE to address the maintenance requirements across shipboard/shore-based activities and programs. Approximately 80% of the annual test equipment requirements are procured through the DOD Supply System, or MILSTRIP, process. When the program procures through MILSTRIP, DLA or NAVSUP WSS fills the requisition. The remaining 20% of procurements are Simplified Acquisition Purchase (SAP) contracts or purchase card (P-card) buys. SAP and P-card requisitions are utilized only for obsolete test equipment that is no longer available for procurement through MILSTRIP. Any variance in unit costs and quantity across fiscal years is attributable to the diversity and varying complexity of the Commercial-off-the-Shelf GPETE to be procured from year to year to address the maintenance requirements across shipboard/shore-based activities and programs.

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy										<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment							<b>P-1 Line Item Number / Title:</b> 2950 / Network Tactical Common Data Link (CDL)					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A				<b>Program Elements for Code B Items:</b> 0205604N				<b>Other Related Program Elements:</b> N/A				
<b>Line Item MDAP/MAIS Code:</b> N/A												
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>To Complete</b>	<b>Total</b>
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	0.000	0.290	0.000	8.081	0.000	8.081	5.467	5.470	0.057	21.699	Continuing	Continuing
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	0.000	0.290	0.000	8.081	0.000	8.081	5.467	5.470	0.057	21.699	Continuing	Continuing
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>0.000</b>	<b>0.290</b>	<b>0.000</b>	<b>8.081</b>	<b>0.000</b>	<b>8.081</b>	<b>5.467</b>	<b>5.470</b>	<b>0.057</b>	<b>21.699</b>	<b>Continuing</b>	<b>Continuing</b>
<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> )	-	-	-	-	-	-	-	-	8.164	4.140	Continuing	Continuing
Flyaway Unit Cost ( <i>\$ in Dollars</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ( <i>\$ in Dollars</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<p><b>Description:</b></p> <p>Network Tactical Common Data Link (NTCDL) provides network interface capability, wideband encryption, and command link upgrades to the Communication Data Link System (CDLS). Primarily, NTCDL provides multiple networked, simultaneous links to support surface to air, air to surface, air to air, and surface to surface platform Intelligence Surveillance and Reconnaissance (ISR) communications, where CDLS is a single link, point to point, air to surface/surface to air capability. The current NTCDL program budget begins in FY22, and supports the fielding of NTCDL Increment 1 on surface platforms to include CG, DDG, LCS, CVN, LHA, LHD, LCC.</p> <p>Communication Data Link System (CDLS) Technical Refresh (TR) provides fielding link management computer upgrades to meet Fleet Windows 10 Operating System IA requirements, a second 360 degree data link, as well as the inclusion of digital distribution of ISR, Full Motion Video (FMV), and Anti-Submarine Warfare (ASW) data in both Cypher Text (CT) and Plain Text (PT) to Automated Digital Network System (ADNS) for shipboard dissemination to support Anti-Access/Area Denial (A2AD). Supports various Common Data Link (CDL) air platforms including MH-60R, MQ-4 Triton, MQ-8B/C Fire Scout, P-3, P-8, and Unmanned Carrier-Launched Airborne Surveillance and Strike (UCLASS) vehicle, to include command and control of the aircraft during flight operations. The CDLS TR upgrade includes Flight Deck Checkout test link between aircraft on the deck through CDLS to end-user prior to flight operations to ensure End-to-End connectivity of organic assets prior to missions.</p> <p>Link 16 Antenna will be applied as part of the back-fit modification that are intended for the Expeditionary Mobile Base-3 and 4 (formerly Mobile Landing Platform Afloat Forward Staging Base - MLP-3 and 4 AFSB) to handle various special operations mission sets after delivery.</p>												
<p><b>Justification:</b></p> <p>FY18 Funding supports procurement and installation of 4 Communication Data Link System (CDLS) Technical Refresh (TR) systems for CVN platforms. Due to increased fleet Common Data Link (CDL) operations and obsolescence issues, a technical refresh is required to extend the life of the system beyond its intended design. CDLS TR addresses whole system reliability, sub-component obsolescence, and emerging Anti-Access/Area Denial (A2AD) Fleet requirements that are significantly degrading Fleet readiness, including Operational Availability (Ao), and system supportability. CDLS TR also provides IA/Cyber security upgrades to Windows 10 OS.</p>												

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy										<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment							<b>P-1 Line Item Number / Title:</b> 2960 / Integ Combat System Test Facility					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A				<b>Program Elements for Code B Items:</b> N/A				<b>Other Related Program Elements:</b> N/A				
<b>Line Item MDAP/MAIS Code:</b> N/A												
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>To Complete</b>	<b>Total</b>
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	21.932	13.614	8.376	5.019	0.000	5.019	6.796	6.796	6.603	6.796	-	75.932
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	21.932	13.614	8.376	5.019	0.000	5.019	6.796	6.796	6.603	6.796	-	75.932
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>21.932</b>	<b>13.614</b>	<b>8.376</b>	<b>5.019</b>	<b>0.000</b>	<b>5.019</b>	<b>6.796</b>	<b>6.796</b>	<b>6.603</b>	<b>6.796</b>	<b>-</b>	<b>75.932</b>
<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> )	-	0.498	0.195	0.250	-	0.250	0.274	0.361	0.349	0.314	Continuing	Continuing
Flyaway Unit Cost ( <i>\$ in Dollars</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ( <i>\$ in Dollars</i> )	-	-	-	-	-	-	-	-	-	-	-	-

**Description:**  
 This program supports various Navy Land Based Test Sites (LBTS) required to support integration and interoperability testing. Sites include, but are not limited to: Naval Surface Warfare Center (NSWC) Dahlgren, Surface Combat System Center (SCSC) Wallops Island, and NSWC Dam Neck.

The United States Navy has a requirement to fully test and certify computer programs for maturity, Interoperability and Integration (I&I) prior to delivery to the Fleet. Commander, U.S. Fleet Forces Command (CFFC) provided specific direction to develop a unified modernization process and certify all combat system baselines for integration and interoperability as an integral step in the CNO Optimized Fleet Response Plan (O-FRP). Various Navy facilities, serving as LBTS, conduct the required testing in support of CVN, DDG, CG, LHD, LHA, LPD17 and LSD class ships. These sites also comprise the Navy's Distributed Integration & Interoperability Assessment Capability (DIIAC) (supported through the use of JMETC network) alliance, which performs Interoperability Assessment and Systems Engineering Events (SEEs) for deploying Strike Groups.

These facilities also provide combat system in-service support to respond to emergent fleet problems. This capability tests and certifies new combat system baseline in a lab based environment, which has significantly reduced the cost of corrective action and shifted the burden of problem discovery away from the operator at sea. It also provides support to the acquisition community to conduct interoperability (shift to the left) testing earlier in the acquisition cycle.

As existing system experience parts obsolescence issues and tech refresh updates, the LBTS must procure and install existing test beds to accurately replicate the Command, Control, Communication, Computer, Combat System and Intelligence (C5I) configuration that are designed for the fleet. In addition, new combat systems architectures are under development for new ship classes such as LCS, CVN 78, DDG 1000, as well as new Open Architecture (OA) variants of legacy suites. Procurement of production representative systems of these OA combat systems being delivered to operational fleet units is critical to ensure that testing and subsequent certification of both current and newly installed combat systems is in accordance with NAVSEAINST 9410.2 Naval Warfare Systems Certification Policy (NWSCP) and the O-FRP Program.

The basic procurement outlined herein is directed at expanding various facilities capability to support Interoperability Integration and Stressful Endurance testing. Procurement requirements are directly tied to the interoperability testing schedule and establish independence between test beds allowing for parallel certification efforts. Procurements are required to build the necessary test beds and for laboratory support equipment. This budget procures lab support equipment that various facilities are able to support the new tactical subsystems that use COTS equipment.

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment		<b>P-1 Line Item Number / Title:</b> 2960 / Integ Combat System Test Facility
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A	<b>Program Elements for Code B Items:</b> N/A	<b>Other Related Program Elements:</b> N/A
<b>Line Item MDAP/MAIS Code:</b> N/A		
<p>In addition, the basic program provides for equipment/upgrades for the Navy's Distributed Integration &amp; Interoperability Assessment Capability (DIIAC) needed to conduct interoperability assessment testing. The DIIAC consists of 14 land based sites networked to certify computer programs prior to their delivery to the fleet and provides support to the acquisition community to conduct interoperability and integration (shift to the left) testing earlier in the acquisition cycle. Interoperability Assessment and Stressful Endurance testing is required for all deploying strike groups per the Joint Fleet Instruction.</p> <p>[P40A / M8400 - SESEF Electronic Equipment]: The Shipboard Electronic Systems Evaluation Facilities (SESEF) are Navy owned and operated test sites. The SESEF Program mission is to provide electromagnetic system tests and evaluations to afloat and shore commands for upgraded systems, to validate system performance following new construction and overhaul/availability, and to provide real-time assessment of material readiness in an operational environment. Also provided are: system modernization and integration, system and equipment component procurement and software (S/W) upgrades for test systems to include for Tactical Control and Navigation (TACAN), Antenna Radiation Pattern systems (ARP), Information Friend or Foe (IFF), Direction Finder (DF)/Radio Direction Finder (RDF), LINK 11/16, Electronic Warfare/ Electronic Attack (EW/EA) and HF/VHF/UHF communication systems including secure voice. SESEFs have been used effectively to conduct TACAN certifications, support AN/SLQ-32 Electronic Warfare (EW) Planned Maintenance System (PMS), Ship Signals Exploitation Equipment (SSEE) and to detect and isolate shipboard system deficiencies leading to maintenance action to increase ship material readiness at the completion of construction, delivery availabilities, during routine ship operations, and prior to deployment.</p> <p>[P40A / M8500 - Interoperability Assessment Equipment]: M8500 - INTEROPERABILITY ASSESSMENT EQUIPMENT KNOWN AS DISTRIBUTED INTEGRATION &amp; INTEROPERABILITY ASSESSMENT CAPABILITY (DIIAC) Procures upgrades to support the 14 sites that comprise the Navy's DIIAC sites. Procures hardware that provides the DIIAC Operations Center (DOC) the ability to support monitoring and execution of events providing data collection and distribution. Funds are also allocated for site upgrades to meet current standards and allow scalability for DIIAC requirements. In addition, to enable the DIIAC to maintain efficiency and product improvement to interface with other Joint communities using Joint Mission Environment Test Community (JMETC) network.</p>		
<p><b>Justification:</b> Funding supports procurements and installations for the modernization of the eight operational sites across the AORs to support the surface fleet spectrum requirements. FY17 and follow on funding requirements are to maintain the upgrades conducted in FY16 and the addition of the 8th site in Guam.</p>		

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy										<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment							<b>P-1 Line Item Number / Title:</b> 2970 / EMI Control Instrumentation					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A				<b>Program Elements for Code B Items:</b> N/A				<b>Other Related Program Elements:</b> N/A				
<b>Line Item MDAP/MAIS Code:</b> N/A												
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>To Complete</b>	<b>Total</b>
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	132.192	4.175	3.971	4.188	0.000	4.188	4.331	4.439	4.535	4.625	-	162.456
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	132.192	4.175	3.971	4.188	0.000	4.188	4.331	4.439	4.535	4.625	-	162.456
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>132.192</b>	<b>4.175</b>	<b>3.971</b>	<b>4.188</b>	<b>0.000</b>	<b>4.188</b>	<b>4.331</b>	<b>4.439</b>	<b>4.535</b>	<b>4.625</b>	-	<b>162.456</b>
<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> )	-	-	-	-	-	-	-	-	-	-	-	-
<p><b>Description:</b></p> <p>The EMI Control Instrumentation Program is supported by OPNAV N2N6, OPNAV N95, OPNAV N96, OPNAV N97 and OPNAV N98. The EMI Control Instrumentation Program provides Cradle to Grave Systems Engineering for Mission Assurance by implementing Electromagnetic Compatibility (EMC) hardware solutions, Spectrum Management (SM) software solutions, and by procuring specialized test equipment used in the characterization/quantification of EMI problems aboard US Navy platforms. This ensures equipment, systems, and platforms meet their Operational Mission Requirements and goals within their intended operational Electromagnetic (EM) environment.</p> <p>MA004 - EMI (HARDWARE) FIXES: Procurement and installation of Electromagnetic Interference (EMI) Hardware Solutions (i.e. Fixes) will achieve Electromagnetic Compatibility (EMC) among and between shipboard electronic/electric systems and/or equipment. This will be accomplished by determining the optimal EMI fix hardware, evaluating the effectiveness of the EMI solution, then procuring and installing the required hardware with full integrated logistic support (ILS) as part of the system hardware (ECP, OA, FC, etc). The fixes may include various types of radio frequency (RF) filters, limiters, blankers, radar absorbing material (RAM) and shielding methods. MA004 - EMI (Hardware) Fixes is supported by OPNAV N95, OPNAV N96, OPNAV N97 and OPNAV N98.</p> <p>MA104 - EMI (SOFTWARE) FIXES: Procurement and installation of EMI Software Fixes for platform/strike group/Area of Operation. These specific spectrum procedures (software application capabilities) and frequency management techniques (software modules) will be used to eliminate and reduce EMI when hardware solutions are unacceptable. Funds will also be used to provide engineering support to the enhancement of spectrum software applications through the procurement of models and other capabilities, including ILS for software tools/utilities/applications that correct/mitigate operational EMI. MA104 - EMI (Software) Fixes are supported by OPNAV N95, OPNAV N96, OPNAV N97 and OPNAV N98.</p> <p>MA204 - EMI CONTROL INSTRUMENTATION: EMI Control Instrumentation will procure specialized test equipment used in the characterization and quantification of EMI problems aboard US Navy platforms. In addition, instrumentation will be procured for use in identifying the sources of EMI and determining the extent of EMI so that effective corrective measures can be applied. The instrumentation procured will include automated and special EMI test equipment (e.g., for spectrum analysis, mapping field intensities, etc.). EMI Control Instrumentation can include both hardware and software products that will enhance or streamline data collection efforts, including the ability to provide remote access capability. MA204 - EMI CONTROL INSTRUMENTATION are supported by OPNAV N2N6.</p>												
<p><b>Justification:</b></p> <p>OPN Funds are used to procure and install (P/I) EMI Fixes on deploying ships and submarines. The number of EMI Fixes procured, MA004 Hardware Fixes, are dependent on the number of ships/subs in the fleet and when they deploy. Between FY2017 and FY2018, according to the Ship and Aircraft Supplemental Data Tables (SASDT) force structure projections for the US Navy, there is an overall increase in</p>												

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment		<b>P-1 Line Item Number / Title:</b> 2970 / EMI Control Instrumentation
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A	<b>Program Elements for Code B Items:</b> N/A	<b>Other Related Program Elements:</b> N/A
<b>Line Item MDAP/MAIS Code:</b> N/A  commissioned ships/subs of 8 (i.e., 296 to 304). EMI Hardware fixes vary in cost; based on complexity, and ship/sub class/types. The increase in cost for MA004 will cover the projected increase in EMI Fix P/I requirements for FY2018.		

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy										<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment							<b>P-1 Line Item Number / Title:</b> 2980 / Items less than \$5 Million					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A				<b>Program Elements for Code B Items:</b> N/A				<b>Other Related Program Elements:</b> N/A				
<b>Line Item MDAP/MAIS Code:</b> N/A												
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>To Complete</b>	<b>Total</b>
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	394.207	66.176	58.721	105.292	0.000	105.292	79.882	77.153	81.865	68.639	609.561	1,541.496
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	394.207	66.176	58.721	105.292	0.000	105.292	79.882	77.153	81.865	68.639	609.561	1,541.496
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>394.207</b>	<b>66.176</b>	<b>58.721</b>	<b>105.292</b>	<b>0.000</b>	<b>105.292</b>	<b>79.882</b>	<b>77.153</b>	<b>81.865</b>	<b>68.639</b>	<b>609.561</b>	<b>1,541.496</b>
<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> )	-	1.348	0.598	0.627	-	0.627	0.445	0.732	-	-	-	3.750
Flyaway Unit Cost ( <i>\$ in Dollars</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ( <i>\$ in Dollars</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<p><b>Description:</b></p> <p>[P40A / DC004 CALIBRATION STANDARDS]: These funds procure calibration equipment for intermediate and organizational maintenance levels. Test And Monitoring Systems (TAMS), which include test equipment and gauges, must be calibrated to ensure the equipment is operational, accurate and precise. Funds are used to procure Calibration Standards. Calibration Standards are equipments which ensure the accuracy of test equipment used to install, align, and maintain all navy weapons systems shore and afloat. Intermediate Maintenance Activities (IMA) mechanical standards programs provide various new and replacement calibration equipment for instrument repair and calibration shops aboard tenders and shore based intermediate maintenance activities. The shipboard gauge calibration program provides the organization maintenance level aboard ship with portable calibration equipment to provide calibration support in only specific areas of measurement. Integrated Condition Assessment System (ICAS) is a Non-Developmental Item (NDI) (Commercial-Off-The-Shelf (COTS) equipment) computer-based system that provides real-time, on-line machinery condition monitoring and failure detection, diagnosis, trending for failure prognosis and expert troubleshooting capability. ICAS is linked through data networks to other critical ship systems, such as machinery control, damage control and bridge systems to receive necessary sensory information.</p> <p>[P40A / DC019 RADAR RESTORATION AN/SPS-67 ANTENNA]: Funding in this line establishes an antenna manufacturing capability at Naval Surface Warfare Center (NSWC) Crane needed to provide additional rotatable pool antennas and associated engineering changes for the AN/SPS-67(V)3 to support the restoration of installed fleet antennas. The current number of available antennas is insufficient to support the fleet population. This has led to antennas operating in the field beyond their periodicity, resulting in decreased detection and tracking capability.</p> <p>[P40A / DC020 DUAL BAND RADAR (DBR)]: Funding is required to establish the In-Service Engineering Agent (ISEA), Original Equipment Manufacturer (OEM) production services and support for Configuration Management. Funding also implements the DBR Life Cycle Sustainment Plan (LCSP) and infrastructure, Diminishing Manufacturing Sources and Material Shortages (DMSMS) Plan, associated hardware and software obsolescence mod kits, procurement of Engineering Change Proposals (ECPs), associated logistics products and on-board allowance requirements to enable system operation. Production Support is also required to assist with DBR Combat System Integration and Technical Documentation. Additional limitations will be identified during CVN78/DDG1000 Shipboard Activation, Integration and At-Sea Testing. Additionally, as a result of DBR land based testing at the Wallops Island Engineering Test Center (WIETC) limitations were identified in the Dual Band Radar (DBR) performance that directly impacted CVN 78 and DDG 1000 class readiness. These limitations require ECPs to correct the performance areas of the radar for Air Traffic Control and Integrated Combat Systems (e.g., False Clutter Tracks, Short Range Tracking, General Tracking, Slow Air Tracking, Waveform Scheduling, and code stability). The Prime Contractor and Government Technical Team have documented critical radar issues that require correction via ECPs in FY17-FY21. Funding for these ECP efforts increases in FY17 due to the engineering and technical complexity of the change proposal needed to satisfy combat system qualification requirements.</p> <p>[P40A / DC021 AN/SPS-67(V)5 MARITIME RADAR PROCESSOR (MRP)]: The Maritime Radar Processor (MRP) was developed to improve the detection of small boats/targets by USN ships. Funding in this line will be used to integrate and field small boat detection software improvements to AN/SPS-67(V)5 Surface Search Radar.</p>												

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment		P-1 Line Item Number / Title: 2980 / Items less than \$5 Million
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>[P40A / DC022 RADAR RESTORATION MATERIAL]: DC022 - Radar Restoration Materials - Funding in this line procures components to support radar restoration (AN/SPS-48 Arrays and miscellaneous Antenna Sub-Assemblies) and Engineering Change Proposals (ECPs) to address obsolescence and improve supportability.</p>		
<p>[P40AMOD / DC001 - SPS-73 RADAR]: The AN/SPS-73(V) Radar provides navigation and general surface search radar functionality on all U.S. Navy ships. The AN/SPS-73(V)12 is the Program of Record (POR) Automatic Radar Plotting Aid (ARPA) Navigation Radar for the U.S. Navy. Funding will be utilized for engineering changes which will improve surface combatant's ability to engage fast attack craft/fast in shore attack craft (FAC/FIAC) tracking and periscope detection and discrimination, as well as addressing cybersecurity shortfalls and Commercial-Off-The-Shelf (COTS) obsolescence of the legacy AN/SPS-73 systems. The AN/SPS-73 Next Generation Surface Search Radar (NGSSR) will update the current AN/SPS-73(V)12 and may in the future obviate the need for the AN/SPS-67(V) and all Commercial Navigation Radars fielded in the fleet. Next Generation non-recurring engineering (NRE) has increased in FY17-FY21 due to the revised program direction to mitigate fast attack craft/fast in shore attack craft (FAC/FIAC), to address cybersecurity shortfalls and to capitalize on periscope detection and discrimination capabilities.</p>		
<p>[P40AMOD / DC015 - TACTICAL ENVIRONMENTAL PROCESSOR (TEP)]: Provides real-time valunumeric wind profiles, convective weather detection/display, and radar refractivity assessments from AN/SPY-1 radar returns. TEP will be an adjunct processor and display, tapping radar data from weather and refractivity data, with users able to access information through Secret Internet Protocol Router (SIPR). TEP installations began in FY13, are aligned with AEGIS Modernization in FY14 and will continue beyond the FYDP.</p>		
<p>[P3A - 2 / DC009 - AN/SPS-48G RADAR OBSOLESCENCE AND AVAILABILITY RECOVERY (ROAR)]: The AN/SPS-48G 3-D Air Surveillance Radar is a follow-on to the existing AN/SPS-48E onboard Aircraft Carriers and large-deck Amphibious ships. AN/SPS-48G was initiated in response to Fleet complaints regarding AN/SPS-48E reliability and supportability. Upgrade of the AN/SPS-48E with the AN/SPS-48G remains a high Fleet priority as it will reduce Operation and Support (O&amp;S) costs and improve Operational Availability. Both factors are cited by the Fleet as unsatisfactory for the AN/SPS-48E. The goal is to replace the AN/SPS-48E as rapidly as possible so the Fleet can realize these cost savings. Current efforts include the manufacturing of the AN/SPS-48G upgrade kits with associated production support as well as modifications to the AN/SPS-48G brought about by initial Fleet introduction and Fleet operations. Production lead time is 24 months for the initial unit with subsequent units delivered at two month intervals after initial delivery. Equipment delivery for installation is required thirty days prior to FMP availability start in accordance with Navy Modernization Process Management. Engineering Change Order funding is included to address Fleet recommended modifications/ requirements and Information Assurance, Obsolescence, and Diminishing Manufacturing Sources (DMS) issues. FY13 and beyond Engineering Change Proposal funding is to initiate incorporation of High Diver Detection and Tracking functionality. This capability was designed and incorporated into the AN/SPS-48E after design of the AN/SPS-48G had been initiated. This change now needs to be translated into the different hardware and software architectures of the AN/SPS-48G. The variances in FY17 and FY18 ECP, ECO, Production Support, and Installation costs from PB17 are due to realignments that were caused by more accurately matching the budget to the actual installation schedule for LPDs 22 and 23, and by the need to fund completion of Information Assurance, High Diver, and AEM/S functionality requirements.</p>		
<p>[P3A - 5 / DC018 - AN/SPY-1 RM&amp;A IMPROVEMENTS]: DC018 AN/SPY-1 RM&amp;A IMPROVEMENTS - These Reliability, Maintainability, and Availability (RM&amp;A) improvements are intended to reduce cascading failures, mitigate obsolescence issues, and improve reliability in support of Anti-Air Warfare (AAW) and Ballistic Missile Defense (BMD) missions while still providing AN/SPY-1 Radar Total Ownership Cost (TOC) reductions. The improvements include, but are not limited to, installation for Sidewall Capacitor Circuit Protection and 10kW Traveling Wave Tube (TWT) Monitoring Circuits Ordnance Alterations (ORDALTS) for AN/SPY-1; B (V), D, D (V), OUCG and DDGs. Solid State Switch Assemblies (SSSA) will replace legacy switch tube modulator deck via an ORDALT. Multi-Mission Signal Processor (MMSP) is the signal processor for the AN/SPY-1 radar. MMSP Refresh (MMSP-R) cabinets will be procured to provide production representative configurations for land-based testing and training to support AEGIS ships at AEGIS Training and Readiness Center (ATRC) and Surface Combat System Center (SCSC) Wallops Island. Increased funding in FY18 includes the procurement of two MMSP-R cabinets for Virginia sites, procurement of assets and shock qualification testing of SSSA and SPY-1D(V) Final Power Amplifier (FPA) cabinet required by MILSPEC 901-D.</p>		



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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy								<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 10: Other Shore Electronic Equipment						<b>P-1 Line Item Number / Title:</b> 2980 / Items less than \$5 Million				
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A			<b>Program Elements for Code B Items:</b> N/A			<b>Other Related Program Elements:</b> N/A				
<b>Line Item MDAP/MAIS Code:</b> N/A										
Exhibits Schedule					Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Items less than \$5 Million				- / 68.365	- / 13.669	- / 21.613	- / 25.909	- / -	- / 25.909
P-40a	DC001 - SPS-73 RADAR				- / 48.847	- / 6.652	- / 3.669	- / 2.027	- / 0.000	- / 2.027
P-40a	DC015 - TACTICAL ENVIRONMENTAL PROCESSOR (TEP)				- / 5.413	- / 0.995	- / 1.293	- / 1.484	- / 0.000	- / 1.484
P-3a	2 / DC009 - AN/SPS-48G RADAR OBSOLESCENCE AND AVAILABILITY RECOVERY (ROAR) (TBD)				- / 253.577	- / 26.994	- / 13.544	- / 39.017	- / 0.000	- / 39.017
P-3a	5 / DC018 - AN/SPY-1 RM&A IMPROVEMENTS (TBD)				- / 18.005	- / 17.866	- / 18.602	- / 36.855	- / 0.000	- / 36.855
<b>P-40</b>	<b>Total Gross/Weapon System Cost</b>				<b>- / 394.207</b>	<b>- / 66.176</b>	<b>- / 58.721</b>	<b>- / 105.292</b>	<b>- / 0.000</b>	<b>- / 105.292</b>
<small>*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.</small>										
<small>Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.</small>										

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy															Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10						P-1 Line Item Number / Title: 2980 / Items less than \$5 Million						Aggregated Items Title: Items less than \$5 Million								
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
1) DC001 SPS-73 RADAR																				
1.1) TECH REFRESH (1)	A		209,565.89	129	27.034	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 1) DC001 SPS-73 RADAR			-	-	27.034	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2) DC004 CALIBRATION STANDARDS																				
2.1) CALIBRATION STANDARDS (2)	A		32,828.35	635	20.846	23,440.79	152	3.563	51,984.38	64	3.327	63,763.89	72	4.591	-	-	-	63,763.89	72	4.591
Subtotal: 2) DC004 CALIBRATION STANDARDS			-	-	20.846	-	-	3.563	-	-	3.327	-	-	4.591	-	-	-	-	-	4.591
3) DC019 RADAR RESTORATION AN/SPS-67 ANTENNA																				
3.1) HARDWARE	A		493,250.00	4	1.973	492,000.00	1	0.492	-	-	-	-	-	-	-	-	-	-	-	-
3.2) OTHER	A		-	-	1.716	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 3) DC019 RADAR RESTORATION AN/SPS-67 ANTENNA			-	-	3.689	-	-	0.492	-	-	-	-	-	-	-	-	-	-	-	-
4) DC020 DUAL BAND RADAR (DBR)																				
4.1) DBR PRODUCTION SUPPORT	A		-	-	3.577	-	-	0.265	-	-	3.054	-	-	2.843	-	-	-	-	-	2.843
4.2) DBR ENGINEERING CHANGE PROPOSALS (ECPS) (3)	A		-	-	2.773	-	-	8.657	-	-	14.580	-	-	13.579	-	-	-	-	-	13.579
Subtotal: 4) DC020 DUAL BAND RADAR (DBR)			-	-	6.350	-	-	8.922	-	-	17.634	-	-	16.422	-	-	-	-	-	16.422
5) DC021 AN/SPS-67(V)5 MARITIME RADAR PROCESSOR (MRP)																				
5.1) AN/SPS-67(V)5 MARITIME RADAR PROCESSOR	A		-	-	2.922	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 5) DC021 AN/SPS-67(V)5 MARITIME RADAR PROCESSOR (MRP)			-	-	2.922	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6) DC012 AN/SPS-74(V) PERISCOPE DETECTION RADAR																				
6.1) PRODUCTION SUPPORT	A		-	-	1.654	-	-	0.692	-	-	0.652	-	-	0.696	-	-	-	-	-	0.696
Subtotal: 6) DC012 AN/SPS-74(V) PERISCOPE DETECTION RADAR			-	-	1.654	-	-	0.692	-	-	0.652	-	-	0.696	-	-	-	-	-	0.696
7) RED FALCON (OCO)																				
7.1) RED FALCON (OCO)	A		-	-	5.870	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 7) RED FALCON (OCO)			-	-	5.870	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy															Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10						P-1 Line Item Number / Title: 2980 / Items less than \$5 Million									Aggregated Items Title: Items less than \$5 Million					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
8) DC022 RADAR RESTORATION MATERIAL <sup>(4)</sup>																				
8.1) 48 ARRAYS	A		-	-	-	-	-	-	-	-	-	9,827.78	360	3.538	-	-	-	9,827.78	360	3.538
8.2) ANTENNA SUB-ASSEMBLIES	A		-	-	-	-	-	-	-	-	-	-	-	0.292	-	-	-	-	-	0.292
8.3) ENGINEERING CHANGE PROPOSALS (ECPS)	A		-	-	-	-	-	-	-	-	-	-	-	0.370	-	-	-	-	-	0.370
Subtotal: 8) DC022 RADAR RESTORATION MATERIAL			-	-	0.000	-	-	-	-	-	-	-	-	4.200	-	-	-	-	-	4.200
Total			-	-	68.365	-	-	13.669	-	-	21.613	-	-	25.909	-	-	-	-	-	25.909

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

**Footnotes:**

<sup>(1)</sup> FY16-18 funding has been realigned to Next Generation Surface Search Radar/NRE.

<sup>(2)</sup> The variance in Calibration Standards unit costs and quantity from PB17 for FY18 (in addition to the fluctuation in unit costs and quantities across the fiscal years) is attributable to the diversity and varying complexity of Calibration Standards to be procured from year to year to address the operational needs of calibration and maintenance requirements across shipboard/shore-based activities and programs.

<sup>(3)</sup> DBR ECP increases in FY17-22 were a reallocation from Production Support due to prioritization of the engineering and technical complexity of the ECPs needed to satisfy both CVN 78 and DDG 1000 combat system qualification requirements. Also, DBR ECP budget increases in each FY are justifiably proportional to the increase in complexity during system integration and the number of radar Software Trouble Report (STR) solutions that are required to ensure full combat system capability on both CVN 78 and DDG 1000. In addition, these increases are due to hardware and software modifications for CVN78/DDG1000 identified during initial Light-Off, Activation and Shipboard Operations.

<sup>(4)</sup> DC022 - Radar Restoration Materials - Funding in this line procures components to support radar restoration (AN/SPS-48 Arrays and miscellaneous Antenna Sub-Assemblies) and Engineering Change Proposals (ECPs) to address obsolescence and improve supportability.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy														Date: May 2017							
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10						P-1 Line Item Number / Title: 2980 / Items less than \$5 Million						Aggregated Items Title: DC001 - SPS-73 RADAR									
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)	
B Kits/Recurring																					
SPS-73 SYSTEMS -- Procurement		A		233,569.62	79	18.452	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SPS-73 SYSTEMS -- Installation		A		-	-	28.678	-	-	0.504	-	-	0.653	-	-	-	-	-	-	-	-	
NEXT GENERATION NON RECURRING ENGINEERING <sup>(5)</sup>		A		-	-	1.717	-	-	3.915	-	-	1.644	-	-	1.500	-	-	-	-	1.500	
Subtotal: B Kits/Recurring				-	-	48.847	-	-	4.419	-	-	2.297	-	-	1.500	-	-	-	-	-	1.500
Support Cost																					
MISCELLANEOUS ECP SUPPORT <sup>(6)</sup>		A		-	-	-	-	-	2.233	-	-	1.372	-	-	0.527	-	-	-	-	0.527	
Subtotal: Support Cost				-	-	0.000	-	-	2.233	-	-	1.372	-	-	0.527	-	-	-	-	-	0.527
Total				-	-	48.847	-	-	6.652	-	-	3.669	-	-	2.027	-	-	0.000	-	-	2.027
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																					
Remarks: Models of Systems Affected: AN/SPS-73																					
The AN/SPS-73(V) Radar provides navigation and general surface search radar functionality on all U.S. Navy ships. The AN/SPS-73(V)12 is the Program of Record (POR) Automatic Radar Plotting Aid (ARPA) Navigation Radar for the U.S. Navy. Funding will be utilized for engineering changes which will improve surface combatant's ability to engage fast attack craft/fast in shore attack craft (FAC/FIAC) tracking and periscope detection and discrimination, as well as addressing cybersecurity shortfalls and Commercial-Off-The-Shelf (COTS) obsolescence of the legacy AN/SPS-73 systems. The AN/SPS-73 Next Generation Surface Search Radar (NGSSR) will update the current AN/SPS-73(V)12 and may in the future obviate the need for the AN/SPS-67(V) and all Commercial Navigation Radars fielded in the fleet. Next Generation non-recurring engineering (NRE) has increased in FY17-FY21 due to the revised program direction to mitigate fast attack craft/fast in shore attack craft (FAC/FIAC), to address cybersecurity shortfalls and to capitalize on periscope detection and discrimination capabilities.																					
Footnotes: <sup>(5)</sup> Next Generation non-recurring engineering (NRE) has increased in FY17-FY19 due to the revised program direction to mitigate fast attack craft/fast in shore attack craft (FAC/FIAC), to address cyber security shortfalls and to capitalize on periscope detection and discrimination capabilities. <sup>(6)</sup> Miscellaneous ECP support is required to address hardware and software obsolescence/availability issues which requires research and investigation by the ISEA to locate, test, and provide suitable substitutes to maintain Fleet Navigation Readiness and Safety of Life at Sea (SOLAS). Obsolescence issues are expected to continue to grow throughout the out years, requiring increased funding until sufficient quantities of NGSSR are fielded, reducing the burden of the legacy systems.																					

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy															Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10								P-1 Line Item Number / Title: 2980 / Items less than \$5 Million							Aggregated Items Title: DC015 - TACTICAL ENVIRONMENTAL PROCESSOR (TEP)					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring -- DDG HARDWARE - FMP																				
DDG HARDWARE - FMP -- Procurement	A		356,666.67	3	1.070	375,000.00	1	0.375	381,500.00	2	0.763	390,000.00	2	0.780	-	-	-	390,000.00	2	0.780
DDG HARDWARE - FMP -- Installation	A		-	-	0.319	-	-	0.020	-	-	0.151	-	-	0.290	-	-	-	-	-	0.290
DDG COTS REFRESH <sup>(7)</sup>	A		-	-	-	-	-	0.085	-	-	0.122	-	-	-	-	-	-	-	-	-
TEP SHORE SITES HARDWARE -- Procurement	A		166,333.33	3	0.499	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TEP SHORE SITES HARDWARE -- Installation	A		-	-	0.145	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: B Kits/Recurring -- DDG HARDWARE - FMP			-	-	2.033	-	-	0.480	-	-	1.036	-	-	1.070	-	-	-	-	-	1.070
Support Cost																				
PRODUCTION SUPPORT <sup>(8)</sup>	A		-	-	3.380	-	-	0.515	-	-	0.257	-	-	0.414	-	-	-	-	-	0.414
Subtotal: Support Cost			-	-	3.380	-	-	0.515	-	-	0.257	-	-	0.414	-	-	-	-	-	0.414
Total			-	-	5.413	-	-	0.995	-	-	1.293	-	-	1.484	-	-	0.000	-	-	1.484
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
Remarks: Models of Systems Affected: TACTICAL ENVIRONMENTAL PROCESSOR (TEP)  Provides real-time valunumeric wind profiles, convective weather detection/display, and radar refractivity assessments from AN/SPY-1 radar returns. TEP will be an adjunct processor and display, tapping radar data from weather and refractivity data, with users able to access information through Secret Internet Protocol Router (SIPR). TEP installations began in FY13, are aligned with AEGIS Modernization in FY14 and will continue beyond the FYDP.  Footnotes: <sup>(7)</sup> COTS Refresh: Replacement of Commercial Off-The-Shelf (COTS) components such as processors, displays, computer operating systems, commercially available software; also addresses emerging cyber security requirements. <sup>(8)</sup> Production support includes engineering services, ILS documentation updates, ORDALT instructions, engineering change proposals and DMSMS analysis.																				

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 10		<b>P-1 Line Item Number / Title:</b> 2980 / Items less than \$5 Million			<b>Modification Number / Title:</b> 2 / DC009 - AN/SPS-48G RADAR OBSCOLESCENCE AND AVAILABILITY RECOVERY (ROAR)		
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>			
<b>Resource Summary</b>		<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
Procurement Quantity ( <i>Units in Each</i> )		-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )		253.577	26.994	13.544	39.017	0.000	39.017
Less PY Advance Procurement ( <i>\$ in Millions</i> )		-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )		253.577	26.994	13.544	39.017	0.000	39.017
Plus CY Advance Procurement ( <i>\$ in Millions</i> )		-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )		<b>253.577</b>	<b>26.994</b>	<b>13.544</b>	<b>39.017</b>	<b>0.000</b>	<b>39.017</b>
<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> )		-	-	-	-	-	-
<p><b>Description:</b></p> <p>The AN/SPS-48G 3-D Air Surveillance Radar is a follow-on to the existing AN/SPS-48E onboard Aircraft Carriers and large-deck Amphibious ships. AN/SPS-48G was initiated in response to Fleet complaints regarding AN/SPS-48E reliability and supportability. Upgrade of the AN/SPS-48E with the AN/SPS-48G remains a high Fleet priority as it will reduce Operation and Support (O&amp;S) costs and improve Operational Availability. Both factors are cited by the Fleet as unsatisfactory for the AN/SPS-48E. The goal is to replace the AN/SPS-48E as rapidly as possible so the Fleet can realize these cost savings. Current efforts include the manufacturing of the AN/SPS-48G upgrade kits with associated production support as well as modifications to the AN/SPS-48G brought about by initial Fleet introduction and Fleet operations. Production lead time is 24 months for the initial unit with subsequent units delivered at two month intervals after initial delivery. Equipment delivery for installation is required thirty days prior to FMP availability start in accordance with Navy Modernization Process Management. Engineering Change Order funding is included to address Fleet recommended modifications/ requirements and Information Assurance, Obsolescence, and Diminishing Manufacturing Sources (DMS) issues. FY13 and beyond Engineering Change Proposal funding is to initiate incorporation of High Diver Detection and Tracking functionality. This capability was designed and incorporated into the AN/SPS-48E after design of the AN/SPS-48G had been initiated. This change now needs to be translated into the different hardware and software architectures of the AN/SPS-48G. The variances in FY17 and FY18 ECP, ECO, Production Support, and Installation costs from PB17 are due to realignments that were caused by more accurately matching the budget to the actual installation schedule for LPDs 22 and 23, and by the need to fund completion of Information Assurance, High Diver, and AEM/S functionality requirements.</p> <p>Installation funding for advanced planning (AP) and planning yard design services allocation (DSA) is required up to one year prior to the year of installation. DSA funds are used for Ship Installation Drawings (SIDs), Alteration Installation Team (AIT) contracting fees, and shipchecks.</p>							

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 10		<b>P-1 Line Item Number / Title:</b> 2980 / Items less than \$5 Million			<b>Modification Number / Title:</b> 2 / DC009 - AN/SPS-48G RADAR OBSOLESCENCE AND AVAILABILITY RECOVERY (ROAR)	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Models of Systems Affected:</b> AN/SPS-48G		<b>Modification Type:</b> TBD			<b>Related RDT&amp;E PEs:</b>	
<b>Financial Plan</b>	<b>Prior Years</b> Qty (Each) / Total Cost (\$ M)	<b>FY 2016</b> Qty (Each) / Total Cost (\$ M)	<b>FY 2017</b> Qty (Each) / Total Cost (\$ M)	<b>FY 2018 Base</b> Qty (Each) / Total Cost (\$ M)	<b>FY 2018 OCO</b> Qty (Each) / Total Cost (\$ M)	<b>FY 2018 Total</b> Qty (Each) / Total Cost (\$ M)
<b>Procurement</b>						
<b>Modification Item 1 of 1:</b> DC009 - AN/SPS-48G RADAR OBSOLESCENCE AND AVAILABILITY RECOVERY (ROAR)						
B Kits						
Recurring						
1.1.1) AN/SPS-48G HARDWARE - FMP - NonOrganic (9)	18 / 113.392	3 / 17.845	- / -	4 / 25.372	- / -	4 / 25.372
1.1.2) EQUIPMENT NONRECURRING - Organic	- / 11.191	- / -	- / -	- / -	- / -	- / -
1.1.3) ENGINEERING CHANGE PROPOSALS - Organic (10)	- / 12.832	- / 12.960	- / 13.168	- / 12.837	- / -	- / 12.837
1.1.4) ENGINEERING CHANGE ORDERS - Organic	- / 52.101	- / 11.417	- / 11.845	- / 11.871	- / -	- / 11.871
1.1.5) AN/SPS-48G HARDWARE - NON-FMP - NonOrganic	2 / 12.973	- / -	- / -	- / -	- / -	- / -
<b>Subtotal: Recurring</b>	- / 202.489	- / 22.222	- / 5.013	- / 30.080	- / -	- / 30.080
<b>Subtotal: DC009 - AN/SPS-48G RADAR OBSOLESCENCE AND AVAILABILITY RECOVERY (ROAR)</b>	20 / 202.489	3 / 22.222	- / 5.013	4 / 30.080	- / -	4 / 30.080
<b>Subtotal: Procurement, All Modification Items</b>	- / 202.489	- / 22.222	- / 5.013	- / 30.080	- / -	- / 30.080
<b>Support (All Modification Items)</b>						
2.1) PRODUCTION SUPPORT (11)	- / 20.422	- / 1.651	- / 1.278	- / 1.037	- / -	- / 1.037
<b>Subtotal: Support</b>	- / 20.422	- / 1.651	- / 1.278	- / 1.037	- / -	- / 1.037
<b>Installation</b>						
<b>Modification Item 1 of 1:</b> DC009 - AN/SPS-48G RADAR OBSOLESCENCE AND AVAILABILITY RECOVERY (ROAR)	- / 30.666	- / 3.121	- / 7.253	- / 7.900	- / 0.000	- / 7.900
<b>Subtotal: Installation</b>	- / 30.666	- / 3.121	- / 7.253	- / 7.900	- / -	- / 7.900
<b>Total</b>						
<b>Total Cost (Procurement + Support + Installation)</b>	<b>253.577</b>	<b>26.994</b>	<b>13.544</b>	<b>39.017</b>	<b>0.000</b>	<b>39.017</b>

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 10	<b>P-1 Line Item Number / Title:</b> 2980 / Items less than \$5 Million	<b>Modification Number / Title:</b> 2 / DC009 - AN/SPS-48G RADAR OBSOLESCENCE AND AVAILABILITY RECOVERY (ROAR)

<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :	<b>MDAP/MAIS Code:</b>
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**Modification Item 1 of 1:** DC009 - AN/SPS-48G RADAR OBSOLESCENCE AND AVAILABILITY RECOVERY (ROAR)

**Manufacturer Information**

Manufacturer Name: Exelis		Manufacturer Location: VAN NUYS, CA	
Administrative Leadtime (in Months): 0		Production Leadtime (in Months): 24	
<b>Dates</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>
Contract Dates	Jun 2016		Mar 2018
Delivery Dates	Nov 2018		Mar 2020

**Installation Information**

**Method of Implementation:** [none specified]:: Installation Name: AN/SPS-48G HARDWARE - FMP

Installation Cost	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total 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 / 26.300	0 / 3.121	3 / 7.253	3 / 5.350	0 / 0.000	3 / 5.350
FY 2016	- / -	- / -	- / -	0 / 2.550	0 / 0.000	0 / 2.550
FY 2017	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -
Total	11 / 26.300	0 / 3.121	3 / 7.253	3 / 7.900	0 / 0.000	3 / 7.900

**Installation Schedule**

	PYS	FY 2016				FY 2017				FY 2018			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
In	11	-	-	-	-	-	-	-	3	-	-	2	1
Out	7	1	-	-	-	-	-	2	1	-	-	-	1

**Method of Implementation:** AIT:: Installation Name: AN/SPS-48G HARDWARE - NON-FMP

Installation Cost	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	2 / 4.366	- / -	- / -	- / -	- / -	- / -
FY 2016	- / -	- / -	- / -	- / -	- / -	- / -
FY 2017	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -
Total	2 / 4.366	- / -	- / -	- / -	- / -	- / -



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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 10	<b>P-1 Line Item Number / Title:</b> 2980 / Items less than \$5 Million	<b>Modification Number / Title:</b> 2 / DC009 - AN/SPS-48G RADAR OBSOLESCENCE AND AVAILABILITY RECOVERY (ROAR)

<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :	<b>MDAP/MAIS Code:</b>
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**Modification Item 1 of 1:** DC009 - AN/SPS-48G RADAR OBSOLESCENCE AND AVAILABILITY RECOVERY (ROAR)

**Installation Information**

**Method of Implementation:** AIT:: Installation Name: AN/SPS-48G HARDWARE - NON-FMP

**Installation Schedule**

	PYS	FY 2016				FY 2017				FY 2018			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
In	2	-	-	-	-	-	-	-	-	-	-	-	-
Out	2	-	-	-	-	-	-	-	-	-	-	-	-

**Footnotes:**

<sup>(9)</sup> Due to contractor production line throughput limitations, FY15 upgrade kit three will deliver in Sep 2018 and FY16 kit one will deliver in Nov 2018. Installation funding for advanced planning (AP) and planning yard Design Services Allocation (DSA) is required up to one year prior to the year of installation. DSA funds are used for Ship Installation Drawings (SIDs), Alteration Installation Team (AIT) contracting fees, and shipchecks.

<sup>(10)</sup> Engineering Change Proposal funding is primarily to incorporate High Diver Detection and Tracking functionality. This capability was designed and incorporated into the AN/SPS-48E after design of the AN/SPS-48G had been initiated. This change now needs to be translated into the different hardware and software architectures of the AN/SPS-48G.

<sup>(11)</sup> Production Support provides for Government oversight of production, Government and Original Equipment Manufacturer (OEM) support of production related software and hardware problems, and engineering as well as Integrated Logistics Support (ILS) efforts in support of production and fielding.

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 10		<b>P-1 Line Item Number / Title:</b> 2980 / Items less than \$5 Million			<b>Modification Number / Title:</b> 5 / DC018 - AN/SPY-1 RM&A IMPROVEMENTS	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	18.005	17.866	18.602	36.855	0.000	36.855
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	18.005	17.866	18.602	36.855	0.000	36.855
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
<b>Total Obligation Authority</b> <i>(\$ in Millions)</i>	<b>18.005</b>	<b>17.866</b>	<b>18.602</b>	<b>36.855</b>	<b>0.000</b>	<b>36.855</b>
<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>	-	-	-	-	-	-
<p><b>Description:</b>  DC018 AN/SPY-1 RM&amp;A IMPROVEMENTS - These Reliability, Maintainability, and Availability (RM&amp;A) improvements are intended to reduce cascading failures, mitigate obsolescence issues, and improve reliability in support of Anti-Air Warfare (AAW) and Ballistic Missile Defense (BMD) missions while still providing AN/SPY-1 Radar Total Ownership Cost (TOC) reductions. The improvements include, but are not limited to, installation for Sidewall Capacitor Circuit Protection and 10kW Traveling Wave Tube (TWT) Monitoring Circuits Ordnance Alterations (ORDALTS) for AN/SPY-1; B (V), D, D (V), OUCG and DDGs. Solid State Switch Assemblies (SSSA) will replace legacy switch tube modulator deck via an ORDALT. Multi-Mission Signal Processor (MMSP) is the signal processor for the AN/SPY-1 radar. MMSP Refresh (MMSP-R) cabinets will be procured to provide production representative configurations for land-based testing and training to support AEGIS ships at AEGIS Training and Readiness Center (ATRC) and Surface Combat System Center (SCSC) Wallops Island. Increased funding in FY18 includes the procurement of two MMSP-R cabinets for Virginia sites, procurement of assets and shock qualification testing of SSSA and SPY-1D(V) Final Power Amplifier (FPA) cabinet required by MILSPEC 901-D.</p> <p>Installation costs for Sidewall and 10KW TWT DDG Hardware increased due to additional shipyard costs being incurred in FY16 which was used as a basis of estimate for FY17-18 shipyard cost estimates.</p>						

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy						<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 10			<b>P-1 Line Item Number / Title:</b> 2980 / Items less than \$5 Million			<b>Modification Number / Title:</b> 5 / DC018 - AN/SPY-1 RM&A IMPROVEMENTS	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :					<b>MDAP/MAIS Code:</b>		
<b>Models of Systems Affected:</b> AN/SPY-1 RM&A IMPROVEMENTS			<b>Modification Type:</b> TBD			<b>Related RDT&amp;E PEs:</b> 0604501N	
<b>Financial Plan</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
<b>Procurement</b>							
<b>Modification Item 1 of 1:</b> DC018 - AN/SPY-1 RM&A IMPROVEMENTS							
B Kits							
Recurring							
1.1.1) SIDEWALL AND 10KW TWT DDG HARDWARE - NonOrganic <sup>(12)</sup>	43 / 4.819	2 / 0.412	9 / 1.505	4 / 1.100	- / -	4 / 1.100	
1.1.2) PACK UP KITS - Organic	3 / 4.125	- / -	- / -	- / -	- / -	- / -	
1.1.3) SIDEWALL AND 10KW TWT CG HARDWARE - NonOrganic <sup>(13)</sup>	10 / 2.621	- / -	- / -	6 / 1.536	- / -	6 / 1.536	
1.1.4) SIDEWALL AND 10KW TWT SHORE SITE HARDWARE - NonOrganic	8 / 1.172	- / -	- / -	- / -	- / -	- / -	
1.1.5) SOLID STATE SWITCH ASSEMBLY DDG HARDWARE - NonOrganic <sup>(14)</sup>	- / -	2 / 10.312	1 / 6.259	1 / 4.702	- / -	1 / 4.702	
1.1.6) SOLID STATE SWITCH ASSEMBLY SHORE SITE HARDWARE - NonOrganic <sup>(15)</sup>	- / -	1 / 4.570	1 / 4.398	- / -	- / -	- / -	
1.1.7) SOLID STATE SWITCH ASSEMBLY SPARES - Organic <sup>(16)</sup>	- / -	- / -	9 / 5.198	- / -	- / -	- / -	
1.1.8) SOLID STATE SWITCH ASSEMBLY FINAL POWER AMPLIFIER ENV/QUAL - Organic <sup>(17)</sup>	- / -	- / -	- / -	1 / 11.901	- / -	1 / 11.901	
1.1.9) MMSP-R SHORE SITE HARDWARE - NonOrganic <sup>(18)</sup>	- / -	- / -	- / -	2 / 14.369	- / -	2 / 14.369	
<b>Subtotal: Recurring</b>	- / 12.737	- / 15.294	- / 17.360	- / 33.608	- / -	- / 33.608	
<b>Subtotal: DC018 - AN/SPY-1 RM&amp;A IMPROVEMENTS</b>	64 / 12.737	5 / 15.294	20 / 17.360	14 / 33.608	- / -	14 / 33.608	
<b>Subtotal: Procurement, All Modification Items</b>	- / 12.737	- / 15.294	- / 17.360	- / 33.608	- / -	- / 33.608	
<b>Support (All Modification Items)</b>							
2.1) PRODUCTION SUPPORT <sup>(19)</sup>	- / 3.491	- / 0.520	- / 1.242	- / 0.234	- / -	- / 0.234	
<b>Subtotal: Support</b>	- / 3.491	- / 0.520	- / 1.242	- / 0.234	- / -	- / 0.234	
<b>Installation</b>							
<b>Modification Item 1 of 1:</b> DC018 - AN/SPY-1 RM&A IMPROVEMENTS	- / 1.777	- / 2.052	- / 0.000	- / 3.013	- / 0.000	- / 3.013	
<b>Subtotal: Installation</b>	- / 1.777	- / 2.052	- / -	- / 3.013	- / -	- / 3.013	

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy						<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 10			<b>P-1 Line Item Number / Title:</b> 2980 / Items less than \$5 Million			<b>Modification Number / Title:</b> 5 / DC018 - AN/SPY-1 RM&A IMPROVEMENTS	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :					<b>MDAP/MAIS Code:</b>		
<b>Models of Systems Affected:</b> AN/SPY-1 RM&A IMPROVEMENTS			<b>Modification Type:</b> TBD			<b>Related RDT&amp;E PEs:</b> 0604501N	
<b>Financial Plan</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
<b>Total</b>							
<b>Total Cost (Procurement + Support + Installation)</b>	18.005	17.866	18.602	36.855	0.000	36.855	

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy				<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 10		<b>P-1 Line Item Number / Title:</b> 2980 / Items less than \$5 Million		<b>Modification Number / Title:</b> 5 / DC018 - AN/SPY-1 RM&A IMPROVEMENTS		
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :			<b>MDAP/MAIS Code:</b>			
<b>Modification Item 1 of 1:</b> DC018 - AN/SPY-1 RM&A IMPROVEMENTS						
<b>Manufacturer Information</b>						
Manufacturer Name: SOLID STATE SWITCH ASSEMBLY (SSSA) - RAYTHEON			Manufacturer Location: Andover, MA			
Administrative Leadtime (in Months): 0			Production Leadtime (in Months): 18			
<b>Dates</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>			
Contract Dates	May 2017	May 2017	Mar 2018			
Delivery Dates	May 2018	Feb 2019	Sep 2019			
Manufacturer Name: SIDEWALL AND 10KW TWT ORDALTs - RAYTHEON			Manufacturer Location: Chesapeake, VA			
Administrative Leadtime (in Months): 0			Production Leadtime (in Months): 12			
<b>Dates</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>			
Contract Dates	Nov 2016	May 2017	Mar 2018			
Delivery Dates	Jul 2018	Jan 2019	Mar 2019			
Manufacturer Name: MMSP-R DIGITAL CABINETS - LOCKHEED MARTIN			Manufacturer Location: Moorestown, NJ			
Administrative Leadtime (in Months): 0			Production Leadtime (in Months): 12			
<b>Dates</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>			
Contract Dates			Feb 2018			
Delivery Dates			Feb 2019			
<b>Installation Information</b>						
<b>Method of Implementation:</b> AIT:: Installation Name: SIDEWALL AND 10KW TWT DDG HARDWARE						
<b>Installation Cost</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	21 / 0.883	22 / 1.843	- / -	- / -	- / -	- / -
FY 2016	- / -	- / -	- / -	2 / 0.383	0 / 0.000	2 / 0.383
FY 2017	- / -	- / -	- / -	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -
Total	21 / 0.883	22 / 1.843	- / -	2 / 0.383	0 / 0.000	2 / 0.383

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy										<b>Date:</b> May 2017			
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 10					<b>P-1 Line Item Number / Title:</b> 2980 / Items less than \$5 Million					<b>Modification Number / Title:</b> 5 / DC018 - AN/SPY-1 RM&A IMPROVEMENTS			
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :										<b>MDAP/MAIS Code:</b>			
<b>Modification Item 1 of 1:</b> DC018 - AN/SPY-1 RM&A IMPROVEMENTS													
<b>Installation Information</b>													
<b>Method of Implementation:</b> AIT:: Installation Name: SIDEWALL AND 10KW TWT DDG HARDWARE													
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	21	-	7	8	7	-	-	-	-	-	-	-	2
Out	14	7	7	8	7	-	-	-	-	-	-	-	2
<b>Method of Implementation:</b> AIT:: Installation Name: SIDEWALL AND 10KW TWT CG HARDWARE													
<b>Installation Cost</b>		<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>	
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)	
Prior Years		8 / 0.820		2 / 0.209		- / -		- / -		- / -		- / -	
FY 2016		- / -		- / -		- / -		- / -		- / -		- / -	
FY 2017		- / -		- / -		- / -		- / -		- / -		- / -	
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -	
Total		8 / 0.820		2 / 0.209		- / -		- / -		- / -		- / -	
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	8	-	-	-	2	-	-	-	-	-	-	-	-
Out	4	-	4	-	2	-	-	-	-	-	-	-	-
<b>Method of Implementation:</b> AIT:: Installation Name: SIDEWALL AND 10KW TWT SHORE SITE HARDWARE													
<b>Installation Cost</b>		<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>	
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)	
Prior Years		8 / 0.074		- / -		- / -		- / -		- / -		- / -	
FY 2016		- / -		- / -		- / -		- / -		- / -		- / -	
FY 2017		- / -		- / -		- / -		- / -		- / -		- / -	
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -	
Total		8 / 0.074		- / -		- / -		- / -		- / -		- / -	

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy										<b>Date:</b> May 2017			
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 10					<b>P-1 Line Item Number / Title:</b> 2980 / Items less than \$5 Million					<b>Modification Number / Title:</b> 5 / DC018 - AN/SPY-1 RM&A IMPROVEMENTS			
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :								<b>MDAP/MAIS Code:</b>					
<b>Modification Item 1 of 1:</b> DC018 - AN/SPY-1 RM&A IMPROVEMENTS													
<b>Installation Information</b>													
<b>Method of Implementation:</b> AIT:: Installation Name: SIDEWALL AND 10KW TWT SHORE SITE HARDWARE													
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	8	-	-	-	-	-	-	-	-	-	-	-	-
Out	8	-	-	-	-	-	-	-	-	-	-	-	-
<b>Method of Implementation:</b> [none specified]:: Installation Name: SOLID STATE SWITCH ASSEMBLY DDG HARDWARE													
<b>Installation Cost</b>		<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>	
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total 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 2016		- / -		- / -		- / -		2 / 1.586		0 / 0.000		2 / 1.586	
FY 2017		- / -		- / -		- / -		- / -		- / -		- / -	
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -	
Total		- / -		- / -		- / -		2 / 1.586		0 / 0.000		2 / 1.586	
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	-	-	-	-	-	-	-	-	-	-	-	-	2
Out	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Method of Implementation:</b> [none specified]:: Installation Name: SOLID STATE SWITCH ASSEMBLY SHORE SITE HARDWARE													
<b>Installation Cost</b>		<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>	
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total 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 2016		- / -		- / -		- / -		1 / 1.044		0 / 0.000		1 / 1.044	
FY 2017		- / -		- / -		- / -		- / -		- / -		- / -	
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -	
Total		- / -		- / -		- / -		1 / 1.044		0 / 0.000		1 / 1.044	

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy										<b>Date:</b> May 2017			
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 10					<b>P-1 Line Item Number / Title:</b> 2980 / Items less than \$5 Million					<b>Modification Number / Title:</b> 5 / DC018 - AN/SPY-1 RM&A IMPROVEMENTS			
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :										<b>MDAP/MAIS Code:</b>			
<b>Modification Item 1 of 1:</b> DC018 - AN/SPY-1 RM&A IMPROVEMENTS													
<b>Installation Information</b>													
<b>Method of Implementation:</b> [none specified]:: Installation Name: SOLID STATE SWITCH ASSEMBLY SHORE SITE HARDWARE													
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	-	-	-	-	-	-	-	-	-	-	-	1	-
Out	-	-	-	-	-	-	-	-	-	-	-	-	1
<b>Method of Implementation:</b> AIT:: Installation Name: MMSP-R SHORE SITE HARDWARE													
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	-	-	-	-	-	-	-	-	-	-	-	-	-
Out	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Footnotes:</b>													
(12) Sidewall and 10KW ORDALT kit costs vary depending on ship and radar configurations and the mix of 10KW TWT monitoring circuit and Sidewall Capacitor kits. Additionally, procurement costs increased due to Original Equipment Manufacturer (OEM) component price increase. ORDALT kit quantities decreased in FY18 from 7 to 4 due to higher kit costs. Installation costs for Sidewall and 10KW TWT DDG Hardware increased due to additional shipyard costs being incurred in FY16 which was used as a basis of estimate for FY17-18 shipyard cost estimates. Production lead time for SWCs and 10KW are different. Production Lead Time for TWTs is 12 months. Production Lead Time for SWCs in FY16 and FY17 is 20 months due to major vendor manufacturing requalification. In FY18 and beyond, the Production Lead Time for SWCs will be 12 months.													
(13) Additional procurements of SWC and 10KW TWT ORDALTs have been added to support cruiser modernization in FY18 to FY22.													
(14) FY16 and FY17 SSSA DDG Hardware funding includes funding for SSSA transition to production (FY16 - \$1.435M, FY17 - \$1.885M). Costs increased from PB17 to DON18 based on OEM contract proposal cost. SSSA total DDG quantity increased due to the addition of DDG 119, 120, 121, 122 and 123 in the fielding plan.													
(15) FY15 \$6.6M realigned from DC018 (1.1.6, 1.1.7 and 2.1) to DC020 for DBR efforts. Production Lead Time for the initial FY16 SSSA procurement is 12 months due to early procurement of long lead parts.													
(16) Solid State Switch Assembly Spares include initial spares and INCOs which are required for installations.													
(17) FY18 increase is due to procurement of Solid State Switch Assembly Final Power Amplifier Environmental/Qualification for shock qualification testing as required by MILSPEC 901-D. Funding is required for the procurement of equipment (i.e., Final Power Amplifier (FPA) cabinet, High Voltage Power Supply (HVPS and cabling and ancillary equipment), test plans, engineering, and test facility to support environmental shock qualification testing of the SPY-1 transmitter Final Power Amplifier with installed components. Budget basis included cost estimates of hardware and test equipment required to conduct the shock testing.													
(18) Funding is required to procure MMSP-R equipment for two Virginia shore sites. MMSP-R contains distinct equipment sets and is not comparable to costs of other items of hardware or components.													



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Exhibit P-3a, Individual Modification: FY 2018 Navy		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 10	P-1 Line Item Number / Title: 2980 / Items less than \$5 Million	Modification Number / Title: 5 / DC018 - AN/SPY-1 RM&A IMPROVEMENTS
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:
<div>(19) Production support includes installation engineering services, Integrated Logistics Support (ILS) documentation updates, ORDALT instructions, engineering change proposals and Diminishing Manufacturing Sources and Material Shortages (DMSMS) analysis.</div>		

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy	<b>Date:</b> May 2017
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<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 11: Shipboard Communications	<b>P-1 Line Item Number / Title:</b> 3010 / Shipboard Tactical Comms
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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
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**Line Item MDAP/MAIS Code:** N/A

Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ <i>in Millions</i> )	14.410	8.277	17.366	23.695	0.000	23.695	39.654	53.772	60.540	66.651	Continuing	Continuing
Less PY Advance Procurement (\$ <i>in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ <i>in Millions</i> )	14.410	8.277	17.366	23.695	0.000	23.695	39.654	53.772	60.540	66.651	Continuing	Continuing
Plus CY Advance Procurement (\$ <i>in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ <i>in Millions</i> )	14.410	8.277	17.366	23.695	0.000	23.695	39.654	53.772	60.540	66.651	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> )	-	0.113	0.004	0.567	-	0.567	0.448	0.960	0.311	0.137	Continuing	Continuing
Flyaway Unit Cost (\$ <i>in Thousands</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ <i>in Thousands</i> )	-	-	-	-	-	-	-	-	-	-	-	-

**Description:**

Funding provides for the procurement and installation of Integrated Waveform (IW) and Mobile User Objective System (MUOS) capable Digital Modular Radio (DMR) systems and IW and MUOS capable upgrade kits. DMR with IW and MUOS capable hardware is a four or eight-channel software defined radio that provides satellite communications, Line of Sight (LOS) and High Frequency (HF), Very High Frequency (VHF) and Ultra High Frequency (UHF) communication capability to surface, submarine, and shore facilities. This variant of the DMR, including upgrade kits, provides hardware that is IW/MUOS compatible, and will allow for IW and MUOS software update when the development and integration is complete.

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy								<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 11: Shipboard Communications						<b>P-1 Line Item Number / Title:</b> 3010 / Shipboard Tactical Comms				
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A				<b>Program Elements for Code B Items:</b> N/A			<b>Other Related Program Elements:</b> N/A			
<b>Line Item MDAP/MAIS Code:</b> N/A										
<b>Exhibits Schedule</b>					<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
<b>Exhibit Type</b>	<b>Title*</b>	<b>Subexhibits</b>	<b>ID CD</b>	<b>MDAP/MAIS Code</b>	<b>Quantity / Total Cost (Each) / (\$ M)</b>	<b>Quantity / Total Cost (Each) / (\$ M)</b>	<b>Quantity / Total Cost (Each) / (\$ M)</b>	<b>Quantity / Total Cost (Each) / (\$ M)</b>	<b>Quantity / Total Cost (Each) / (\$ M)</b>	<b>Quantity / Total Cost (Each) / (\$ M)</b>
P-40a	(DN 110) DMR IW and MUOS Capable Systems				- / 14.410	- / 6.596	- / 13.151	- / 9.456	- / 0.000	- / 9.456
P-3a	2 / (DN 111) DMR IW and MUOS Upgrade Kits (TBD)				- / 0.000	- / 1.681	- / 4.215	- / 14.239	- / 0.000	- / 14.239
<b>P-40</b>	<b>Total Gross/Weapon System Cost</b>				<b>- / 14.410</b>	<b>- / 8.277</b>	<b>- / 17.366</b>	<b>- / 23.695</b>	<b>- / 0.000</b>	<b>- / 23.695</b>
<p>*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.</p> <p>Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.</p>										
<p><b>Justification:</b>  FY18 funding of \$3.77M was realigned from OPN 3010 to RD TEN 0604280N in order to complete the testing and delivery of DMR IW and MUOS SATCOM capability, the Navy's technical solution for the IW/ MUOS requirement.</p> <p>FY18 funding provides for the procurement of 29 Integrated Waveform (IW) and Mobile User Objective System (MUOS) capable upgrade kits and 7 IW and MUOS capable DMR systems.</p>										

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<b>Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy</b>																<b>Date:</b> May 2017			
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 11								<b>P-1 Line Item Number / Title:</b> 3010 / Shipboard Tactical Comms								<b>Aggregated Items Title:</b> (DN 110) DMR IW and MUOS Capable Systems			

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring -- (DN 110) DMR IW and MUOS Systems																				
DMR IW and MUOS System Procurement - Shore -- Procurement	A		1,102.500	6	6.615	-	-	-	-	-	-	760.000	4	3.040	-	-	-	760.000	4	3.040
DMR IW and MUOS System Procurement - Shore -- Installation	A		-	-	-	-	-	-	-	-	3.771	-	-	-	-	-	-	-	-	-
DMR IW and MUOS System Procurement - Afloat -- Procurement	A		926.000	6	5.556	979.000	6	5.874	949.140	7	6.644	1,113.000	3	3.339	-	-	-	1,113.000	3	3.339
DMR IW and MUOS System Procurement - Afloat -- Installation	A		-	-	-	-	-	-	-	-	2.228	-	-	2.295	-	-	-	-	-	2.295
Subtotal: B Kits/Recurring -- (DN 110) DMR IW and MUOS Systems			-	-	12.171	-	-	5.874	-	-	12.643	-	-	8.674	-	-	-	-	-	8.674
Support Cost																				
DMR IW and MUOS System Production Support	A		-	-	2.173	-	-	0.415	-	-	0.382	-	-	0.348	-	-	-	-	-	0.348
DMR IW and MUOS System DSA <sup>(1)</sup>	A		-	-	0.066	-	-	0.307	-	-	0.126	-	-	0.434	-	-	-	-	-	0.434
Subtotal: Support Cost			-	-	2.239	-	-	0.722	-	-	0.508	-	-	0.782	-	-	-	-	-	0.782
Total			-	-	14.410	-	-	6.596	-	-	13.151	-	-	9.456	-	-	0.000	-	-	9.456

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

**Remarks:**

Models of Systems Affected: AN/USC-61(C)

Integrated Waveform (IW) and Mobile User Objective System (MUOS) capable Digital Modular Radio (DMR) Systems. Quantities between radios and kits may change from year to year as a result of ship availabilities and fleet priority. FY18 Shore procurements reflect procurement of four (Qty 4) DMRs to support NCTAMS LANT relocation project. Installation costs will be supported by overall project dollars. FY 18 is procuring three (3 QTY) Afloat units of DMR IW & MUOS System. There are 4 different configurations of DMR IW & MUOS System (2 surface, 1 subsurface & 1 shore) and 5 different configurations of DMR IW & MUOS Upgrade Kit configurations (3 surface & 2 subsurface). Annual Unit Cost variances are driven by system configurations.

For the DMR IW & MUOS System, the configuration ranges from 1 - 3 DMR systems and requires a unique set of ancillary equipment dependent upon ship class (racks, power amplifiers & antenna upgrades). For example, a CVN requires 3 DMR systems and would need 4 racks to complete installation. When comparing to a small ship such as LCS, which needs only 1 DMR system and 2 racks to complete installation. A single DMR system will range in cost depending on the configuration and Economic Order Quantity Pricing relevant at time of contract award.

All ancillary equipment is procured via separate contracts that will be subject to re-compete over the next two years. Components are provided to SSC Pacific for integration, assembly and test which comprises the 24 month lead time.

In FY18 DMR program plans to procure 7 DMR systems (3 subsurface and 4 shore).

Twenty four (24) month Production Lead Time (PLT) for DMR System delivery due to varying PLT's from multiple sub-component vendors that are then integrated into the final product. Seven (7) month Administrative Lead Time (ALT) for DMR System procurements allows for the identification and receipt of other customer funds in order to take advantage of favorable quantity pricing when available.

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<b>Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy</b>		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 11	<b>P-1 Line Item Number / Title:</b> 3010 / Shipboard Tactical Comms	<b>Aggregated Items Title:</b> (DN 110) DMR IW and MUOS Capable Systems

**Footnotes:**

(1) FY17-FY22 DSA cost variance due to different DSA requirements for multiple shore, surface and sub-surface configurations.

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 11			<b>P-1 Line Item Number / Title:</b> 3010 / Shipboard Tactical Comms		<b>Modification Number / Title:</b> 2 / (DN 111) DMR IW and MUOS Upgrade Kits	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	0.000	1.681	4.215	14.239	0.000	14.239
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	0.000	1.681	4.215	14.239	0.000	14.239
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
<b>Total Obligation Authority</b> <i>(\$ in Millions)</i>	<b>0.000</b>	<b>1.681</b>	<b>4.215</b>	<b>14.239</b>	<b>0.000</b>	<b>14.239</b>
<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>	-	-	-	-	-	-
<p><b>Description:</b>  Integrated Waveform (IW) and Mobile User Objective System (MUOS) capable Digital Modular Radio (DMR) Upgrade Kits. Quantities between radios and kits may change from year to year as a result of ship availabilities and fleet priority.</p> <p>[DMR IW and MUOS Upgrade Kits Procurement] There are 4 different DMR IW &amp; MUOS System configurations (2 surface, 1 subsurface &amp; 1 shore) and 5 different DMR IW &amp; MUOS Upgrade Kit configurations (3 surface &amp; 2 subsurface). Annual Unit Cost variances are driven by system configurations.</p> <p>For the DMR upgrade kit configuration ranges from 1 - 3 DMR systems and requires a unique set of ancillary equipment dependent upon ship class (racks, power amplifiers &amp; antenna upgrades). A single DMR upgrade kit will range vary in cost depending on the configuration and Economic Order Quantity Pricing relevant at time of contract award.</p> <p>All ancillary equipment is procured via separate contracts that will be subject to re-compete over the next two years. Components are provided to SSC Pacific for integration, assembly and test which comprises the 24 month lead time.</p> <p>In FY18 DMR program plans to procure 29 upgrade kits (11 subsurface and 18 surface).</p> <p>Twenty four (24) month Production Lead Time (PLT) for DMR System delivery due to varying PLT's from multiple sub-component vendors that are then integrated into the final product. Seven (7) month Administrative Lead Time (ALT) for DMR System procurements allows for the identification and receipt of other customer funds in order to take advantage of favorable quantity pricing when available.</p>						

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 11			<b>P-1 Line Item Number / Title:</b> 3010 / Shipboard Tactical Comms		<b>Modification Number / Title:</b> 2 / (DN 111) DMR IW and MUOS Upgrade Kits	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Models of Systems Affected:</b> AN/USC-61(C)		<b>Modification Type:</b> TBD			<b>Related RDT&amp;E PEs:</b> 0604280N	
<b>Financial Plan</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
<b>Procurement</b>						
<b>Modification Item 1 of 1:</b> (DN 111) DMR IW and MUOS Upgrade Kits						
B Kits						
Recurring						
1.1.1) DMR IW and MUOS Upgrade Kits Procurement - NonOrganic	- / -	11 / 1.597	8 / 3.029	29 / 11.484	- / -	29 / 11.484
<i>Subtotal: Recurring</i>	- / 0.000	- / 1.597	- / 3.029	- / 11.484	- / -	- / 11.484
<i>Subtotal: (DN 111) DMR IW and MUOS Upgrade Kits</i>	- / -	11 / 1.597	8 / 3.029	29 / 11.484	- / -	29 / 11.484
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.000	- / 1.597	- / 3.029	- / 11.484	- / -	- / 11.484
<b>Support (All Modification Items)</b>						
2.1) DMR IW and MUOS Upgrade Kits Production Support	- / -	- / 0.084	- / 0.171	- / 0.574	- / -	- / 0.574
2.2) DMR IW and MUOS Upgrade Kits DSA	- / -	- / -	- / 1.015	- / 0.883	- / -	- / 0.883
<i>Subtotal: Support</i>	- / 0.000	- / 0.084	- / 1.186	- / 1.457	- / -	- / 1.457
<b>Installation</b>						
<b>Modification Item 1 of 1:</b> (DN 111) DMR IW and MUOS Upgrade Kits	- / 0.000	- / 0.000	- / 0.000	- / 1.298	- / 0.000	- / 1.298
<i>Subtotal: Installation</i>	- / 0.000	- / -	- / -	- / 1.298	- / -	- / 1.298
<b>Total</b>						
<b>Total Cost (Procurement + Support + Installation)</b>	<b>0.000</b>	<b>1.681</b>	<b>4.215</b>	<b>14.239</b>	<b>0.000</b>	<b>14.239</b>



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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy										<b>Date:</b> May 2017			
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 11						<b>P-1 Line Item Number / Title:</b> 3010 / Shipboard Tactical Comms				<b>Modification Number / Title:</b> 2 / (DN 111) DMR IW and MUOS Upgrade Kits			
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :								<b>MDAP/MAIS Code:</b>					
<b>Modification Item 1 of 1:</b> (DN 111) DMR IW and MUOS Upgrade Kits													
<b>Manufacturer Information</b>													
Manufacturer Name: General Dynamics								Manufacturer Location: Scottsdale, Arizona					
Administrative Leadtime (in Months): 7								Production Leadtime (in Months): 24					
<b>Dates</b>		<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
Contract Dates		May 2016											
Delivery Dates		May 2018											
Manufacturer Name: TBD								Manufacturer Location: TBD					
Administrative Leadtime (in Months): 7								Production Leadtime (in Months): 24					
<b>Dates</b>		<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
Contract Dates						May 2017				May 2018			
Delivery Dates						May 2019				May 2020			
<b>Installation Information</b>													
<b>Method of Implementation:</b> Method:: Installation Name: DMR MUOS Upgrade Kits													
<b>Installation Cost</b>		<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>	
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total 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 2016		- / -		- / -		- / -		11 / 1.298		0 / 0.000		11 / 1.298	
FY 2017		- / -		- / -		- / -		- / -		- / -		- / -	
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -	
Total		- / -		- / -		- / -		11 / 1.298		0 / 0.000		11 / 1.298	
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	-	-	-	-	-	-	-	-	-	-	-	6	5
Out	-	-	-	-	-	-	-	-	-	-	-	-	6

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy										<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 11: Shipboard Communications							<b>P-1 Line Item Number / Title:</b> 3050 / Ship Communications Automation					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A			<b>Program Elements for Code B Items:</b> N/A				<b>Other Related Program Elements:</b> 0204163N					
<b>Line Item MDAP/MAIS Code:</b> N/A												
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>To Complete</b>	<b>Total</b>
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	426.611	121.817	114.879	103.990	0.000	103.990	85.361	80.841	82.026	83.663	Continuing	Continuing
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	426.611	121.817	114.879	103.990	0.000	103.990	85.361	80.841	82.026	83.663	Continuing	Continuing
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>426.611</b>	<b>121.817</b>	<b>114.879</b>	<b>103.990</b>	<b>0.000</b>	<b>103.990</b>	<b>85.361</b>	<b>80.841</b>	<b>82.026</b>	<b>83.663</b>	<b>Continuing</b>	<b>Continuing</b>
<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> )	-	0.176	0.023	0.665	-	0.665	1.369	1.167	0.779	0.631	Continuing	Continuing
Flyaway Unit Cost ( <i>\$ in Thousands</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ( <i>\$ in Thousands</i> )	-	-	-	-	-	-	-	-	-	-	-	-

**Description:**

Ship Communication Automation (52PQ): With the evolution of afloat networks programs migrating into the Consolidated Afloat Networks and Enterprise Services (CANES) program , the Ship Communications Automation budget line will continue to support Automated Digital Network System (ADNS), Legacy Network Operation Rolling Tide (ORT), Command and Control Official Information eXchange (C2OIX) (formerly Tactical Messaging), and Shore Tactical Assured Command and Control (STACC) (formerly Tactical Switching) programs.

Automated Digital Network System (ADNS): ADNS provides routing, switching, baseband, configuration and monitoring capabilities for interconnecting naval and coalition enclaves worldwide. ADNS utilizes Commercial Off-the-Shelf/ Government Off-the-Shelf (COTS/GOTS) equipment and network protocols as specified by the joint technical architecture. ADNS Increment (INC) I provides ship to shore IP connectivity, separation of enclaves, reuse of unused enclave bandwidth, and ship to tactical shore IP connectivity. ADNS INC II provides capabilities of network to Satellite Communications, Load Balancing, Radio Frequency (RF) restoral, and Quality of Service (QoS) to include application prioritization, Traffic Management, compression and enhancements designed to maximize use of "effective" available bandwidth for surface, shore, and airborne platforms. ADNS INC III combines all Navy Tactical Voice, secure Communications Interoperability Protocol Inter-Working Function, Video, and data requirements into a converged IP data stream. This includes Secure Communication Interoperability- Protocol Interworking Function (SCIP-IWF) for secure telephony over IP. In addition, the INC III architecture will incorporates an IPv4/IPv6 dual stack and a Cipher-Text security architecture to align to the Global Information Grid (GIG) in order to mesh Navy tactical surface, subsurface, and airborne platforms into a single IP environment with gateway functions to joint and coalition networks.

Legacy Network Cyber Resiliency/Operation Rolling Tide (ORT): ORT is a Navy-wide cyber remediation effort to secure government databases and improve the overall security protocols for Navy computer networks. Specifically, Legacy Network Cyber Resiliency/ORT will fund planned legacy network upgrades and mitigate security vulnerabilities on the highest End of Life platforms that are not targeted to be replaced by a Consolidated Afloat Networks & Enterprise Services (CANES) system. These upgrades will mitigate known targeted cyber vulnerabilities and include eradication of old Windows Operating Systems, critical End of Life (EOL) firewalls and routers and improved anti-malware solutions. Legacy Network Cyber Resiliency/ORT will improve the networks ability to detect known and unknown vulnerabilities and attacks by upgrading sensor and monitoring technologies and accelerate post-attack containment and recovery. Starting in FY16, Legacy Network Cyber Resiliency/ORT transferred to LI 3050 from CANES/ORT under LI 2915.

Command and Control Official Information eXchange (C2OIX) (formerly Tactical Messaging): C2OIX consolidates the Tactical Messaging and Defense Messaging System (DMS) programs and manages the Official Information Exchange (OIX) of organizational record message traffic, providing sustainment support and modernization for all afloat and ashore platforms. The modernization effort within C2OIX for afloat platforms replaces older Naval Modular Automated Communication System (NAVMACS) that lacked adherence to current cyber security requirements. It also automates and increases the speed and efficiency of handling organizational message traffic aboard ships and submarines, as well as replaces ten NAVMACS surface shipboard variants distributed across United States Navy (USN), Military Sealift

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 11: Shipboard Communications		P-1 Line Item Number / Title: 3050 / Ship Communications Automation
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0204163N
Line Item MDAP/MAIS Code: N/A		
<p>Command (MSC) and United States Coast Guard (USCG) ships with a single shipboard variant. The ashore component of C2OIX Project is the IP-based C2OIX Shore Gateway system. C2OIX will virtualize all Government Official Information Exchange System (GOES) software suites on shore gateway UNCLASSIFIED, SECRET and TOP SECRET message enclaves and provide an integrated Cross Domain Solution (CDS) at the two Naval Computer Telecommunication Area Master Stations (NCTAMS PACIFIC and NCTAMS ATLANTIC). C2OIX shore and afloat will satisfy Navy record messaging requirements and implement products that are developed with an open system architecture.</p> <p>Shore Tactical Assured Command and Control (STACC)(formerly Tactical Switching): STACC is the Navy's ashore Program of Record to consolidate and modernize the Tactical Ashore Network, including the Network Operations (NETOPS) /Enterprise Network Management System (ENMS), Internet Protocol (IP) Services, and Transport for Fleet Commanders and their forces, as well as coalition forces, into a single program across five enclaves: Unclassified, SECRET, Combined Enterprise Regional Information Exchange System-Maritime Navy Operations Center (CENTRIXS-M NOC), Sensitive Compartmented Information Networks Operations Center (SCI NOC), and Virtual Secure Enclave (VSE) Application Service Points (ASP).</p> <p>STACC ENMS provides the mechanism for dynamic managed real-time information assurance, security and vulnerability mitigation within the tactical ashore networks. Network Management provides users with access to geographical real-time network situational awareness of cyber threats; and provides the operators the ability to understand what is and is not normal on the network and provide a pre-emptive cyberspace capability to fight and win in a cyber-denied information environment. STACC IP service offerings provide Infrastructure as a Service (IaaS) and Platform as a Service (PaaS), within current and future iterations. STACC's ashore infrastructure is comprised of hardware, software, computing/processing, storage, and automated patching for Unclassified, Secret, CENTRIXS-M NOC (used by Coalition), SCI NOC and VSE for all network core services to a wide variety of Navy surface combatants. STACC transports Navy tactical data, providing seamless fail over and recovery capability.STACC requires that Automated Digital Network System (ADNS) and Computer Network and Defense System (CNDS) field in conjunction with STACC to provide a complete end-to-end capability from shore-to-ship and ship-to-shore.</p> <p>STACC's modernization plan is designed to eliminate cyber security vulnerabilities due to hardware and software obsolescence. STACC's systems are located in 5 regions, at 40 plus sites supporting the Fleet Commanders and their forces: 1)Eastern Pacific supporting Commander Pacific Fleet and Commander Third Fleet (Naval Computer &amp; Telecommunications Area Master Station Pacific (NCTAMS PAC) and Naval Computer &amp; Telecommunications Station San Diego (NCTS San Diego); 2) Western Pacific supporting Commander Seventh Fleet; 3) Indian Ocean supporting Commander Fifth (NCTS BAHRAIN); 4) European supporting Commander Sixth Fleet (NCTS NAPLES); and 5) Atlantic supporting US Fleet Forces Command, Commander Tenth Fleet and Commander Fourth Fleet (NCTAMS LANT); and Joint and Coalition Partners within each region. STACC systems will also be procured in support of NCTAMS LANT's new integrated Communications Center.</p>		

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy								<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 11: Shipboard Communications						<b>P-1 Line Item Number / Title:</b> 3050 / Ship Communications Automation				
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A			<b>Program Elements for Code B Items:</b> N/A			<b>Other Related Program Elements:</b> 0204163N				
<b>Line Item MDAP/MAIS Code:</b> N/A										
Exhibits Schedule					Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 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	PQ065 Command and Control Official Information eXchange (C2OIX)				- / 156.487	- / 4.197	- / 3.551	- / 4.048	- / 0.000	- / 4.048
P-5	1 / Ship Communications Automation	P-5a			- / 0.000	- / 5.500	- / 2.900	- / 2.900	- / 0.000	- / 2.900
P-3a	2 / PQ069 Automated Digital Network System (ADNS) - Afloat (TBD)				- / 0.000	- / 45.061	- / 40.878	- / 49.436	- / 0.000	- / 49.436
P-3a	3 / PQ070 Shore Tactical Assured Command and Control (STACC) (formerly Tactical Switching) (TBD)				- / 270.124	- / 20.885	- / 26.685	- / 37.512	- / 0.000	- / 37.512
P-3a	4 / PQ007 Legacy Network Cyber Resiliency/Operation Rolling Tide (ORT) (TBD)				- / 0.000	- / 46.174	- / 40.865	- / 10.094	- / 0.000	- / 10.094
<b>P-40</b>	<b>Total Gross/Weapon System Cost</b>				<b>- / 426.611</b>	<b>- / 121.817</b>	<b>- / 114.879</b>	<b>- / 103.990</b>	<b>- / 0.000</b>	<b>- / 103.990</b>
*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.										
<p><b>Justification:</b>            In FY 2018, ADNS funds are for the procurement of (22) INC III Afloat units, (42) INC III Afloat Technical Insertion units, (4) Ashore INC I/INC II units, and (6) Ashore INC III units, with integration, and associated costs for pre-installation design. In addition, the FY18 ADNS investment will fund installation of (18) INC III Afloat units, (42) INC III Afloat Technical Insertion units, (4) Ashore INC I/INC II units, and (6) Ashore INC III units. The increase in ADNS units is driven by the need to field additional ADNS capabilities required by other programs.</p> <p>In FY 2018, Legacy Network Cyber Resiliency/ORT funds are for the procurement of (11) Legacy Network Afloat ORT units and (2) Legacy Network Ashore ORT units. In addition, the FY18 Legacy Network ORT funds are for the installation of (12) Legacy Network Afloat ORT units and (2) Legacy Network Ashore ORT units.</p> <p>In FY 2018 C2OIX will fund NAVMACS (11) equipment procurement and (11) installations with integration and associated costs for pre-installation design to replace old legacy equipment onboard ships and submarines.</p> <p>FY18-FY22 Fluctuation in installation costs is due to cost decrease when C2OIX installations are combined with CANES installations.</p> <p>FY18 funding for STACC to engineer, integrate, procure, and install hardware and software to: connect to Global Information Grid (GIG) Point of Presence and provide internal timing and synchronization; transition legacy serial transport to an IP environment; expand IP services (Unclassified, SECRET, CENTRIXS-M NOC, SCI NOC and VSE ASP) to include application hosting services and expand storage capability; and enhance Network Operations monitoring and management and ORT cyber remediation solutions to detect, deter and mitigate network threats. STACC modernization is required at the five major regions, including the NCTAMS LANT new integrated communications facility. Increased funding is for for EHF transport from Navy Multiband Terminals to core tactical operational shore sites for ADNS Inc II and III ships/units; and equipment for the NCTAMS LANT new Communications Center.</p>										

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<b>Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy</b>																<b>Date:</b> May 2017			
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 11								<b>P-1 Line Item Number / Title:</b> 3050 / Ship Communications Automation								<b>Aggregated Items Title:</b> PQ065 Command and Control Official Information eXchange (C2OIX)			

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring																				
Equipment Prior Year Sunk -- Procurement	A		401.313	233	93.506	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Equipment Prior Year Sunk -- Installation	A		-	-	33.736	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tactical Messaging Tech Refresh -- Procurement	A		616.667	3	1.850	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tactical Messaging Tech Refresh -- Installation	A		-	-	0.600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C2OIX Equipment (Afloat) -- Procurement <sup>(1)</sup>	A		233.767	30	7.013	208.889	9	1.880	208.800	10	2.088	178.000	11	1.958	-	-	-	178.000	11	1.958
C2OIX Equipment (Afloat) -- Installation	A		-	-	2.845	-	-	1.434	-	-	1.113	-	-	1.500	-	-	-	-	-	1.500
Subtotal: B Kits/Recurring			-	-	139.550	-	-	3.314	-	-	3.201	-	-	3.458	-	-	-	-	-	3.458
B Kits/Non-Recurring																				
Non-Recurring Equipment	A		1,982.000	1	1.982	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: B Kits/Non-Recurring			-	-	1.982	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Support Cost																				
Production Support	A		-	-	8.430	-	-	0.118	-	-	0.065	-	-	0.045	-	-	-	-	-	0.045
DSA <sup>(2)</sup>	A		-	-	6.525	-	-	0.765	-	-	0.285	-	-	0.545	-	-	-	-	-	0.545
Subtotal: Support Cost			-	-	14.955	-	-	0.883	-	-	0.350	-	-	0.590	-	-	-	-	-	0.590
Total			-	-	156.487	-	-	4.197	-	-	3.551	-	-	4.048	-	-	0.000	-	-	4.048

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

## Remarks:

Models of Systems Affected: Tactical Messaging / C2OIX / NAVMACS

Command and Control Official Information eXchange (C2OIX) (formerly Tactical Messaging): C2OIX consolidates the Tactical Messaging and Defense Messaging System (DMS) programs and manages the Official Information Exchange (OIX) of organizational record message traffic, providing sustainment support and modernization for all afloat and ashore platforms. The modernization effort within C2OIX for afloat platforms replaces older Naval Modular Automated Communication System (NAVMACS) that lacked adherence to current cyber security requirements. It also automates and increases the speed and efficiency of handling organizational message traffic aboard ships and submarines, as well as replaces ten NAVMACS surface shipboard variants distributed across United States Navy (USN), Military Sealift Command (MSC) and United States Coast Guard (USCG) ships with a single shipboard variant. The ashore component of C2OIX Project is the IP-based C2OIX Shore Gateway system. C2OIX will virtualize all Government Official Information Exchange System (GOES) software suites on shore gateway UNCLASSIFIED, SECRET and TOP SECRET message enclaves and provide an integrated Cross Domain Solution (CDS) at the two Naval Computer Telecommunication Area Master Stations (NCTAMS PACIFIC and NCTAMS ATLANTIC). C2OIX shore and afloat will satisfy Navy record messaging requirements and implement products that are developed with an open system architecture.

## Footnotes:

<sup>(1)</sup> First quarter installations reflected in the Installation Schedule are funded in the prior year in order to be able to fund the installation contracts 90 days prior to the beginning of shipboard installation work. 90 days are needed to allow sufficient time for the contractor to plan the work schedule, order material, and perform necessary fabrication. This procedure allows installations to be scheduled in the first quarter thereby supporting Fleet availability.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11	P-1 Line Item Number / Title: 3050 / Ship Communications Automation	Aggregated Items Title: PQ065 Command and Control Official Information eXchange (C2OIX)

(2) FY19 & FY21 C2OIX budgets DSA when installations are not combined with CANES. CANES budgets for DSA costs for combined C2OIX / CANES installations. In FY19 and FY21 the majority of installations are C2OIX only installations resulting in an increased DSA budget requirement for those years.

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Exhibit P-5, Cost Analysis: FY 2018 Navy												Date: May 2017						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 11						P-1 Line Item Number / Title: 3050 / Ship Communications Automation						Item Number / Title [DODIC]: 1 / Ship Communications Automation						
ID Code (A=Service Ready, B=Not Service Ready) :									MDAP/MAIS Code:									
Resource Summary				Prior Years		FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total				
Procurement Quantity <i>(Units in Each)</i>				-		-		-		-		-		-				
Gross/Weapon System Cost <i>(\$ in Millions)</i>				0.000		5.500		2.900		2.900		0.000		2.900				
Less PY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Net Procurement (P-1) <i>(\$ in Millions)</i>				0.000		5.500		2.900		2.900		0.000		2.900				
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Total Obligation Authority <i>(\$ in Millions)</i>				0.000		5.500		2.900		2.900		0.000		2.900				
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																		
Initial Spares <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>				-		-		-		-		-		-				
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Hardware Cost																		
Recurring Cost																		
1.1.1) Automated Digital Network System (ADNS) - Ashore - INC I&II <sup>(†)</sup> (3)	-	-	0.000	100.000	4	0.400	100.000	4	0.400	100.000	4	0.400	-	-	0.000	100.000	4	0.400
1.1.2) Automated Digital Network System (ADNS) - Ashore - INC III <sup>(†)</sup> (4)	0.000	6	0.000	850.000	6	5.100	416.667	6	2.500	416.667	6	2.500	-	-	0.000	416.667	6	2.500
Subtotal: Recurring Cost	-	-	0.000	-	-	5.500	-	-	2.900	-	-	2.900	-	-	0.000	-	-	2.900
Subtotal: Hardware Cost	-	-	0.000	-	-	5.500	-	-	2.900	-	-	2.900	-	-	0.000	-	-	2.900
Gross/Weapon System Cost	-	-	0.000	-	-	5.500	-	-	2.900	-	-	2.900	-	-	0.000	-	-	2.900
Remarks: ADNS Ashore/ Network Operations Center (NOC)																		
(†) indicates the presence of a P-5a																		
Footnotes: (3) Tech refresh is required to field hardware to address End of Life issues at (4) ADNS Network Operation Centers (NOC): NCTS Bahrain, NCTAMS EURCENT, NCTAMS LANT, and NCTAMS PAC sites. In FY16, funding was realigned into BLI 3050 for Major Automated Information System (MAIS) transparency compliance.																		



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<b>Exhibit P-5, Cost Analysis: FY 2018 Navy</b>		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 11	<b>P-1 Line Item Number / Title:</b> 3050 / Ship Communications Automation	<b>Item Number / Title [DODIC]:</b> 1 / Ship Communications Automation
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :		<b>MDAP/MAIS Code:</b>
<p>(4) - Prior Year Procurement quantity (6) were procured under BLI 2915, therefore BLI 3050 Prior Year procurement cost is \$0.00. The associated installation in FY16 is funded under BLI 3050. - FY16 procurement Ashore unit cost is higher due to increased scope for two major upgrades done at NCTS Bahrain and NCTAMS EURCENT. -FY17-22 procurement quantities represent minor tech refreshes at 6 sites that include 2 Broadcast Control Authority and 4 NOCs (NCTS Bahrain, NCTAMS EURCENT, NCTAMS LANT, and NCTAMS PAC). - INC III Ashore units require 3 months integration, assembly, testing and shipping after delivery, prior to installation start. Installs do not begin until 10 months after procurement contract award (7 months production lead time + 3 months integration).</p>		

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<b>Exhibit P-5a, Procurement History and Planning: FY 2018 Navy</b>									<b>Date:</b> May 2017			
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 11				<b>P-1 Line Item Number / Title:</b> 3050 / Ship Communications Automation					<b>Item Number / Title [DODIC]:</b> 1 / Ship Communications Automation			
<b>Cost Elements</b>	<b>O C O</b>	<b>FY</b>	<b>Contractor and Location</b>	<b>Method/Type or Funding Vehicle</b>	<b>Location of PCO</b>	<b>Award Date</b>	<b>Date of First Delivery</b>	<b>Qty (Each)</b>	<b>Unit Cost (\$ K)</b>	<b>Specs Avail Now?</b>	<b>Date Revision Available</b>	<b>RFP Issue Date</b>
1.1.1) Automated Digital Network System (ADNS) - Ashore - INC I&II		2016	SSC PAC / San Diego, CA	C / IDIQ	SPAWAR	Nov 2015	Mar 2016	4	100.000	Y		
1.1.1) Automated Digital Network System (ADNS) - Ashore - INC I&II		2017	SSC PAC / San Diego, CA	C / IDIQ	SPAWAR	Nov 2016	Mar 2017	4	100.000	Y		
1.1.1) Automated Digital Network System (ADNS) - Ashore - INC I&II		2018	SSC PAC / San Diego, CA	C / IDIQ	SPAWAR	Nov 2017	Mar 2018	4	100.000	Y		
1.1.2) Automated Digital Network System (ADNS) - Ashore - INC III		2016	SSC PAC / San Diego, CA	C / IDIQ	SPAWAR	Nov 2015	Sep 2016	6	850.000	Y		
1.1.2) Automated Digital Network System (ADNS) - Ashore - INC III		2017	SSC PAC / San Diego, CA	C / IDIQ	SPAWAR	Nov 2016	Sep 2017	6	416.667	Y		
1.1.2) Automated Digital Network System (ADNS) - Ashore - INC III		2018	TBD / TBD	C / IDIQ	SPAWAR	Nov 2017	Sep 2018	6	416.667	N	Jun 2016	Jun 2016

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 11			<b>P-1 Line Item Number / Title:</b> 3050 / Ship Communications Automation		<b>Modification Number / Title:</b> 2 / PQ069 Automated Digital Network System (ADNS) - Afloat	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	0.000	45.061	40.878	49.436	0.000	49.436
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	0.000	45.061	40.878	49.436	0.000	49.436
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>0.000</b>	<b>45.061</b>	<b>40.878</b>	<b>49.436</b>	<b>0.000</b>	<b>49.436</b>
<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> )	-	-	-	-	-	-
<p><b>Description:</b></p> <p>ADNS is the gateway to the tactical Wide Area Network (WAN) afloat for Internet Protocol (IP) network operations, supporting information dissemination and external connectivity. ADNS allows services and applications to interconnect to the Defense Information Systems Network (DISN) ashore via multiple Radio Frequency (RF) resources and pier connectivity.</p> <p>[Automated Digital Network System (ADNS) - Afloat- INC III] ADNS is the gateway to tactical Wide Area Network (WAN) afloat for Internet Protocol (IP) network operations, supporting information dissemination and external connectivity. ADNS provides the only Quality and Class of Service (QoS/CoS) routing for Multi-Service Voice, Video, and Data domains across available Radio Frequency (RF) paths.</p>						

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 11			<b>P-1 Line Item Number / Title:</b> 3050 / Ship Communications Automation		<b>Modification Number / Title:</b> 2 / PQ069 Automated Digital Network System (ADNS) - Afloat	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Models of Systems Affected:</b> [No Model Specified]		<b>Modification Type:</b> TBD			<b>Related RDT&amp;E PEs:</b> 0204163N	
Financial Plan	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
<b>Procurement</b>						
<b>Modification Item 1 of 1:</b> PQ069 Automated Digital Network System (ADNS) - Afloat						
B Kits						
Recurring						
1.1.1) Automated Digital Network System (ADNS) - Afloat- INC III - NonOrganic <sup>(5)</sup>	26 / 0.000	20 / 26.119	16 / 24.135	22 / 31.031	- / -	22 / 31.031
1.1.2) ADNS Tech Insertions - NonOrganic <sup>(6)</sup>	- / -	12 / 1.750	31 / 4.631	42 / 5.450	- / -	42 / 5.450
<b>Subtotal: Recurring</b>	- / 0.000	- / 27.869	- / 28.766	- / 36.481	- / -	- / 36.481
<b>Subtotal: PQ069 Automated Digital Network System (ADNS) - Afloat</b>	26 / 0.000	32 / 27.869	47 / 28.766	64 / 36.481	- / -	64 / 36.481
<b>Subtotal: Procurement, All Modification Items</b>	- / 0.000	- / 27.869	- / 28.766	- / 36.481	- / -	- / 36.481
<b>Support (All Modification Items)</b>						
2.1) ADNS - Production Support	- / 0.000	- / 1.300	- / 1.200	- / 1.474	- / 0.000	- / 1.474
2.2) ADNS - DSA	- / 0.000	- / 1.888	- / 1.722	- / 1.396	- / 0.000	- / 1.396
<b>Subtotal: Support</b>	- / 0.000	- / 3.188	- / 2.922	- / 2.870	- / -	- / 2.870
<b>Installation</b>						
<b>Modification Item 1 of 1:</b> PQ069 Automated Digital Network System (ADNS) - Afloat	- / 0.000	- / 14.004	- / 9.190	- / 10.085	- / 0.000	- / 10.085
<b>Subtotal: Installation</b>	- / 0.000	- / 14.004	- / 9.190	- / 10.085	- / -	- / 10.085
<b>Total</b>						
<b>Total Cost (Procurement + Support + Installation)</b>	<b>0.000</b>	<b>45.061</b>	<b>40.878</b>	<b>49.436</b>	<b>0.000</b>	<b>49.436</b>

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy				<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 11		<b>P-1 Line Item Number / Title:</b> 3050 / Ship Communications Automation		<b>Modification Number / Title:</b> 2 / PQ069 Automated Digital Network System (ADNS) - Afloat		
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :			<b>MDAP/MAIS Code:</b>			
<b>Modification Item 1 of 1:</b> PQ069 Automated Digital Network System (ADNS) - Afloat						
<b>Manufacturer Information</b>						
Manufacturer Name: SERCO, INC.			Manufacturer Location: San Diego, CA			
Administrative Leadtime (in Months): 1			Production Leadtime (in Months): 7			
<b>Dates</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>			
Contract Dates	Nov 2015	Nov 2016				
Delivery Dates	Jun 2016	Jun 2017				
Manufacturer Name: SSC PAC-- San Diego, CA			Manufacturer Location: San Diego, CA			
Administrative Leadtime (in Months): 1			Production Leadtime (in Months): 2			
<b>Dates</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>			
Contract Dates	Nov 2015	Nov 2016				
Delivery Dates	Jan 2016	Jan 2017				
Manufacturer Name: TBD			Manufacturer Location: TBD			
Administrative Leadtime (in Months): 1			Production Leadtime (in Months): 7			
<b>Dates</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>			
Contract Dates			Nov 2017			
Delivery Dates			Jun 2018			
<b>Installation Information</b>						
<b>Method of Implementation:</b> [none specified]:: Installation Name: Automated Digital Network System (ADNS) - Afloat- INC III						
<b>Installation Cost</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	- / -	23 / 10.155	3 / 0.987	- / -	- / -	- / -
FY 2016	- / -	7 / 3.174	13 / 5.365	- / -	- / -	- / -
FY 2017	- / -	- / -	2 / 1.038	14 / 6.215	0 / 0.000	14 / 6.215
FY 2018	- / -	- / -	- / -	4 / 1.445	0 / 0.000	4 / 1.445
Total	- / -	30 / 13.329	18 / 7.390	18 / 7.660	0 / 0.000	18 / 7.660

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 11	<b>P-1 Line Item Number / Title:</b> 3050 / Ship Communications Automation	<b>Modification Number / Title:</b> 2 / PQ069 Automated Digital Network System (ADNS) - Afloat
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :		<b>MDAP/MAIS Code:</b>

**Modification Item 1 of 1:** PQ069 Automated Digital Network System (ADNS) - Afloat

**Installation Information**

**Method of Implementation:** [none specified]:: Installation Name: Automated Digital Network System (ADNS) - Afloat- INC III

**Installation Schedule**

	PYS	FY 2016				FY 2017				FY 2018			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
In	-	-	5	7	10	8	7	3	6	2	7	3	4
Out	-	-	1	6	10	7	8	3	4	9	6	6	2

**Method of Implementation:** [none specified]:: Installation Name: ADNS Tech Insertions

Installation Cost	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total 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 2016	- / -	12 / 0.675	- / -	- / -	- / -	- / -
FY 2017	- / -	- / -	31 / 1.800	- / -	- / -	- / -
FY 2018	- / -	- / -	- / -	42 / 2.425	0 / 0.000	42 / 2.425
Total	- / -	12 / 0.675	31 / 1.800	42 / 2.425	0 / 0.000	42 / 2.425

**Installation Schedule**

	PYS	FY 2016				FY 2017				FY 2018			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
In	-	-	4	5	2	1	9	9	10	3	13	10	10
Out	-	-	-	3	6	2	7	9	10	3	13	13	10

**Footnotes:**

<sup>(5)</sup> ADNS INC III Afloat procurement cost range: \$.5M - \$1.5M; installation cost range: \$.3M - \$1.0M. Average unit cost fluctuations for procurement and installation are due to varying system configurations required for surface and submarine platforms. INC III units require 3 months integration, assembly, testing and shipping after delivery, prior to installation start. Installs do not begin until 10 months after procurement contract award (7 months production lead time + 3 months integration). First quarter installations reflected in the Installation Schedule are funded in the prior year to meet the requirement to fund installation contracts 90 days prior to the beginning of shipboard installation work. 90 days are needed to provide sufficient time for the contractor to develop the work schedule, order material, and perform necessary fabrication. This process allows installations to be scheduled in the first quarter thereby supporting Fleet availability. In FY16, funding was realigned into BLI 3050 for Major Automated Information System (MAIS) transparency compliance. Prior year Procurement quantity were procured under BLI 2915, therefore BLI 3050 prior year procurement cost is \$0.00. Whereas, the FY15 procurement installed in FY16 (23) and FY17 (3) is funded under BLI 3050.

<sup>(6)</sup> FY18: Technical Insertions (TI) will be fielded to include hardware and software baseline updates to Afloat units required to maximize C4ISR capability and interface functionality between ADNS and applicable Satellite Communications (SATCOM) systems such as Navy Multi-Band Terminal(NMT), Global Broadcast System(GBS) and Battle Force Tactical Network (BFTN). FY16/FY17 Tech Insertion unit cost includes

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 11	<b>P-1 Line Item Number / Title:</b> 3050 / Ship Communications Automation	<b>Modification Number / Title:</b> 2 / PQ069 Automated Digital Network System (ADNS) - Afloat
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :		<b>MDAP/MAIS Code:</b>
<p>production engineering/integration requirements associated with the initial fielding of tech insertion capability. Unit cost decreases in FY18 as additional production engineering no longer required. TI require (1) month administrative lead time and (2) months production lead time.</p>		

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 11	<b>P-1 Line Item Number / Title:</b> 3050 / Ship Communications Automation	<b>Modification Number / Title:</b> 3 / PQ070 Shore Tactical Assured Command and Control (STACC) (formerly Tactical Switching)

<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	270.124	20.885	26.685	37.512	0.000	37.512
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	270.124	20.885	26.685	37.512	0.000	37.512
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>270.124</b>	<b>20.885</b>	<b>26.685</b>	<b>37.512</b>	<b>0.000</b>	<b>37.512</b>
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>						
Initial Spares ( <i>\$ in Millions</i> )	-	-	-	-	-	-
Gross/Weapon System Unit Cost ( <i>\$ in Thousands</i> )	-	-	-	-	-	-

## Description:

Shore Tactical Assured Command and Control has been structured to support the migration of the shore sites and their terrestrial interconnections into a coherent, scalable, Internet Protocol (IP)network-centric capability.



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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 11		<b>P-1 Line Item Number / Title:</b> 3050 / Ship Communications Automation			<b>Modification Number / Title:</b> 3 / PQ070 Shore Tactical Assured Command and Control (STACC) (formerly Tactical Switching)	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Models of Systems Affected:</b> [No Model Specified]		<b>Modification Type:</b> TBD			<b>Related RDT&amp;E PEs:</b>	
<b>Financial Plan</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
<b>Procurement</b>						
<i>Modification Item 1 of 1:</i> PQ070 Shore Tactical Assured Command and Control (STACC) (formerly Tactical Switching)						
B Kits						
Recurring						
1.1.1) Equipment - Increment I - NonOrganic	10 / 33.814	- / -	- / -	- / -	- / -	- / -
1.1.2) Equipment - Increment II - NonOrganic <sup>(7)</sup>	45 / 178.951	5 / 16.744	5 / 21.372	5 / 30.675	- / -	5 / 30.675
<i>Subtotal: Recurring</i>	- / 212.765	- / 16.744	- / 21.372	- / 30.675	- / -	- / 30.675
<i>Subtotal: PQ070 Shore Tactical Assured Command and Control (STACC) (formerly Tactical Switching)</i>	55 / 212.765	5 / 16.744	5 / 21.372	5 / 30.675	- / -	5 / 30.675
<i>Subtotal: Procurement, All Modification Items</i>	- / 212.765	- / 16.744	- / 21.372	- / 30.675	- / -	- / 30.675
<b>Support (All Modification Items)</b>						
2.1) DSA	- / 1.946	- / -	- / -	- / -	- / -	- / -
2.2) Production Support Increment I and II	- / 17.715	- / 1.010	- / 1.313	- / 1.517	- / -	- / 1.517
<i>Subtotal: Support</i>	- / 19.661	- / 1.010	- / 1.313	- / 1.517	- / -	- / 1.517
<b>Installation</b>						
<i>Modification Item 1 of 1:</i> PQ070 Shore Tactical Assured Command and Control (STACC) (formerly Tactical Switching)	- / 37.698	- / 3.131	- / 4.000	- / 5.320	- / 0.000	- / 5.320
<i>Subtotal: Installation</i>	- / 37.698	- / 3.131	- / 4.000	- / 5.320	- / -	- / 5.320
<b>Total</b>						
<b>Total Cost (Procurement + Support + Installation)</b>	<b>270.124</b>	<b>20.885</b>	<b>26.685</b>	<b>37.512</b>	<b>0.000</b>	<b>37.512</b>

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy						<b>Date:</b> May 2017							
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 11				<b>P-1 Line Item Number / Title:</b> 3050 / Ship Communications Automation				<b>Modification Number / Title:</b> 3 / PQ070 Shore Tactical Assured Command and Control (STACC) (formerly Tactical Switching)					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :						<b>MDAP/MAIS Code:</b>							
<b>Modification Item 1 of 1:</b> PQ070 Shore Tactical Assured Command and Control (STACC) (formerly Tactical Switching)													
<b>Manufacturer Information</b>													
Manufacturer Name: SSC LANT						Manufacturer Location: Charleston, SC							
Administrative Leadtime (in Months): 5						Production Leadtime (in Months): 2							
<b>Dates</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018</b>							
Contract Dates		Mar 2016		May 2017		Mar 2018							
Delivery Dates		May 2016		Jul 2017		May 2018							
<b>Installation Information</b>													
<b>Method of Implementation:</b> Method:: Installation Name: PQ070 Shore Tactical Assured Command and Control (STACC)													
<b>Installation Cost</b>		<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>	
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)	
Prior Years		55 / 37.698		- / -		- / -		- / -		- / -		- / -	
FY 2016		- / -		5 / 3.131		- / -		- / -		- / -		- / -	
FY 2017		- / -		- / -		5 / 4.000		- / -		- / -		- / -	
FY 2018		- / -		- / -		- / -		5 / 5.320		0 / 0.000		5 / 5.320	
Total		55 / 37.698		5 / 3.131		5 / 4.000		5 / 5.320		0 / 0.000		5 / 5.320	
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	55	-	-	5	-	-	-	-	5	-	-	5	-
Out	55	-	-	-	5	-	-	-	-	5	-	-	5
<b>Footnotes:</b>													
(7) STACC's Unit and installation cost vary each year depending on what modernization must be done to maintain the cyber resiliency of the network and what site(s) within each region is included in the modernization effort. Factors that relate to the cost include whether or not the modernization addresses increased bandwidth, risk vulnerabilities, and/or increased survivability and reliability. Increment II quantities represent 5 major shore regions, at 40 plus sites supporting the Fleet Commanders and their forces: 1) Eastern Pacific supporting Commander Pacific Fleet and Commander Third Fleet (Naval Computer & Telecommunications Area Master Station Pacific (NCTAMS PAC) and Naval Computer & Telecommunications Station San Diego (NCTS San Diego); 2) Western Pacific supporting Commander Seventh Fleet; 3) Indian Ocean supporting Commander Fifth (NCTS BAHRAIN); 4) European supporting Commander Sixth Fleet (NCTS NAPLES); and 5) Atlantic supporting US Fleet Forces Command, Commander Tenth Fleet and Commander Fourth Fleet (NCTAMS LANT); and Joint and Coalition Partners within each region.													

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy			<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 11		<b>P-1 Line Item Number / Title:</b> 3050 / Ship Communications Automation		<b>Modification Number / Title:</b> 4 / PQ007 Legacy Network Cyber Resiliency/Operation Rolling Tide (ORT)	

<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :			<b>MDAP/MAIS Code:</b>			
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	0.000	46.174	40.865	10.094	0.000	10.094
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	0.000	46.174	40.865	10.094	0.000	10.094
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
<b>Total Obligation Authority</b> <i>(\$ in Millions)</i>	<b>0.000</b>	<b>46.174</b>	<b>40.865</b>	<b>10.094</b>	<b>0.000</b>	<b>10.094</b>
<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:**

Legacy Network Cyber Resiliency/Operation Rolling Tide (ORT): ORT is a Navy-wide cyber remediation effort to secure government databases and improve the overall security protocols for Navy computer networks. Specifically, Legacy Network Cyber Resiliency/ORT will fund planned legacy network upgrades and mitigate security vulnerabilities on the highest End of Life platforms that are not targeted to be replaced by a Consolidated Afloat Networks & Enterprise Services (CANES) system. These upgrades will mitigate known targeted cyber vulnerabilities and include eradication of old Windows Operating Systems, critical End of Life (EOL) firewalls and routers and improved anti-malware solutions. Legacy Network Cyber Resiliency/ORT will improve the networks ability to detect known and unknown vulnerabilities and attacks by upgrading sensor and monitoring technologies and accelerate post-attack containment and recovery. Starting in FY16, Legacy Network Cyber Resiliency/ORT transferred to LI 3050 from CANES/ORT under LI 2915.

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 11			<b>P-1 Line Item Number / Title:</b> 3050 / Ship Communications Automation		<b>Modification Number / Title:</b> 4 / PQ007 Legacy Network Cyber Resiliency/Operation Rolling Tide (ORT)	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Models of Systems Affected:</b> [No Model Specified]		<b>Modification Type:</b> TBD			<b>Related RDT&amp;E PEs:</b>	
<b>Financial Plan</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
<b>Procurement</b>						
<i>Modification Item 1 of 1:</i> PQ007 Legacy Network Cyber Resiliency/Operation Rolling Tide (ORT)						
B Kits						
Recurring						
1.1.1) Legacy Network Cyber Resiliency/ORT Afloat - Equipment - NonOrganic <sup>(8)</sup>	27 / 0.000	52 / 31.254	42 / 21.509	11 / 7.290	- / -	11 / 7.290
1.1.2) Legacy Network Cyber Resiliency/ORT Ashore - Equipment - NonOrganic	- / -	2 / 1.885	3 / 3.386	2 / 0.499	- / -	2 / 0.499
<i>Subtotal: Recurring</i>	- / 0.000	- / 33.139	- / 24.895	- / 7.789	- / -	- / 7.789
<i>Subtotal: PQ007 Legacy Network Cyber Resiliency/ Operation Rolling Tide (ORT)</i>	27 / 0.000	54 / 33.139	45 / 24.895	13 / 7.789	- / -	13 / 7.789
<i>Subtotal: Procurement, All Modification Items</i>	- / 0.000	- / 33.139	- / 24.895	- / 7.789	- / -	- / 7.789
<b>Support (All Modification Items)</b>						
2.1) Legacy Network Cyber Resiliency/ORT - DSA	- / -	- / 0.692	- / 0.593	- / -	- / -	- / -
<i>Subtotal: Support</i>	- / 0.000	- / 0.692	- / 0.593	- / -	- / -	- / -
<b>Installation</b>						
<i>Modification Item 1 of 1:</i> PQ007 Legacy Network Cyber Resiliency/Operation Rolling Tide (ORT)	- / 0.000	- / 12.343	- / 15.377	- / 2.305	- / 0.000	- / 2.305
<i>Subtotal: Installation</i>	- / 0.000	- / 12.343	- / 15.377	- / 2.305	- / -	- / 2.305
<b>Total</b>						
<b>Total Cost (Procurement + Support + Installation)</b>	<b>0.000</b>	<b>46.174</b>	<b>40.865</b>	<b>10.094</b>	<b>0.000</b>	<b>10.094</b>

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy						<b>Date:</b> May 2017							
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 11				<b>P-1 Line Item Number / Title:</b> 3050 / Ship Communications Automation				<b>Modification Number / Title:</b> 4 / PQ007 Legacy Network Cyber Resiliency/Operation Rolling Tide (ORT)					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :						<b>MDAP/MAIS Code:</b>							
<b>Modification Item 1 of 1:</b> PQ007 Legacy Network Cyber Resiliency/Operation Rolling Tide (ORT)													
<b>Manufacturer Information</b>													
Manufacturer Name: SSC LANT						Manufacturer Location: SSC LANT							
Administrative Leadtime (in Months): 2						Production Leadtime (in Months): 3							
<b>Dates</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018</b>							
Contract Dates		Dec 2015		Dec 2016		Dec 2017							
Delivery Dates		Mar 2016		Mar 2017		Mar 2018							
<b>Installation Information</b>													
<b>Method of Implementation:</b> [none specified]:: Installation Name: Legacy Network Cyber Resiliency/ORT Afloat - Equipment													
<b>Installation Cost</b>		<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>	
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total 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 / 4.645		7 / 1.648		- / -		- / -		- / -	
FY 2016		- / -		34 / 7.598		18 / 4.367		- / -		- / -		- / -	
FY 2017		- / -		- / -		41 / 8.984		1 / 0.294		0 / 0.000		1 / 0.294	
FY 2018		- / -		- / -		- / -		11 / 1.751		0 / 0.000		11 / 1.751	
Total		- / -		54 / 12.243		66 / 14.999		12 / 2.045		0 / 0.000		12 / 2.045	
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	-	-	7	9	10	28	16	25	9	16	1	8	2
Out	-	-	1	11	6	17	31	21	10	7	16	1	6
<b>Method of Implementation:</b> [none specified]:: Installation Name: Legacy Network Cyber Resiliency/ORT Ashore - Equipment													
<b>Installation Cost</b>		<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>	
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total 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 2016		- / -		1 / 0.100		1 / 0.100		- / -		- / -		- / -	
FY 2017		- / -		- / -		3 / 0.278		- / -		- / -		- / -	
FY 2018		- / -		- / -		- / -		2 / 0.260		0 / 0.000		2 / 0.260	
Total		- / -		1 / 0.100		4 / 0.378		2 / 0.260		0 / 0.000		2 / 0.260	

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 11	<b>P-1 Line Item Number / Title:</b> 3050 / Ship Communications Automation	<b>Modification Number / Title:</b> 4 / PQ007 Legacy Network Cyber Resiliency/Operation Rolling Tide (ORT)

<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :	<b>MDAP/MAIS Code:</b>
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**Modification Item 1 of 1:** PQ007 Legacy Network Cyber Resiliency/Operation Rolling Tide (ORT)

**Installation Information**

**Method of Implementation:** [none specified]:: Installation Name: Legacy Network Cyber Resiliency/ORT Ashore - Equipment

**Installation Schedule**

	PYS	FY 2016				FY 2017				FY 2018			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
In	-	-	-	1	-	1	-	2	1	-	-	1	1
Out	-	-	-	-	1	-	1	-	2	1	-	-	2

**Footnotes:**

<sup>(8)</sup> Prior Year Procurement quantities (27) were procured under BLI 2915, therefore BLI 3050 PY procurement cost is \$0.00. The associated installations for FY16 and FY17 procurements(27) are funded under BLI 3050. First quarter installations reflected in the Afloat Installation Schedule are funded in the prior year in order to be able to fund the installation contracts 90 days prior to the beginning of shipboard installation work. 90 days are needed to allow sufficient time for the contractor to plan the work schedule, order material, and perform necessary fabrication. This procedure allows installations to be scheduled in the first quarter thereby supporting Fleet availability. Average unit cost fluctuations are attributable to variances in system configuration requirements among platforms. The average procurement unit cost for larger deck unit level platforms range: \$.1M-\$5.7M. Smaller deck unit level platforms range: \$.1M-\$6M. Installation cost fluctuations are attributed to and dependent on class, level of the platform, variant of predecessor system the hull currently has installed, geographic location of the installation, and length of the availability. Installation cost range: \$.1M - \$2.8M.

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy								Date: May 2017				
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 11: Shipboard Communications							P-1 Line Item Number / Title: 3057 / Communications Items under \$5M					
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A					Other Related Program Elements: 0604280N				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	114.987	17.025	10.403	18.577	0.000	18.577	26.511	20.707	28.660	29.173	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	114.987	17.025	10.403	18.577	0.000	18.577	26.511	20.707	28.660	29.173	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	114.987	17.025	10.403	18.577	0.000	18.577	26.511	20.707	28.660	29.173	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	0.513	0.024	-	-	-	-	-	-	-	-	0.537
Flyaway Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-
Description:												
<p>[P5 / NU019 EPLRS-DR/EMUT]: Enhanced Position Location Reporting System - Data Radio (EPLRS-DR)/Enhanced Man-Pack UHF Tactical (EMUT) is a Blue in Support of Green (BISOG) program that provides secure Anti-Jam (AJ), Ultra High Frequency (UHF) (420-450 MHz) and Line of Sight (LOS) data communications in support of amphibious operations at throughputs of up to 54Kbps. EPLRS-DR provides embedded Position Location Information (PLI) between shipboard networks and the shore-based Marine Tactical Data Network (TDN) and the Army Tactical Internet (TI). To meet a National Security Agency (NSA) mandate, KOK13 cryptographic equipment will be replaced with KOK23/CKG cryptographic equipment. The AN/PRC 117G integration will provide the embarked USMC landing force with ANW2 Wideband Tactical Radio Communications capability as well as the interoperability between the existing EPLRS-DR radio network with AN/PRC-117G ANW2 tactical radio network.</p>												
<p>[P5 / NU239 PORT NSW]: Portable Radio/Naval Special Warfare (PORT NSW) tactical radio: PORT NSW procures hand held and man pack/vehicular radios for NSW. Procurement needed to support Force Protection operations, especially with joint forces. NSW operational elements (SEAL platoons and Combatant Craft Detachments) rely on tactical communications and electronics equipment to accomplish all missions assigned in support of the Joint and Fleet commanders. Navy resourced tactical communications equipment is considered mission essential and will be employed by individual SEAL personnel and NSW combat elements in man pack configurations as well as onboard tactical vehicles and NSW combatant craft in tactical operations centers in fixed mount configurations.</p>												
<p>[P5 / NU245 HYDRA]: Hierarchical Yet Dynamic Reprogrammable Architecture (HYDRA): HYDRA AN/SRC-55 will replace stovepipe wireless shipboard systems with an integrated system. HYDRA is a wireless digital voice and data communication system using Commercial off the Shelf (COTS) trunking technology. HYDRA is capable of interfacing with Private Branch Exchange/Battle Group (PBX/BG) Cellular/radio frequency (RF) systems.</p>												
<p>[P5 / NU295 BFTN]: Battle Force Tactical Network (BFTN): BFTN enables delivery of Internet Protocol (IP) based collaboration services over legacy High Frequency (HF) assets. The intent is to provide an interoperable, low data rate, multi-node, Beyond-Line-of-Sight tactical edge networking capability using existing HF radio infrastructure. Supports Tactical Edge Networking and provides data path backbone for both airborne and afloat forces and supports increased data exchange with Allied Coalition forces. BFTN provides National, Allied, and Coalition maritime units with a medium band IP-based, tactical ship-ship at-sea networking capability, using legacy half-duplex UHF Line-of-Sight. BFTN will provide a bridge between legacy radio systems and future emerging wideband networking technologies.</p>												
<p>[P5 / NU790 Navy Expeditionary C4I]: Navy Expeditionary Command, Control, Communications, Computers, &amp; Intelligence (C4I): Provides procurement and integration for outfitting Table of Allowance (TOA) buy lists within the Expeditionary forces. Ensures common C4I solutions are being coordinated, tracked, procured and integrated across Navy Expeditionary Combat Command (NECC) forces.</p>												

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 11: Shipboard Communications		P-1 Line Item Number / Title: 3057 / Communications Items under \$5M
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0604280N
Line Item MDAP/MAIS Code: N/A		
<p>[P5 / ESB SOF (BSO 24)]: Expeditionary Mobile Base Special Operations Forces (ESB SOF) - The SOF component requires an ESB to have the capability for planning and conducting Intelligence, Surveillance, and Reconnaissance (ISR) and Boat Assault Force (BAF) and Helicopter Assault Force (HAF) missions. These funds procure identical sets of equipment to support SOF communications, consisting of a radio backbone infrastructure and increasing the bandwidth to support SOF missions. These additional capabilities will be back fitted during each ship's Post Shakedown Availability.Funding procures identical sets of equipment to support SOF communications, consisting of a radio backbone infrastructure and increasing the bandwidth to support SOF missions.</p> <p>[P5 / HF SAR Installations FMP (Prior Years)]: High Frequency Shipboard Automatic Link Establishment Radio (HF SAR) [Previously known as High Frequency Automatic Link Establishment (HF-ALE)]: Provides 3G HF-ALE capabilities to the Embarked Marines aboard L-Class ships. HF SAR is a stand alone menu driven system providing voice, data and chat capabilities via Line of Sight (LOS) and Beyond Line of Sight (BLOS).</p>		
<p><b>Justification:</b> NU239 - PORT NSW: FY18 funding procures 136 portable Hand Held and 61 Man Pack radios.</p> <p>NU295 - Battle Force Tactical Network (BFTN): FY18 OPN funding procures and installs 1 unit.</p> <p>NU019 - EPLRS-DR/EMUT: FY18 funding procures and installs 8 units. A complete unit consists of one AN/VRC-114(V)2 radio mount, two RT-1949 (PRC-117G) radios, one RF-5055PS power supply, and associated equipment. The quantity procured in any given year is determined by the fleet's demand signal and platform availability. In FY18, 8 platforms will receive the installation for additional capabilities. FY18 unit cost increase per radio is due to a cost increase on the PRP contract to cover the MUOS Firmware required for the radios.</p> <p>NU385 - Expeditionary Mobile Base Special Operations Forces (ESB SOF): FY 18 funding procures and installs radio antennas and bandwidth increase equipment (total of 13 antennas) in support of SOF upgrade for ESB 4. The cost delta between the ESB 3 and ESB 4 are for the refurbished CBSP asset (ESB 3) vs new system (ESB 4) and the difference in labor rates (East Coast vs West Coast) for the Post Shakedown Availability (PSA) efforts.</p> <p>NU790 - Navy Expeditionary FY18 funding is for procurement of service-common support communications and Automated Data Processing (ADP) equipment directly supports forward deployed SEALs. Investment in communications equipment, to include but not limited to, portable hand held devices, man pack radios, ruggedized laptops, and encryption-decryption devices are essential to the readiness and battlefield effectiveness of NSW in winning the current fight against ISIS and other extremist elements. Additionally, it ensures the warfighter is optimally equipped with cutting edge communications equipment for the future fight.</p> <p>Increase reflects establishment and funding of Naval Special Warfare (NSW) service-common table of allowance (TOA) to begin correcting shortfalls and bring NSW forces into alignment with required outfitting standards in accordance with SOCOM-USN Memorandum of Agreement. Naval Special Warfare requires an immediate increase in procurement of tactical communications radios to replace legacy equipment that are rapidly approaching obsolescence and, more importantly, are in many cases, incompatible with modern communication devices in use by sister services and coalition forces.</p>		



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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy								Date: May 2017				
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 12: Submarine Communications						P-1 Line Item Number / Title: 3107 / Submarine Broadcast Support						
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A					Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	33.854	15.485	34.151	29.669	0.000	29.669	29.666	30.227	32.351	32.986	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	33.854	15.485	34.151	29.669	0.000	29.669	29.666	30.227	32.351	32.986	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	33.854	15.485	34.151	29.669	0.000	29.669	29.666	30.227	32.351	32.986	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	0.453	0.030	0.064	-	0.064	0.005	-	-	-	-	0.552
Flyaway Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-	-	-	-	-	-	-
Description:												
The Submarine Broadcast program modernizes communication elements which support Navy Nuclear Command, Control, and Communications (NC3) strategic requirements, connecting the President of the United States (POTUS) to Ballistic Missile Submarines (SSBN) via the Fixed Submarine Broadcast System (FSBS). This portfolio provides integration, production and installations for shore-to-ship transmit and receive communications systems. The portfolio also provides integration, production and installations for other tactical shore-to-ship communications systems (i.e., Submarine Operating Authority Command, Control, and Communications (C3) Systems) in support of tactical communications with other submarine types (i.e., SSN & SSGN).												
[P3A / W4010 Legacy NC3 NMHS]: FY14-FY18 Legacy Nuclear Command, Control and Communication Navy Modernized Hybrid Solution (NC3 NMHS): The Legacy NC3 NMHS messaging hardware and software will provide accurate and reliable delivery of time-critical messages for command and control of nuclear forces in a pre-attack environment for force direction, force management, situation monitoring and planning. The NC3 NMHS hardware and software upgrade at all sites will replace Navy Information eXchange Terminal(NIXT) at shore communications stations supporting NC3.												
[P40AMOD / W4009 Low Band Universal Communications System (LBUCS) Transmit]: LBUCS Transmit will modernize the low power transmit subsystem hardware, software and waveform components at Broadcast Transmitter Stations (BTS) and Broadcast Control Authority (BCA) sites including the VLF Broadcast Builder, AN/URT-30B Integrated VLF Transmit Terminal (IVTT), IVTT Proxy, the MD-1310, MD-1315, and MD-1316 Modulators, and the North Atlantic Treaty Organization (NATO) Interoperable Submarine Broadcast System (NISBS). Production costs for LBUCS equipment vary due to unique site configurations. Cost and duration for LBUCS Broadcast Control Authority (BCA) installations are greater than Broadcast Transmitter Stations (BTS) due to complexity of the BCA system. Install costs for BCA equipment vary due to unique site configuration and mix of CONUS and OCONUS locations.												
[P5 / W4009 Low Band Universal Communications System (LBUCS), Receive]: LBUCS will upgrade receive subsystems of Fixed Submarine Broadcast Systems (FSBS), which are approaching their operational end of life. LBUCS will ensure operational capability through the VLF architecture by providing system life extension and flexibility of submarine broadcast reception to submarines operating in a stealth posture. Unit costs for procurement and installation of LBUCS Receive vary due to unique platform and equipment configurations.												
[P5 / W4011 Submarine Operating Authority (SUBOPAETH)]: SUBOPAETH will modernize and standardize the aging command, control and communication (C3) infrastructure and several critical C3 systems at the four regional SUBOPAETH Broadcast Control Authority (BCA) sites and three Take Charge and Move Out (TACAMO) BCA sites. Different equipment is procured and installed each fiscal year.												
[P5 / W4012 Take Charge and Move Out (TACAMO)]: TACAMO's primary mission is to receive and retransmit EAM to United States strategic forces. The TACAMO Ground Communication Programs will procure the necessary fixed and mobile communications equipment to support the TACAMO mission each fiscal year. For this reason, different components will be procured from year to year.												

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 12: Submarine Communications		<b>P-1 Line Item Number / Title:</b> 3107 / Submarine Broadcast Support
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A	<b>Program Elements for Code B Items:</b> N/A	<b>Other Related Program Elements:</b> N/A
<b>Line Item MDAP/MAIS Code:</b> N/A		
<p>[P3A / W4008 Transmission Equipment]: Transmission Equipment consists of two major systems - Antennas and Transmitters - located worldwide. Transmission Equipment program will modernize the aging and obsolete components of the submarine broadcast transmission system, which includes the high power transmitters and antennas located at the Broadcast Transmitter Station (BTS) sites. Different components are procured each year for this effort depending on modernization requirements. In FY17 one (1) Bushing, three (3) Tower Lighting Systems, two (2) Tower Lighting Isolation Transformers and thirty-five (35) Laptops and Windows 10 Software Licenses were procured. In FY18 one (1) Bushing, one (1) Base Arc Gap, four (4) Network Switch and Link Protectors and four (4) Solid-State Variable Power Amplifier Plates and one (1) Auto-tune Power Amp will be procured.</p>		

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy								<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 12: Submarine Communications						<b>P-1 Line Item Number / Title:</b> 3107 / Submarine Broadcast Support				
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A			<b>Program Elements for Code B Items:</b> N/A			<b>Other Related Program Elements:</b> N/A				
<b>Line Item MDAP/MAIS Code:</b> N/A										
Exhibits Schedule					Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 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	W4009 Low Band Universal Communications System (LBUCS) Transmit				- / 5.792	- / 4.866	- / 9.312	- / 2.332	- / 0.000	- / 2.332
P-40a	W4010 Nuclear Command, Control and Communications Navy Modernized Hybrid Solution (NC3 NMHS)				- / 9.969	- / 1.362	- / 10.736	- / 8.481	- / 0.000	- / 8.481
P-5	1 / Submarine Broadcast Support	P-5a			- / 0.000	- / 0.000	- / 8.498	- / 6.866	- / 0.000	- / 6.866
P-3a	1 / W4008 Transmission Equipment (TBD)				- / 18.093	- / 9.257	- / 5.605	- / 11.990	- / 0.000	- / 11.990
<b>P-40</b>	<b>Total Gross/Weapon System Cost</b>				<b>- / 33.854</b>	<b>- / 15.485</b>	<b>- / 34.151</b>	<b>- / 29.669</b>	<b>- / 0.000</b>	<b>- / 29.669</b>
<p>*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.</p> <p>Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.</p>										
<p><b>Justification:</b></p> <p>LBUCS Receive: FY18 funding will provide for the procurement and installation of LBUCS Receive shore and submarine units.</p> <p>LBUCS Transmit: FY18 funding will provide for the installation of LBUCS Transmit units at Broadcast Transmitter Stations (BTS) and Broadcast Control Authority (BCA) sites.</p> <p>Submarine Operating Authority (SUBOPAUTH): FY18 funding will provide for the procurement of the Information Screening and Deliver Subsystem (ISDS) modernization as well as the Allied Enclave variant of the ISDS for seven BCA sites; and for the installation of Submarine Fleet Mail Server (SUBFMS), SUBOPAUTH Wide Area Network Monitoring (SWANMON), BCA Utilities Workstation, Network Attached Storage (NAS), File Transfer Protocol-Secure (FTP-S) and a new Chat application at four of the SUBOPAUTH BCA sites.</p> <p>Transmission Equipment: FY18 funding will provide for eleven (11) procurements and thirty-one (31) installations at five (5) different Broadcast Transmitter Station (BTS) sites. Procurement and Installation unit costs vary due to procuring and installing different components each fiscal year. For example FY17 procured one (1) Bushing, three (3) Tower Lighting Systems, two (2) Tower Lighting Isolation Transformers, and thirty-five (35) Laptops and Windows 10 Software Licenses. FY18 will procure one (1) Bushing, one (1) Base Arc Gap, four (4) Solid State Variable Power Amplifier Plates, four (4) Network Switches and Link Protectors and one (1) Auto-tune Power Amp.</p> <p>FY18 funding - Legacy Nuclear Command, Control and Communication Navy Modernized Hybrid Solution (NC3 NMHS): Provides for the procurement and installation of NC3 NMHS (21) Navy Information eXchange Terminals (NIXT) and (4) Nova Hardware and Software.</p>										

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<b>Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy</b>																<b>Date:</b> May 2017				
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 12								<b>P-1 Line Item Number / Title:</b> 3107 / Submarine Broadcast Support								<b>Aggregated Items Title:</b> W4009 Low Band Universal Communications System (LBUCS) Transmit				

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
A Kits/Non-Recurring -- W4009 Low Band Universal Communications System (LBUCS), Transmit																				
Broadcast Keying Station (BKS)/ Broadcast Control Authority (BCA) -- Procurement <sup>(1)</sup>	A		540.500	4	2.162	-	-	-	176.167	24	4.228	-	-	-	-	-	-	-	-	-
Broadcast Keying Station (BKS)/ Broadcast Control Authority (BCA) -- Installation	A		-	-	1.000	-	-	-	-	-	1.919	-	-	0.884	-	-	-	-	-	0.884
Broadcast Transmitter Station (BTS) -- Procurement	A		124.500	4	0.498	325.500	4	1.302	121.450	20	2.429	-	-	-	-	-	-	-	-	-
Broadcast Transmitter Station (BTS) -- Installation	A		-	-	0.520	-	-	-	-	-	0.490	-	-	1.413	-	-	-	-	-	1.413
Subtotal: A Kits/Non-Recurring -- W4009 Low Band Universal Communications System (LBUCS), Transmit			-	-	4.180	-	-	1.302	-	-	9.066	-	-	2.297	-	-	-	-	-	2.297
Support Cost -- W4555 Production Support																				
Production Support	A		-	-	0.275	-	-	0.564	-	-	0.121	-	-	-	-	-	-	-	-	-
DSA <sup>(2)</sup>	A		-	-	0.658	-	-	1.500	-	-	0.100	-	-	0.010	-	-	-	-	-	0.010
Data Logistics <sup>(3)</sup>	A		-	-	0.346	-	-	1.000	-	-	0.025	-	-	0.025	-	-	-	-	-	0.025
Engineering Change Requests	A		-	-	0.333	-	-	0.500	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support Cost -- W4555 Production Support			-	-	1.612	-	-	3.564	-	-	0.246	-	-	0.035	-	-	-	-	-	0.035
Total			-	-	5.792	-	-	4.866	-	-	9.312	-	-	2.332	-	-	0.000	-	-	2.332

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

**Remarks:**

Models of Systems Affected: VLF Broadcast System

Low Band Universal Communication System (LBUCS) Transmit will modernize the transmit subsystem hardware, software, and waveform components at Broadcast Transmitter Stations (BTS) and Broadcast Control Authority (BCA) sites including the Very Low Frequency (VLF) Broadcast Builder, AN/URT-30B Integrated VLF Transmit Terminal (IVTT), IVTT Proxy, the MD-1310, MD-1315, and MD-1316 Modulators, and the North Atlantic Treaty Organization (NATO) Interoperable Submarine Broadcast System (NISBS).

**Footnotes:**

<sup>(1)</sup> Production costs for LBUCS equipment vary due to unique site configurations. Since PB 17, the LBUCS bill of materials was finalized after conducting site surveys and completing LRIP installations and testing. The LRIP activities and site surveys demonstrated a need to adjust the unit cost for both BCA and BTS procurements. LBUCS will procure all full rate production hardware in a single buy in FY2017 so that it may field through FOC with a standard configuration.

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<b>Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy</b>		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 12	<b>P-1 Line Item Number / Title:</b> 3107 / Submarine Broadcast Support	<b>Aggregated Items Title:</b> W4009 Low Band Universal Communications System (LBUCS) Transmit

LBUCS Transmit hardware components from COTS manufacturers are on short product lifecycles. Cost and duration for LBUCS Broadcast Control Authority (BCA) installations are greater than Broadcast Transmitter Stations (BTS) due to complexity of the BCA system. Additionally, install costs for BCA equipment vary due to unique site configuration and mix of CONUS and OCONUS locations. For example, OCONUS (Puerto Rico, Australia, Japan, Iceland, Hawaii, and Italy) install costs are higher due to international coordination, modifications (e.g. international power modifications, travel and shipping.) With FY17 funds, LBUCS will install 10 production and installation support facility systems for which the cost is significantly lower than the operational BCAs and BTSs, as no international coordination, modification, shipping or travel will be required. Additionally, several FY17 funded sites leverage LRIP equipment and require minimal modification to the existing structure. LBUCS Transmit equipment and cables will be installed in racks and must go through acceptance and integration testing prior to installation. This process can take up to 15 months due to complexity of each site's unique system configuration and special considerations (For example, international power modifications, adjustments for space availability, and extended shipping times for OCONUS sites). Installation schedule was arranged to accommodate sites with shorter integration timelines first and longer integration timelines later. The 14 installations taking place in FY17 have shorter integration timelines and therefore can be installed at that point. Nearly all of the installations taking place in FY18 are at OCONUS sites which require additional integration time, coordination, travel, and shipping, and therefore must be procured in one year and installed in the following year.

<sup>(2)</sup> Design Services Allocation (DSA) funding supports development of installation drawings and site surveys.

<sup>(3)</sup> Data logistics funds the initial logistics package and deficiency corrections.

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<b>Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy</b>																<b>Date:</b> May 2017			
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 12								<b>P-1 Line Item Number / Title:</b> 3107 / Submarine Broadcast Support								<b>Aggregated Items Title:</b> W4010 Nuclear Command, Control and Communications Navy Modernized Hybrid Solution (NC3 NMHS)			

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
A Kits/Recurring																				
W4010 NC3 NMHS - Nova (Legacy) -- Procurement <sup>(4)</sup>	A		206.000	5	1.030	460.000	2	0.920	834.250	4	3.337	818.500	4	3.274	-	-	-	818.500	4	3.274
W4010 NC3 NMHS - Nova (Legacy) -- Installation	A		-	-	0.755	-	-	0.389	-	-	1.656	-	-	1.660	-	-	-	-	-	1.660
W4010 NC3 NMHS - NIXT (Legacy) -- Procurement <sup>(5)</sup>	A		30.010	98	2.941	-	-	-	130.000	32	4.160	111.714	21	2.346	-	-	-	111.714	21	2.346
W4010 NC3 NMHS - NIXT (Legacy) -- Installation	A		-	-	5.067	-	-	-	-	-	1.146	-	-	1.065	-	-	-	-	-	1.065
Subtotal: A Kits/Recurring			-	-	9.793	-	-	1.309	-	-	10.299	-	-	8.345	-	-	-	-	-	8.345
Support Cost																				
Nova/NIXT Legacy- Production Support	A		-	-	0.176	-	-	0.053	-	-	0.437	-	-	0.136	-	-	-	-	-	0.136
Subtotal: Support Cost			-	-	0.176	-	-	0.053	-	-	0.437	-	-	0.136	-	-	-	-	-	0.136
Total			-	-	9.969	-	-	1.362	-	-	10.736	-	-	8.481	-	-	0.000	-	-	8.481

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

**Remarks:**

[P3A / W4010 Legacy NC3 NMHS]: FY14-FY18 Legacy Nuclear Command, Control and Communication Navy Modernized Hybrid Solution (NC3 NMHS): The Legacy NC3 NMHS messaging hardware and software will provide accurate and reliable delivery of time-critical messages for command and control of nuclear forces in a pre-attack environment for force direction, force management, situation monitoring and planning. The NC3 NMHS hardware and software upgrade at all sites will replace Navy Information eXchange Terminal(NIXT) at shore communications stations supporting NC3.

**Footnotes:**

<sup>(4)</sup> Unit cost fluctuation is due to procurement of variable systems to support Nova legacy configurations and the addition of Network Operations/Computer Network Defense(NETOPS/CND) capability requirement to meet cyber security requirements. The FY18 increase in Nova average unit costs is due to additional cybersecurity sensors required for defending the network by the Navy Computer Network Defense Service Provider (CNDSP). These sensors are added requirements for FY18. Installation costs vary due to unique site configurations. The FY18 increase in Nova average installation costs is due to the installation of additional cybersecurity sensors required for defending the network by the Navy Computer Network Defense Service Provider (CNDSP). These sensors are added installation requirements for FY18.

<sup>(5)</sup> Unit cost fluctuation is due to procurement of variable systems to support Navy Information eXchange Terminal (NIXT) legacy configurations, and the addition of Network Operations/Computer Network Defense(NETOPS/CND) capability requirement to meet cyber security requirements. The FY18 increase in NIXT average unit cost is due to additional cybersecurity sensors required for defending the network by the Navy Computer Network Defense Service Provider (CNDSP). These sensors are added requirements for FY18. Installation costs vary due to unique site configurations and equipment installation requirements.

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Exhibit P-5, Cost Analysis: FY 2018 Navy											Date: May 2017							
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 12						P-1 Line Item Number / Title: 3107 / Submarine Broadcast Support						Item Number / Title [DODIC]: 1 / Submarine Broadcast Support						
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Resource Summary				Prior Years		FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total				
Procurement Quantity <i>(Units in Each)</i>				-		-		-		-		-		-				
Gross/Weapon System Cost <i>(\$ in Millions)</i>				0.000		0.000		8.498		6.866		0.000		6.866				
Less PY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Net Procurement (P-1) <i>(\$ in Millions)</i>				0.000		0.000		8.498		6.866		0.000		6.866				
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Total Obligation Authority <i>(\$ in Millions)</i>				0.000		0.000		8.498		6.866		0.000		6.866				
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																		
Initial Spares <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>				-		-		-		-		-		-				
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Hardware - W4009 Low Band Universal Communications System (LBUCS), Receive Cost																		
Recurring Cost																		
1.1.1) W4009 LBUCS Receive <sup>(1)</sup> <sup>(6)</sup>	-	-	0.000	-	-	0.000	86.693	12	1.040	62.182	43	2.674	-	-	0.000	62.182	43	2.674
Subtotal: Recurring Cost	-	-	0.000	-	-	0.000	-	-	1.040	-	-	2.674	-	-	0.000	-	-	2.674
Subtotal: Hardware - W4009 Low Band Universal Communications System (LBUCS), Receive Cost	-	-	0.000	-	-	0.000	-	-	1.040	-	-	2.674	-	-	0.000	-	-	2.674
Hardware - Installations - W4009 Low Band Universal Communications System (LBUCS), Receive Cost																		
Recurring Cost																		
2.1.1) LBUCS Receive Installation Ashore (W4776) <sup>(7)</sup>	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.049	-	-	0.000	-	-	0.049
2.1.2) LBUCS Receive Installation Afloat (W4777) <sup>(8)</sup>	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.118	-	-	0.000	-	-	0.118
Subtotal: Recurring Cost	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.167	-	-	0.000	-	-	0.167
Subtotal: Hardware - Installations - W4009 Low Band Universal Communications System (LBUCS), Receive Cost	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.167	-	-	0.000	-	-	0.167
Hardware - W4011 Submarine Operating Authority (SUBOPAUTH) Cost																		
Recurring Cost																		

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Exhibit P-5, Cost Analysis: FY 2018 Navy												Date: May 2017						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 12						P-1 Line Item Number / Title: 3107 / Submarine Broadcast Support						Item Number / Title [DODIC]: 1 / Submarine Broadcast Support						
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 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
3.1.1) Submarine Operating Authority (SUBOPAUTH) <sup>(†) (9)</sup>	-	-	0.000	-	-	0.000	352.000	4	1.408	215.909	11	2.375	-	-	0.000	215.909	11	2.375
Subtotal: Recurring Cost	-	-	0.000	-	-	0.000	-	-	1.408	-	-	2.375	-	-	0.000	-	-	2.375
Subtotal: Hardware - W4011 Submarine Operating Authority (SUBOPAUTH) Cost	-	-	0.000	-	-	0.000	-	-	1.408	-	-	2.375	-	-	0.000	-	-	2.375
Hardware - W4776 Shore Installations Cost																		
Recurring Cost																		
4.1.1) SUBOPAUTH Shore Installation <sup>(10)</sup>	-	-	0.000	-	-	0.000	-	-	0.000	-	-	1.121	-	-	0.000	-	-	1.121
Subtotal: Recurring Cost	-	-	0.000	-	-	0.000	-	-	0.000	-	-	1.121	-	-	0.000	-	-	1.121
Subtotal: Hardware - W4776 Shore Installations Cost	-	-	0.000	-	-	0.000	-	-	0.000	-	-	1.121	-	-	0.000	-	-	1.121
Hardware - W4012 Take Charge and Move Out (TACAMO) Cost																		
Recurring Cost																		
5.1.1) W4012 Take Charge and Move Out (TACAMO) <sup>(†) (11)</sup>	-	-	0.000	-	-	0.000	1,962.500	3	5.888	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	0.000	-	-	0.000	-	-	5.888	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Hardware - W4012 Take Charge and Move Out (TACAMO) Cost	-	-	0.000	-	-	0.000	-	-	5.888	-	-	0.000	-	-	0.000	-	-	0.000
Support - Support Cost																		
8.1) LBUCS Receive Production Support	-	-	0.000	-	-	0.000	-	-	0.067	-	-	0.193	-	-	0.000	-	-	0.193
8.2) LBUCS Receive Economic Change Requests	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.301	-	-	0.000	-	-	0.301
8.3) SUBOPAUTH Production Support	-	-	0.000	-	-	0.000	-	-	0.031	-	-	0.035	-	-	0.000	-	-	0.035
8.4) TACAMO Production Support	-	-	0.000	-	-	0.000	-	-	0.064	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Support - Support Cost	-	-	0.000	-	-	0.000	-	-	0.162	-	-	0.529	-	-	0.000	-	-	0.529
Gross/Weapon System Cost	-	-	0.000	-	-	0.000	-	-	8.498	-	-	6.866	-	-	0.000	-	-	6.866

(†) indicates the presence of a P-5a

(†) indicates the presence of a P-5a



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<b>Exhibit P-5, Cost Analysis: FY 2018 Navy</b>		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 12	<b>P-1 Line Item Number / Title:</b> 3107 / Submarine Broadcast Support	<b>Item Number / Title [DODIC]:</b> 1 / Submarine Broadcast Support
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :		<b>MDAP/MAIS Code:</b>
<p><b>Footnotes:</b></p> <p><sup>(6)</sup> Unit costs for Low Band Universal Communications Systems (LBUCS) Receive equipment vary due to economic order quantities and learning curve as well as inflation adjustments.</p> <p><sup>(7)</sup> Ashore install costs for LBUCS Receive equipment vary due to unique site and system configurations at a mix of Continental United States (CONUS) and Outside the Continental United States (OCONUS) locations. For example, OCONUS (Japan, England, Italy, and Hawaii) install costs are higher due to international coordination, travel and shipping.</p> <p><sup>(8)</sup> Afloat install costs for LBUCS Receive equipment vary due to varying platform (five different classes of submarines) and system configurations. For example, an SSBN requires three units installed while an SSN requires one, making the install cost lower for an SSBN due to consolidated labor efforts.</p> <p><sup>(9)</sup> Submarine Operating Authority (SUBOPAUTH) equipment procurement costs vary due to unique equipment configurations and different equipment is being procured each year. For example, FY17 procured the modernization equipment for Submarine Fleet Mail Server (SUBFMS), SUBOPAUTH Wide Area Network Monitoring (SWANMON), Broadcast Control Authority (BCA) Utilities Workstation, Network Attached Storage (NAS), File Transfer Protocol-Secure (FTP-S) and a new Chat application. FY18 will procure the Information Screening and Deliver Subsystem (ISDS) modernization as well as the Allied Enclave variant of the ISDS.</p> <p><sup>(10)</sup> Submarine Operating Authority (SUBOPAUTH) equipment installation costs vary due to unique equipment configurations at each site. For example, FY18 will install the SUBFMS, SWANMON, BCA Utilities Workstation, NAS systems, FTP-S and the new Chat application.</p> <p><sup>(11)</sup> Take Charge and Move Out (TACAMO) procurement and installation unit costs vary due to procuring and installing different components each fiscal year.</p>		

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Exhibit P-5a, Procurement History and Planning: FY 2018 Navy									Date: May 2017			
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 12			P-1 Line Item Number / Title: 3107 / Submarine Broadcast Support						Item Number / Title [DODIC]: 1 / Submarine Broadcast Support			
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
1.1.1) W4009 LBUCS Receive		2017	SSC PAC / San Diego, CA	WR	San Diego, CA	Jun 2017	Dec 2017	12	86.693	N	Jun 2017	
1.1.1) W4009 LBUCS Receive		2018	SSC PAC / San Diego, CA	WR	San Diego, CA	May 2018	Nov 2018	43	62.182	N	Jun 2017	
3.1.1) Submarine Operating Authority (SUBOPAUTH)		2017	SSC LANT / Charleston, SC	WR	Charleston, SC	Jun 2017	Sep 2017	4	352.000	Y		
3.1.1) Submarine Operating Authority (SUBOPAUTH)		2018	SSC LANT / Charleston, SC	WR	Charleston, SC	Apr 2018	Jul 2018	11	215.909	Y		
5.1.1) W4012 Take Charge and Move Out (TACAMO)		2017	RDSI / Newport, RI	C / CPFF	San Diego, CA	Apr 2017	Feb 2018	3	1,962.500	Y		

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 12		<b>P-1 Line Item Number / Title:</b> 3107 / Submarine Broadcast Support			<b>Modification Number / Title:</b> 1 / W4008 Transmission Equipment	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	18.093	9.257	5.605	11.990	0.000	11.990
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	18.093	9.257	5.605	11.990	0.000	11.990
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
<b>Total Obligation Authority</b> <i>(\$ in Millions)</i>	<b>18.093</b>	<b>9.257</b>	<b>5.605</b>	<b>11.990</b>	<b>0.000</b>	<b>11.990</b>
<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>	-	-	-	-	-	-
<b>Description:</b> Transmission Equipment program will modernize the aging and obsolete components of the submarine broadcast transmission system, which includes the high power transmitters and antennas located at the Broadcast Transmitter Station (BTS) sites. Different components are procured each year for this effort depending on modernization requirements. In FY17 one (1) Bushing, three (3) Tower Lighting Systems, two (2) Tower Lighting Isolation Transformers and thirty-five (35) Laptops and Windows 10 Software Licenses were procured. In FY18 one (1) Bushing, one (1) Base Arc Gap, four (4) Network Switch and Link Protectors and four (4) Solid-State Variable Power Amplifier Plates and one (1) Auto-tune Power Amp will be procured.						

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 12			<b>P-1 Line Item Number / Title:</b> 3107 / Submarine Broadcast Support		<b>Modification Number / Title:</b> 1 / W4008 Transmission Equipment	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Models of Systems Affected:</b> [No Model Specified]		<b>Modification Type:</b> TBD			<b>Related RDT&amp;E PEs:</b>	
<b>Financial Plan</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
<b>Procurement</b>						
<i>Modification Item 1 of 1:</i> W4008 Transmission Equipment						
A Kits						
Recurring						
1.1.1) Transmission Equipment - NonOrganic	4 / 10.357	- / -	- / -	- / -	- / -	- / -
1.1.2) Antennas - NonOrganic <sup>(12)</sup>	3 / 1.450	1 / 0.550	6 / 1.828	2 / 0.756	- / -	2 / 0.756
1.1.3) Transmitters - NonOrganic <sup>(13)</sup>	1 / 3.000	2 / 7.200	35 / 1.675	9 / 8.558	- / -	9 / 8.558
<i>Subtotal: Recurring</i>	- / 14.807	- / 7.750	- / 3.503	- / 9.314	- / -	- / 9.314
<i>Subtotal: W4008 Transmission Equipment</i>	8 / 14.807	3 / 7.750	41 / 3.503	11 / 9.314	- / -	11 / 9.314
<i>Subtotal: Procurement, All Modification Items</i>	- / 14.807	- / 7.750	- / 3.503	- / 9.314	- / -	- / 9.314
<b>Support (All Modification Items)</b>						
2.1) Production Support	- / 1.176	- / 0.207	- / 0.300	- / 0.522	- / 0.000	- / 0.522
<i>Subtotal: Support</i>	- / 1.176	- / 0.207	- / 0.300	- / 0.522	- / -	- / 0.522
<b>Installation</b>						
<i>Modification Item 1 of 1:</i> W4008 Transmission Equipment	- / 2.110	- / 1.300	- / 1.802	- / 2.154	- / 0.000	- / 2.154
<i>Subtotal: Installation</i>	- / 2.110	- / 1.300	- / 1.802	- / 2.154	- / -	- / 2.154
<b>Total</b>						
<b>Total Cost (Procurement + Support + Installation)</b>	<b>18.093</b>	<b>9.257</b>	<b>5.605</b>	<b>11.990</b>	<b>0.000</b>	<b>11.990</b>

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy						<b>Date:</b> May 2017							
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 12				<b>P-1 Line Item Number / Title:</b> 3107 / Submarine Broadcast Support				<b>Modification Number / Title:</b> 1 / W4008 Transmission Equipment					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :						<b>MDAP/MAIS Code:</b>							
<b>Modification Item 1 of 1:</b> W4008 Transmission Equipment													
<b>Manufacturer Information</b>													
Manufacturer Name: SSC PAC (Antennas) <sup>(14)</sup>						Manufacturer Location: San Diego, CA							
Administrative Leadtime (in Months): 3						Production Leadtime (in Months): 3							
<b>Dates</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018</b>							
Contract Dates		Jan 2016		Mar 2017		Mar 2018							
Delivery Dates		Nov 2016		Jun 2017		Jun 2018							
Manufacturer Name: SSC LANT (Transmitters)						Manufacturer Location: Charleston, SC							
Administrative Leadtime (in Months): 3						Production Leadtime (in Months): 5							
<b>Dates</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018</b>							
Contract Dates		Aug 2016		Jan 2017		Jan 2018							
Delivery Dates		Jun 2017		Jun 2017		Jun 2018							
<b>Installation Information</b>													
<b>Method of Implementation:</b> Alteration Installation Team:: Installation Name: Transmission Equipment													
<b>Installation Cost</b>		<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>	
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)	
Prior Years		4 / 2.110		2 / 0.800		2 / 0.540		- / -		- / -		- / -	
FY 2016		- / -		2 / 0.500		1 / 0.420		- / -		- / -		- / -	
FY 2017		- / -		- / -		16 / 0.842		25 / 1.903		0 / 0.000		25 / 1.903	
FY 2018		- / -		- / -		- / -		6 / 0.251		0 / 0.000		6 / 0.251	
Total		4 / 2.110		4 / 1.300		19 / 1.802		31 / 2.154		0 / 0.000		31 / 2.154	
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	4	-	-	-	1	1	-	2	19	20	4	-	5
Out	4	-	-	-	1	1	-	2	19	20	4	-	5
<b>Footnotes:</b>													
<sup>(12)</sup> ANTENNA Transmission Equipment funds modernization of the aging and obsolete antenna components used in the Submarine Broadcast. Procurement and Installation unit costs vary due to procuring and installing different components each fiscal year. FY17 ANTENNA funding procures six (6) components: one (1) bushing, three (3) tower lighting systems, two (2) Tower Lighting Isolation Transformers (TLIT), each on separate task orders on the same contract which awards in March. Specifically, the first item, one (1) tower lighting system, is delivered three months after award, two (2) tower lighting systems and the TLITs deliver eight months after award and the bushing delivers eleven (11) months after award. Therefore, only the first tower lighting system will be installed in FY17. The remaining items will install in FY18.													

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 12	<b>P-1 Line Item Number / Title:</b> 3107 / Submarine Broadcast Support	<b>Modification Number / Title:</b> 1 / W4008 Transmission Equipment
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :		<b>MDAP/MAIS Code:</b>
<p>The bushing will be installed in Q4 of FY18 due to weather conditions and operational availability at NCTAMS LANT (Cutler, ME). FY18 ANTENNA funding procures two (2) components: One (1) base arc gap, and (1) bushing, both on separate task orders on the same contract which awards in March. Specifically, the first item, the base arc gap delivers three months after award and the bushing delivers eleven (11) months after award. Therefore, only the base arc gap will be installed in FY18. The bushing will be installed in Q4 of FY19 due to assembly requirements prior to install, weather conditions and operational availability at NCTAMS LANT (Cutler, ME).</p> <p>(13) TRANSMITTERS Transmission Equipment funds modernization of the aging and obsolete transmitter components used in the Submarine Broadcast. Procurement and Installation unit costs vary due to procuring and installing different components each fiscal year. FY17 TRANSMITTER funding procures a quantity buy of 35 Laptops with Windows 10 operating systems (configuration identical) to upgrade capabilities and comply with DoD CIO memo dated November 20, 2015 that directed migration to Windows 10 system by FY17. The Transmitter equipment procured in FY17 requires a 5 month lead time. After delivery, this equipment must go through certification and accreditation prior to install. This process takes 3-5 months and all equipment must have the same configuration baseline. Fifteen of the laptops will complete certification, accreditation, and installation in FY17 and the remaining 20 will install shortly after in FY18. FY18 TRANSMITTER funding procures (9) components: (4) Network Switch and Link Protectors, (4) Solid-State Variable Power Amplifier Plates and (1) Auto-Tune Power Amplifier on separate task orders on the same contract which awards in January. Specifically, the first items, the Network Switch and Link Protectors and the Auto-Tune Power Amplifier deliver five (5) months after award and the Solid-State Variable Power Amplifier Plates deliver nine (9) months after award. Therefore, the Network Switch and Link Protectors and the Auto-Tune Power Amplifier will be installed using FY18 funding and are subject to site availabilities. The Solid-State Variable Power Amplifier Plates will install in FY19 due to assembly and shipment requirements prior to the installation.</p> <p>(14) Antenna equipment (various components) is procured on one contract award in March. Delivery dates vary between three and eleven months.</p>		

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy										<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 12: Submarine Communications							<b>P-1 Line Item Number / Title:</b> 3130 / Submarine Communication Equipment					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A				<b>Program Elements for Code B Items:</b> N/A				<b>Other Related Program Elements:</b> N/A				
<b>Line Item MDAP/MAIS Code:</b> N/A												
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>To Complete</b>	<b>Total</b>
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	577.251	58.037	64.529	86.204	0.000	86.204	78.987	85.101	87.120	87.793	Continuing	Continuing
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	577.251	58.037	64.529	86.204	0.000	86.204	78.987	85.101	87.120	87.793	Continuing	Continuing
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>577.251</b>	<b>58.037</b>	<b>64.529</b>	<b>86.204</b>	<b>0.000</b>	<b>86.204</b>	<b>78.987</b>	<b>85.101</b>	<b>87.120</b>	<b>87.793</b>	<b>Continuing</b>	<b>Continuing</b>
<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> )	-	1.048	0.305	0.701	-	0.701	1.438	1.109	0.349	0.640	Continuing	Continuing
Flyaway Unit Cost ( <i>\$ in Thousands</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ( <i>\$ in Thousands</i> )	-	-	-	-	-	-	-	-	-	-	-	-

**Description:**

PROGRAM COVERAGE: The Submarine Communications Program mission is to create a common, automated, open system architecture radio room for all submarine classes. The program provides for the procurement and installation of systems incorporating the technical advances of network centric warfare to allow the submarine force to communicate as part of the Battle Group. The program addresses the unique demands of submarine communications, stealth, obsolescence issues and higher data rate requirements.

[P40A / L0035 Antenna Modifications]: - Antenna modifications provide for the procurement and installation of field change kits of legacy antenna equipment (OE-315, AN/BRA-24, AN/BRA-6B, BRT-1/1A). These modifications address performance issues, improve reliability and maintainability, decrease vulnerability, and provide cost effective technology refresh. Modifications are applicable to all submarine classes (LOS ANGELES, SEAWOLF, OHIO SSBN/SSGN, and VIRGINIA) and are implemented on a Fleet priority basis. Procurement and Installation unit costs vary due to procuring and installing different components each fiscal year.

[P40A / L0099 Towed Buoy Antenna BRR-6/6B Reliability Improvements]: - The AN/BRR-6/6B Towed Buoy Antenna system is installed on the OHIO-class Ballistic Missile Submarines (SSBN). Each boat has two (2) towed communications buoys with the sole function of supporting Navy Nuclear Command, Control, and Communications (NC3) strategic requirements, connecting the President of the United States (POTUS) to Ballistic Missile Submarines (SSBN) communications reception for the strategic deterrent mission. The AN/BRR-6/6B Towed Buoy Antenna system receives transmission across the LF,VLF, HF frequency range. The buoy system provides significant operational flexibility by providing a means to passively receive communications while remaining at depth with minimal impact on boat's maneuverability or detectability.

The Towed Buoy Antenna BRR-6/6B reliability improvements provide for the procurement and installation of field change kits of the Towed Buoy Antenna BRR-6/6B to improve system performance (measured by operational availability Ao) and reliability (measured by mean time between failures MTBF); improvements are applicable to SSBN only. The Towed Buoy Antenna BRR-6/6B is a key component of the NC3 system and the primary means of receiving Emergency Action Messages (EAMs).

The Antenna BRR-6/6B Reliability Improvements program does not follow a traditional acquisition life cycle. Procurement and installation unit costs vary due to the phased approach as prescribed in the AN/BRR-6/6B Towed Buoy Antenna Lean Event Final Report of 30 September 2011 for procuring and installing different components each fiscal year in order to meet platform installation availabilities without degrading SSBN operational readiness.

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 12: Submarine Communications		P-1 Line Item Number / Title: 3130 / Submarine Communication Equipment
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>[P40A / L0097 Submarine Local Area Network (SubLAN)]: Provides a robust shipboard backbone Information Technology (IT) network with multiple classification enclaves that, along with the Common Submarine Radio Room (CSRR) and Automated Digital Network System (ADNS), provides end-to-end wideband connectivity to the global Defense Information System Networks (DISN) (Secret Internet Protocol Router Network and Nonclassified Internet Protocol Router Network). SubLAN is designed in accordance with the IT for the 21st Century fleet initiative, and thus SubLAN will support greatly improved connectivity to, and interoperability with, the carrier strike group (CSG) and expeditionary strike group (ESG) commander, thereby achieving network-centric warfare, and with shore commands. The SubLAN network is enhanced for mission-critical tactical applications, and as such SubLAN forms the medium that will interconnect Sonar, Combat, Electronic Surveillance Measures, Radio, etc., and permits the seamless exchange of warfighting tactical data between these systems and with the CSG/ESG commander. The SubLAN tactical backbone replicates the functionality of the United States Ship (USS) VIRGINIA class network architecture, allowing back fit of VIRGINIA class tactical subsystem modernization into existing submarines. The SubLAN shipboard IT infrastructure is being designed as an all-Commercial Off-The-Shelf (COTS), open-system architecture such that it will permit other electronic subsystem programs to rely on SubLAN for subsystem interconnectivity (rather than having each subsystem install its own IT network); the revolutionary approach of treating the shipboard network as a basic utility (like water, power and lighting) will support the efficient and economic modernization of the various electronic subsystems.</p> <p>[P40AMOD / L0087 Submarine High Data Rate Antenna]: SUBMARINE HIGH DATA RATE (SubHDR) SATELLITE COMMUNICATIONS SYSTEM - The Submarine HDR system provides submarines with antennas that have the bandwidth, gain, and flexibility to meet the stated Commander, Submarine Force, United States Atlantic Fleet/Commander, Submarine Force, US Pacific Fleet (COMSUBLANT/COMSUBPAC) requirements for HDR communications in the Super High Frequency (SHF) and Extremely High Frequency (EHF) frequency spectrums. The Radome provides a watertight enclosure for the antenna and associated electronics, as well as being a transparent window for Radio Frequency, (RF) communication signals to pass through. This radome needs to be replaced with a newly designed radome because the existing radome is experiencing severe cracking after only 3 to 4 years of service, at which time it is required to be pulled from service in order to prevent an implosion. This new design will prevent those cracks from occurring.</p> <p>[P3A / L0080 OE-538/BRC Inc 2]: OUTBOARD ELECTRONICS (OE)-538 &amp; OE-592 ANTENNA GROUP - The OE-538 System is currently installed on all submarine classes except SSBN. The OE-592 system is currently installed on SSBNs. The OE-538 Inc 2 consists of two configurations: OE-538A and OE-538B. The OE-538A effort upgrades the OE-538 system from FY15-FY20 to support Mobile User Objective System (MUOS), Link-16 Tactical Data Link and Iridium capabilities. The OE-538B efforts upgrades the OE-538A from FY20-FY27 to support Global Positioning System (GPS) Anti-Jam and GPS Military Coded capabilities.</p> <p>[P3A - 3 / L0084 CSRR-SSBN (OHIO)]: COMMON SUBMARINE RADIO ROOM (CSRR) (L0084) - The CSRR is an interoperable submarine communications system operating within the Information Dominance architecture, which provides consistent and reliable two-way, modern, Internet Protocol (IP) connectivity to joint and combined forces. This evolutionary system achieves unmatched capability, cost reduction, and future technology integration via a multimedia, circuit sharing, and Commercial Off-The-Shelf (COTS) based open architecture that serves as the shipboard automated communications control system. Procurement in this line is for the radio room workstations, chassis, Radio Frequency Distribution and Control System (RFDACS), common power supplies, power distribution units, cabling, mounting kits and ancillary components required to integrate communications equipment for submarines. The RFDACS technology update for LOS ANGELES class submarines brings COTS functionality and supportability to the submarine external communications system. The CSRR Program supports LOS ANGELES, SEAWOLF, VIRGINIA and OHIO (SSBN and SSGN) class submarines.</p> <p>CSRR modernization activities bring new capabilities, address new requirements, resolve End-of-Life (EOL) and obsolescence issues or correct known system deficiencies. The unit cost variance between the CSRR Increment 1 Version 3-6 is due to different capabilities/configurations. For example, CSRR Increment 1 Version 3 is a more complex upgrade to the CSRR suite. CSRR Increment 1 Version 4 is planned to address equipment obsolescence and EOL issues. CSRR Increment 1 Version 5 will be another more complex modernization to the CSRR suite.</p> <p>The Undersea Platforms Special Communications program provides a fully integrated and tested Low Probability of Intercept / Low Probability of Detection (LPI/LPD) communications systems enabling command and control (C2) in an environment where traditional communications are not available, thereby reducing platform susceptibility of detection and attack by the adversary.</p> <p>The Link 16 program provides an enhanced submarine communication system by providing a two-way Tactical Data Link (TDL) processing capability on all Submarine (Nuclear) (SSN), Guided Missile Submarine (Nuclear) (SSGN) and Ballistic Missile Submarine (Nuclear) (SSBN) platforms. The Link 16 program provides submarine Command &amp; Control systems with Link 16 tactical network communications capabilities for situational awareness in a contested environment and is a key element in naval tactical networking. The new technology ensures the submarine's continued ability to participate in network-centric warfare and exploit its inherent stealth capabilities in support of the Navy, Nuclear Command, Control, and Communications (NC3), Joint, and allied/coalition fight to achieve total battlespace information dominance.</p>		



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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy								<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 12: Submarine Communications						<b>P-1 Line Item Number / Title:</b> 3130 / Submarine Communication Equipment				
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A			<b>Program Elements for Code B Items:</b> N/A			<b>Other Related Program Elements:</b> N/A				
<b>Line Item MDAP/MAIS Code:</b> N/A										
Exhibits Schedule					Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Submarine Communication Equipment				- / 209.054	- / 3.824	- / 4.225	- / 11.181	- / -	- / 11.181
P-40a	L0087 Submarine High Data Rate Antenna				- / 32.074	- / 6.071	- / 6.438	- / 0.144	- / 0.000	- / 0.144
P-40a	L0084 CSRR-SSGN (OHIO) Mod Upgrades				- / 31.948	- / 0.000	- / 1.052	- / 4.739	- / 0.000	- / 4.739
P-40a	L0084 CSRR-SSN (SEAWOLF)				- / 51.044	- / 0.000	- / 3.266	- / 3.240	- / 0.000	- / 3.240
P-3a	1 / L0080 OE-538/BRC Inc 2 (Individual Modification Program)				- / 6.869	- / 6.141	- / 12.426	- / 21.929	- / 0.000	- / 21.929
P-3a	3 / L0084 CSRR-SSBN (OHIO) (TBD)				- / 56.066	- / 9.729	- / 12.896	- / 14.432	- / 0.000	- / 14.432
P-3a	6 / L0084 CSRR-SSN (VIRGINIA) Mod Upgrades (TBD)				- / 44.801	- / 8.608	- / 9.704	- / 15.093	- / 0.000	- / 15.093
P-3a	7 / L0084 CSRR-SSN LOS ANGELES (LA) Mod Upgrades (TBD)				- / 145.395	- / 23.664	- / 14.522	- / 15.446	- / 0.000	- / 15.446
<b>P-40</b>	<b>Total Gross/Weapon System Cost</b>				<b>- / 577.251</b>	<b>- / 58.037</b>	<b>- / 64.529</b>	<b>- / 86.204</b>	<b>- / 0.000</b>	<b>- / 86.204</b>
<p>*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.</p> <p>Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.</p>										
<p><b>Justification:</b></p> <ul style="list-style-type: none"> <li>- FY18 Antenna Modifications: Procure and install multiple field change kits for legacy antenna equipment, applicable to all submarine classes, to address performance issues, improve reliability and maintainability, decrease vulnerability, and provide cost effective technology refresh.</li> <li>- FY18 Towed Buoy Antenna BRR-6/6B: Procure and install multiple field change kits to improve system performance (measured by operational availability) and reliability (measured by mean time between failures).</li> <li>- FY18 CSRR: Implements CSRR on LOS ANGELES class submarines and modernizes CSRR on OHIO (SSBN and SSGN), SEAWOLF and VIRGINIA platforms. Funding will support procurement and installation on Increment 1 Version 3, Increment 1 Version 4 and Low Probability of Intercept / Low Probability of Detection (LPI/LPD).</li> <li>- FY18 SubHDR: Radome procurement inventory requirement met in FY17</li> <li>- FY18 OE-538: Procure OE-538A upgrade kits to support submarine communications requirements: Mobile User Objective System (MUOS), Link-16 Tactical Data Link, and Iridium.</li> </ul>										

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy															Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 12							P-1 Line Item Number / Title: 3130 / Submarine Communication Equipment								Aggregated Items Title: Submarine Communication Equipment					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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) L0035 Antenna Modifications																				
1.1) Antenna Modifications <sup>(1)</sup>	A		148.447	150	22.267	-	-	-	-	-	-	29.608	120	3.553	-	-	-	29.608	120	3.553
Subtotal: 1) L0035 Antenna Modifications			-	-	22.267	-	-	-	-	-	-	-	-	3.553	-	-	-	-	-	3.553
2) CSRR - Support Systems Mod Kits (Increment 1 Ver 3, 4 & 5) <sup>(2)</sup>																				
2.1) Kit Quantity (Prior Years)	A		4,337.750	8	34.702	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.2) Equipment - Mod Kits Inc 1 Ver 3	A		1,904.500	4	7.618	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.3) Equipment - Mod Kits Inc 1 Ver 4 <sup>(3)</sup>	A		-	-	-	193.500	2	0.387	-	-	-	205.000	1	0.205	-	-	-	205.000	1	0.205
2.6) Equipment - MRTS	A		281.000	8	2.248	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.8) Equipment - LPI/ LPD Solution 1	A		-	-	-	-	-	-	-	-	-	200.143	7	1.401	-	-	-	200.143	7	1.401
2.10) Production Support	A		-	-	0.503	-	-	0.023	-	-	-	-	-	0.096	-	-	-	-	-	0.096
Subtotal: 2) CSRR - Support Systems Mod Kits (Increment 1 Ver 3, 4 & 5)			-	-	45.071	-	-	0.410	-	-	-	-	-	1.702	-	-	-	-	-	1.702
3) L0099 Towed Buoy Antenna BRR-6/6B Reliability Improvements <sup>(4)</sup>																				
3.1) Reliability Improvements <sup>(5)</sup>	A		41.826	69	2.886	55.780	41	2.287	31.530	134	4.225	31.521	188	5.926	-	-	-	31.521	188	5.926
Subtotal: 3) L0099 Towed Buoy Antenna BRR-6/6B Reliability Improvements			-	-	2.886	-	-	2.287	-	-	4.225	-	-	5.926	-	-	-	-	-	5.926
4) L0097 Submarine Local Area Network (SUBLAN) <sup>(6)</sup>																				
4.1) Hardware	A		280.661	274	76.901	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.2) Installation of Hardware	A		-	-	52.413	-	-	1.074	-	-	-	-	-	-	-	-	-	-	-	-
4.3) Production Support	A		-	-	8.704	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.4) DSA	A		-	-	0.812	-	-	0.053	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 4) L0097 Submarine Local Area Network (SUBLAN)			-	-	138.830	-	-	1.127	-	-	-	-	-	-	-	-	-	-	-	-
Total			-	-	209.054	-	-	3.824	-	-	4.225	-	-	11.181	-	-	-	-	-	11.181
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
Footnotes:																				

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<b>Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy</b>		<b>Date: May 2017</b>
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 12	<b>P-1 Line Item Number / Title:</b> 3130 / Submarine Communication Equipment	<b>Aggregated Items Title:</b> Submarine Communication Equipment
<p>(1) Antenna Modifications provide for the procurement and installation of field change kits of legacy antenna equipment (OE-315, AN/BRA-24, AN/BRA-6B, BRT-1/1A). These modifications address performance issues, improve reliability and maintainability, decrease vulnerability, and provide cost effective technology refresh. FY18 will procure; qty. 20 Advanced Buoyant Cable Antennas (ABCA), qty. 50 Vertical Buoyant Cable Antennas (VBCA), and qty. 50 JHU/APL Amplifiers. Procurement and Installation unit costs vary due to procuring and installing different components each fiscal year.</p> <p>(2) CSRR Support Systems Modernization Kits provide for the procurement and installation of CSRR baseline modernization reconfigurable lab assets to improve system performance and reliability and vary by Increment, Version, and Platform. CSRR modernization activities bring new capabilities, address new requirements, resolve End-of-Life (EOL) and obsolescence issues or correct known system deficiencies. The unit cost variance between the CSRR Increment 1 Version 3-6 is due to different capabilities/configurations. For example, CSRR Increment 1 Version 3 is a more complex upgrade to the CSRR suite. CSRR Increment 1 Version 4 is planned to address equipment obsolescence and EOL issues. CSRR Increment 1 Version 5 will be another more complex modernization to the CSRR suite. FY18 includes procurement of one CSRR Increment 1 Version 4 modernization reconfigurable lab asset.</p> <p>(3) The unit cost for the lab asset in FY18 increased above inflation due to the reduction in procurement quantity (procurement of two (2) labs in FY16 versus one (1) lab in FY18) and the requirement for a new contract to be awarded.</p> <p>(4) The Towed Buoy Antenna BRR-6/6B Reliability Improvements provide for the procurement and installation of field change kits of the Towed Buoy Antenna BRR-6/6B to improve system performance and reliability. Procurement and Installation unit costs vary due to procuring and installing different components each fiscal year. FY17 procured; qty 44 Antenna/Amplifiers, qty 45 Tow Cables, and qty 45 Tow Cable Boxes. FY18 will procure qty 56 Antenna/Amplifiers, qty 66 Tow Cables, and qty 66 Tow Cable Boxes. Production lead time varies from component to component. The antenna procurements vary due to different components required for modernization.</p> <p>(5) The BRR-6 program does not follow a traditional acquisition life cycle. Procurement and installation unit costs vary due to the phased approach as prescribed in the AN/BRR-6/6B Towed Buoy Antenna Lean Event Final Report of 30 September 2011 for procuring and installing different components each fiscal year in order to meet platform installation availabilities without degrading SSBN operational readiness. FY16 procured 41 reliability improvements (34 Full Production Seated Switches, 2 Antenna/Amplifiers, and 5 Multi-Reconfigurable Training Systems (MRTS) modules) and the antenna/amplifiers unit cost was \$153K which elevated the average unit cost. FY18 will procure 134 reliability improvements ( 56 Antenna/Amplifiers, 66 Tow Cable Boxes, and 66 Tow Cables) and 122 tow cables has an average unit cost of \$40K, causing a unit cost decrease of \$24.26 from FY 16. The unit cost fluctuation is based on procurement of completely different items and associated costs each fiscal year and is not related to inflation or prior year unit cost. Installation costs included in procurement (turnkey).</p> <p>(6) Installation of SubLAN Personal Computers (PC's) and Engine Room Drop Augment (ERDA).</p>		

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<b>Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy</b>																<b>Date:</b> May 2017			
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 12								<b>P-1 Line Item Number / Title:</b> 3130 / Submarine Communication Equipment								<b>Aggregated Items Title:</b> L0087 Submarine High Data Rate Antenna			

Item Number / Title [DODIC]	ID CD	MDAP/ MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring																				
Replacement Radomes Installed -- Procurement <sup>(7)</sup>	A		242.520	75	18.189	297.278	18	5.351	326.667	9	2.940	-	-	-	-	-	-	-	-	-
Replacement Radomes Installed -- Installation	A		-	-	0.839	-	-	0.256	-	-	0.288	-	-	0.144	-	-	-	-	-	0.144
Replacement Radomes Not Installed <sup>(8)</sup>	A		-	-	-	-	-	-	285.000	10	2.850	-	-	-	-	-	-	-	-	-
Subtotal: B Kits/Recurring			-	-	19.028	-	-	5.607	-	-	6.078	-	-	0.144	-	-	-	-	-	0.144
Support Cost																				
Production Support	A		-	-	6.807	-	-	0.284	-	-	0.190	-	-	-	-	-	-	-	-	-
Other (DSA)	A		-	-	6.239	-	-	0.180	-	-	0.170	-	-	-	-	-	-	-	-	-
Subtotal: Support Cost			-	-	13.046	-	-	0.464	-	-	0.360	-	-	-	-	-	-	-	-	-
Total			-	-	32.074	-	-	6.071	-	-	6.438	-	-	0.144	-	-	0.000	-	-	0.144

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

**Remarks:**

Type Modification: Individual Modification Program

Procurement and Installation of Submarine High Data Rate Antenna (SubHDR)

**Footnotes:**

<sup>(7)</sup> Only 102 of 112 Radome kits require installation. The remaining 10 are used for the Ready For issue (RFI) rotatable pool.

<sup>(8)</sup> Funding made available by OE-538 program cost savings was used to complete the Radome Kit procurement in FY17.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy															Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 12						P-1 Line Item Number / Title: 3130 / Submarine Communication Equipment						Aggregated Items Title: L0084 CSRR-SSGN (OHIO) Mod Upgrades								
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring																				
Equipment - Mod Kits (Prior Years) -- Procurement	A		1,144.333	12	13.732	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Equipment - Mod Kits (Prior Years) -- Installation	A		-	-	7.384	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Equipment - LPI/ LPD Solution 1 -- Procurement	A		-	-	-	-	-	-	-	-	-	192.000	2	0.384	-	-	-	192.000	2	0.384
Equipment - LPI/ LPD Solution 1 -- Installation	A		-	-	-	-	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: B Kits/Recurring			-	-	21.116	-	-	-	-	-	-	-	-	0.384	-	-	-	-	-	0.384
Support Cost																				
Enterprise Change Request/Nonrecurring (9)	A		-	-	2.793	-	-	-	-	-	-	-	-	1.117	-	-	-	-	-	1.117
ShipALT/DSA Nonrecurring (10)	A		-	-	1.621	-	-	-	-	-	0.522	-	-	2.626	-	-	-	-	-	2.626
Data/Logistics (11)	A		-	-	3.617	-	-	-	-	-	0.530	-	-	0.589	-	-	-	-	-	0.589
Production Support	A		-	-	1.242	-	-	-	-	-	-	-	-	0.023	-	-	-	-	-	0.023
Other (DSA Recurring)	A		-	-	1.559	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Support Cost			-	-	10.832	-	-	-	-	-	1.052	-	-	4.355	-	-	-	-	-	4.355
Total			-	-	31.948	-	-	0.000	-	-	1.052	-	-	4.739	-	-	0.000	-	-	4.739
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
Remarks: Procurement and Installation of CSRR and upgrades on SSGN (OHIO) Class Submarines																				
Footnotes: (9) The Enterprise Change Request (ECR) is a configuration control process rigorously implemented for the approval of new CSRR baselines or for changes to C4I systems produced by other Component Programs of Record (PORs) that impact the CSRR baseline. These changes to other Component PORs frequently occur outside of a planned CSRR modernization and therefore, funding for these changes is required every fiscal year in order to speed the delivery of critical capabilities to the submarine force. (10) Funding supports development and planning of ShipALT design package, work element descriptions and design/GFI changes. The ShipALT design package is required the year prior to procurement because it is due to the planning yard 12 months prior to install. It is also required the year that the first modernization kit or LPI/LPD solution is procured for each CSRR version on each Class to meet ship construction deadlines. (11) Funds the initial logistics package, consisting of multiple individual products, for each modernization baseline (version). The logistics package is funded in the year prior to and the year that the first modernization kit or LPI/LPD solution is procured for each CSRR version on each submarine class.																				

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy															Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 12							P-1 Line Item Number / Title: 3130 / Submarine Communication Equipment							Aggregated Items Title: L0084 CSRR-SSN (SEAWOLF)						
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring																				
Equipment (Prior Years) -- Procurement	A		3,215.000	10	32.150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Equipment (Prior Years) -- Installation	A		-	-	9.158	-	-	-	-	-	2.062	-	-	-	-	-	-	-	-	-
Equipment - LPI/ LPD Solution 1 -- Procurement	A		-	-	-	-	-	-	-	-	-	96.000	1	0.096	-	-	-	96.000	1	0.096
Equipment - LPI/ LPD Solution 1 -- Installation	A		-	-	-	-	-	-	-	-	-	-	-	0.115	-	-	-	-	-	0.115
Subtotal: B Kits/Recurring			-	-	41.308	-	-	-	-	-	2.062	-	-	0.211	-	-	-	-	-	0.211
Support Cost																				
ShipALT/DSA Nonrecurring <sup>(12)</sup>	A		-	-	1.563	-	-	-	-	-	0.425	-	-	1.238	-	-	-	-	-	1.238
Enterprise Change Request / Nonrecurring <sup>(13)</sup>	A		-	-	2.117	-	-	-	-	-	-	-	-	1.188	-	-	-	-	-	1.188
Data/Logistics <sup>(14)</sup>	A		-	-	1.825	-	-	-	-	-	0.514	-	-	0.576	-	-	-	-	-	0.576
Production Support	A		-	-	1.704	-	-	-	-	-	-	-	-	0.006	-	-	-	-	-	0.006
Other (DSA Recurring)	A		-	-	2.527	-	-	-	-	-	0.265	-	-	0.021	-	-	-	-	-	0.021
Subtotal: Support Cost			-	-	9.736	-	-	-	-	-	1.204	-	-	3.029	-	-	-	-	-	3.029
Total			-	-	51.044	-	-	0.000	-	-	3.266	-	-	3.240	-	-	0.000	-	-	3.240
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
Remarks: Procurement and Installation of CSRR and upgrades on SSN (SEAWOLF) Class Submarines.																				
Footnotes: <sup>(12)</sup> Funding supports development and planning of ShipALT design package, work element descriptions and design/GFI changes. The ShipALT design package is required the year prior to procurement because it is due to the planning yard 12 months prior to install. It is also required the year that the first modernization kit or LPD/LPD solution is procured for each CSRR version on each Class to meet ship construction deadlines. <sup>(13)</sup> The Enterprise Change Request (ECR) is a configuration control process rigorously implemented for the approval of new CSRR baselines or for changes to C4I systems produced by other Component Programs of Record (PORs) that impact the CSRR baseline. These changes to other Component PORs frequently occur outside of a planned CSRR modernization and therefore, funding for these changes is required every fiscal year in order to speed the delivery of critical capabilities to the submarine force. <sup>(14)</sup> Funds the initial logistics package, consisting of multiple individual products, for each modernization baseline (version). The logistics package is funded in the year prior to and the year that the first modernization kit or LPI/LPD solution is procured for each CSRR version on each submarine class.																				

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Exhibit P-3a, Individual Modification: FY 2018 Navy					Date: May 2017		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 12		P-1 Line Item Number / Title: 3130 / Submarine Communication Equipment			Modification Number / Title: 1 / L0080 OE-538/BRC Inc 2		
ID Code (A=Service Ready, B=Not Service Ready) :				MDAP/MAIS Code:			
Resource Summary		Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Procurement Quantity (Units in Each)		-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)		6.869	6.141	12.426	21.929	0.000	21.929
Less PY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)		6.869	6.141	12.426	21.929	0.000	21.929
Plus CY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)		6.869	6.141	12.426	21.929	0.000	21.929
(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:**

Procurement and Installation of OUTBOARD ELECTRONICS (OE)-538 & OE-592 ANTENNA GROUP (OE-538)

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 12			<b>P-1 Line Item Number / Title:</b> 3130 / Submarine Communication Equipment		<b>Modification Number / Title:</b> 1 / L0080 OE-538/BRC Inc 2	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Models of Systems Affected:</b> [No Model Specified]		<b>Modification Type:</b> Individual Modification Program		<b>Related RDT&amp;E PEs:</b> 0604503N		
<b>Financial Plan</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
<b>Procurement</b>						
<b>Modification Item 1 of 1:</b> L0080 OE-538/BRC Inc 2						
B Kits						
Recurring						
1.1.1) Equipment - OE-538A Antenna Upgrade Kits Installed - NonOrganic <sup>(15)</sup>	2 / 1.905	2 / 2.110	7 / 9.068	22 / 14.211	- / -	22 / 14.211
1.1.2) Equipment - OE-538A Antenna Upgrade Kits Not Installed - Organic	4 / 3.810	3 / 3.164	- / -	- / -	- / -	- / -
1.1.3) Equipment - OE-538A RFDACS Upgrade Kits Installed - NonOrganic	- / -	- / -	2 / 0.977	8 / 4.014	- / -	8 / 4.014
1.1.4) Equipment - OE-538A RFDACS Upgrade Kits Not Installed - Organic <sup>(16)</sup>	- / -	- / -	1 / 0.489	- / -	- / -	- / -
<b>Subtotal: Recurring</b>	- / 5.715	- / 5.274	- / 10.534	- / 18.225	- / -	- / 18.225
<b>Subtotal: L0080 OE-538/BRC Inc 2</b>	6 / 5.715	5 / 5.274	10 / 10.534	30 / 18.225	- / -	30 / 18.225
<b>Subtotal: Procurement, All Modification Items</b>	- / 5.715	- / 5.274	- / 10.534	- / 18.225	- / -	- / 18.225
<b>Support (All Modification Items)</b>						
2.1) Production Support	- / 0.454	- / 0.360	- / 0.632	- / 1.093	- / -	- / 1.093
2.2) Other (DSA) <sup>(17)</sup>	- / -	- / 0.080	- / 0.123	- / 0.292	- / -	- / 0.292
2.3) Support Prior Years	- / 0.700	- / -	- / -	- / -	- / -	- / -
<b>Subtotal: Support</b>	- / 1.154	- / 0.440	- / 0.755	- / 1.385	- / -	- / 1.385
<b>Installation</b>						
<b>Modification Item 1 of 1:</b> L0080 OE-538/BRC Inc 2	- / 0.000	- / 0.427	- / 1.137	- / 2.319	- / 0.000	- / 2.319
<b>Subtotal: Installation</b>	- / 0.000	- / 0.427	- / 1.137	- / 2.319	- / -	- / 2.319
<b>Total</b>						
<b>Total Cost (Procurement + Support + Installation)</b>	<b>6.869</b>	<b>6.141</b>	<b>12.426</b>	<b>21.929</b>	<b>0.000</b>	<b>21.929</b>



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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy							<b>Date:</b> May 2017							
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 12					<b>P-1 Line Item Number / Title:</b> 3130 / Submarine Communication Equipment					<b>Modification Number / Title:</b> 1 / L0080 OE-538/BRC Inc 2				
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :							<b>MDAP/MAIS Code:</b>							
<b>Modification Item 1 of 1:</b> L0080 OE-538/BRC Inc 2														
<b>Manufacturer Information</b>														
Manufacturer Name: Submarine Antenna Joint Venture							Manufacturer Location: Marion, MA & Manchester, NH							
Administrative Leadtime <i>(in Months)</i> : 5							Production Leadtime <i>(in Months)</i> : 12							
<b>Dates</b>		<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>				
Contract Dates		Jul 2016				May 2017				Mar 2018				
Delivery Dates		Jul 2017				May 2018				Mar 2019				
<b>Installation Information</b>														
<b>Method of Implementation:</b> Method:: Installation Name: OE-538														
<b>Installation Cost</b>		<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>		
		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>		Qty <i>(Each)</i> / Total Cost <i>(\$ M)</i>		
Prior Years		- / -		2 / 0.427		- / -		- / -		- / -		- / -		
FY 2016		- / -		- / -		2 / 1.137		- / -		- / -		- / -		
FY 2017		- / -		- / -		- / -		9 / 2.319		0 / 0.000		9 / 2.319		
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -		
Total		- / -		2 / 0.427		2 / 1.137		9 / 2.319		0 / 0.000		9 / 2.319		
<b>Installation Schedule</b>														
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>				
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	
In	-	-	-	-	-	2	-	-	2	-	-	3	4	
Out	-	-	-	-	-	2	-	-	2	-	-	3	4	
<b>Footnotes:</b> <sup>(15)</sup> OE-538A, OE-538B, and RFDACS unit cost varies by submarine class and economic quantity order. The changes in quantities are due to changes in ship availabilities based on the updated fielding plans. PB17 budget combined OE-538 antennas and the Radio Frequency Distribution and Control System (RFDACS) kits. The PB18 budget breaks out the OE-538A, OE-538B and the RFDACS kits. Additionally, items installed and not installed are broken out to provide clarity. <sup>(16)</sup> One (1) RFDACS does not require installation funding as it will be used as a swing set for SSBN installations. <sup>(17)</sup> DSA costs are directly related to number of installations. The DSA in FY17 increased in FY18 because the number of installs in FY17 (4) increased in FY18 (7).														

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Exhibit P-3a, Individual Modification: FY 2018 Navy					Date: May 2017		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 12		P-1 Line Item Number / Title: 3130 / Submarine Communication Equipment			Modification Number / Title: 3 / L0084 CSRR-SSBN (OHIO)		
ID Code (A=Service Ready, B=Not Service Ready) :				MDAP/MAIS Code:			
Resource Summary		Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Procurement Quantity (Units in Each)		-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)		56.066	9.729	12.896	14.432	0.000	14.432
Less PY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)		56.066	9.729	12.896	14.432	0.000	14.432
Plus CY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)		56.066	9.729	12.896	14.432	0.000	14.432
(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:**

Procurement and Installation of CSRR upgrades on SSBN (OHIO) Class submarines.

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Exhibit P-3a, Individual Modification: FY 2018 Navy					Date: May 2017	
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 12		P-1 Line Item Number / Title: 3130 / Submarine Communication Equipment			Modification Number / Title: 3 / L0084 CSRR-SSBN (OHIO)	
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: 0604503N	
Financial Plan	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
	Qty (Each) / Total Cost (\$ M)	Qty (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: L0084 CSRR-SSBN (OHIO)						
B Kits						
Recurring						
1.1.1) Equipment - Mod Kits Increment 1 Ver 3 - NonOrganic <sup>(18)</sup>	8 / 15.708	2 / 4.257	4 / 8.770	- / -	- / -	- / -
1.1.2) Equipment - Mod Kits Increment 1 Ver 4 - NonOrganic <sup>(19)</sup>	- / -	- / -	- / -	3 / 0.795	- / -	3 / 0.795
1.1.4) Equipment - LPI/LPD Solution 1 - NonOrganic	- / -	- / -	- / -	12 / 1.152	- / -	12 / 1.152
Subtotal: Recurring	- / 15.708	- / 4.257	- / 8.770	- / 1.947	- / -	- / 1.947
Subtotal: L0084 CSRR-SSBN (OHIO)	8 / 15.708	2 / 4.257	4 / 8.770	15 / 1.947	- / -	15 / 1.947
Subtotal: Procurement, All Modification Items	- / 15.708	- / 4.257	- / 8.770	- / 1.947	- / -	- / 1.947
Support (All Modification Items)						
2.1) ShipALT/DSA Nonrecurring <sup>(20)</sup>	- / 4.562	- / 0.450	- / 0.450	- / 1.325	- / -	- / 1.325
2.2) Enterprise Change Request <sup>(21)</sup>	- / 5.385	- / 0.625	- / 0.531	- / 1.137	- / -	- / 1.137
2.3) Data/Logistics <sup>(22)</sup>	- / 4.951	- / 0.624	- / 0.624	- / 0.507	- / -	- / 0.507
2.4) Production Support	- / 10.876	- / 0.249	- / 0.511	- / 0.117	- / -	- / 0.117
2.5) Other (DSA Recurring)	- / 7.142	- / 0.484	- / 0.445	- / 0.762	- / -	- / 0.762
Subtotal: Support	- / 32.916	- / 2.432	- / 2.561	- / 3.848	- / -	- / 3.848
Installation						
Modification Item 1 of 1: L0084 CSRR-SSBN (OHIO)	- / 7.442	- / 3.040	- / 1.565	- / 8.637	- / 0.000	- / 8.637
Subtotal: Installation	- / 7.442	- / 3.040	- / 1.565	- / 8.637	- / -	- / 8.637
Total						
Total Cost (Procurement + Support + Installation)	56.066	9.729	12.896	14.432	0.000	14.432

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy						<b>Date:</b> May 2017							
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 12				<b>P-1 Line Item Number / Title:</b> 3130 / Submarine Communication Equipment		<b>Modification Number / Title:</b> 3 / L0084 CSRR-SSBN (OHIO)							
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :					<b>MDAP/MAIS Code:</b>								
<b>Modification Item 1 of 1:</b> L0084 CSRR-SSBN (OHIO)													
<b>Manufacturer Information</b>													
Manufacturer Name: SAIC <sup>(23)</sup>					Manufacturer Location: Charleston, SC								
Administrative Leadtime <i>(in Months)</i> : 3					Production Leadtime <i>(in Months)</i> : 9								
<b>Dates</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018</b>							
Contract Dates		Feb 2016		Apr 2017		Jan 2018							
Delivery Dates		Feb 2017		Apr 2018		Oct 2018							
<b>Installation Information</b>													
<b>Method of Implementation:</b> [none specified]:: Installation Name: SSBN Ohio													
<b>Installation Cost</b>	<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>						
	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	5 / 7.442		2 / 3.040		1 / 1.565		- / -						
FY 2016	- / -		- / -		- / -		2 / 3.224						
FY 2017	- / -		- / -		- / -		3 / 4.838						
FY 2018	- / -		- / -		- / -		5 / 0.575						
Total	5 / 7.442		2 / 3.040		1 / 1.565		10 / 8.637						
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	2	-	2	1	-	1	1	-	1	-	2	-	3
Out	2	-	2	-	1	1	1	-	1	-	2	-	3
<b>Footnotes:</b>													
<sup>(18)</sup> Quantities reflect alignment with fleet installation availabilities. Submarine availability windows fluctuate to optimize SSBN Operational Availability (Ao). The number and class of submarines available in any given year are very limited and, consequently, the ability to shift installations from one submarine to another is often not possible. Installation funds are required by the installing activity 3 months prior to the start of the installation. The following installations were impacted by Fleet rescheduling of availabilities: Three CSRR Inc1V3 modernization kits procured in FY14 will not install until FY16. Three CSRR Inc1V3 modernization kits procured in FY15 will not install until FY17. Three CSRR Inc1V3 procurements in FY17 will not install until Q4 FY18 and one in Q2 FY19.													
<sup>(19)</sup> CSRR modernization activities bring new capabilities, address new requirements, resolve End-of-Life (EOL) and obsolescence issues or correct known system deficiencies. The unit cost variance between the CSRR Increment 1 Version 3-5 is due to different capabilities/configurations. For example, CSRR Increment 1 Version 3 is a more complex upgrade to the CSRR suite. CSRR Increment 1 Version 4 is planned as a minor upgrade to address equipment obsolescence and EOL issues. CSRR Increment 1 Version 5 will be another more complex modernization to the CSRR suite. FY18 includes procurement of three CSRR Increment 1 Version 4 modernization kits.													
<sup>(20)</sup> Funding supports development of Government Furnished Information (GFI) package for the planning yard in the year prior to installation and preparation of ship installation drawings in the year of installation.													

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 12	<b>P-1 Line Item Number / Title:</b> 3130 / Submarine Communication Equipment	<b>Modification Number / Title:</b> 3 / L0084 CSRR-SSBN (OHIO)
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :		<b>MDAP/MAIS Code:</b>
<p><sup>(21)</sup> The Enterprise Change Request (ECR) is a configuration control process rigorously implemented for the approval of new CSRR baselines or for changes to C4I systems produced by other Component Programs of Record (PORs) that impact the CSRR baseline. These changes to other Component PORs frequently occur outside of a planned CSRR modernization and therefore, funding for these changes is required every fiscal year in order to speed the delivery of critical capabilities to the submarine force.</p> <p><sup>(22)</sup> Funds the initial logistics package, consisting of multiple individual products, for each modernization baseline (version). The logistics package is funded in the year prior to and the year that the first modernization kit is procured for each CSRR version on each submarine class.</p> <p><sup>(23)</sup> Production lead time for upgrade kits varies from 3 to 12 months depending on the contents of each kit and the specific components being modernized.</p>		

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 12		<b>P-1 Line Item Number / Title:</b> 3130 / Submarine Communication Equipment			<b>Modification Number / Title:</b> 6 / L0084 CSRR-SSN (VIRGINIA) Mod Upgrades	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	44.801	8.608	9.704	15.093	0.000	15.093
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	44.801	8.608	9.704	15.093	0.000	15.093
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
<b>Total Obligation Authority</b> <i>(\$ in Millions)</i>	<b>44.801</b>	<b>8.608</b>	<b>9.704</b>	<b>15.093</b>	<b>0.000</b>	<b>15.093</b>
<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>	-	-	-	-	-	-
<b>Description:</b> Procurement and Installation of CSRR upgrades on VIRGINIA Class submarines						

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Exhibit P-3a, Individual Modification: FY 2018 Navy				Date: May 2017		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 12		P-1 Line Item Number / Title: 3130 / Submarine Communication Equipment		Modification Number / Title: 6 / L0084 CSRR-SSN (VIRGINIA) Mod 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: 0604503N		
Financial Plan	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
	Qty (Each) / Total Cost (\$ M)	Qty (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: L0084 CSRR-SSN (VIRGINIA) Mod Upgrades						
B Kits						
Recurring						
1.1.1) Equipment - Mod Kits (Prior Years) - NonOrganic		4 / 4.872	- / -	- / -	- / -	- / -
1.1.2) Equipment - Baseline upgrade Increment 1 Ver 3 - NonOrganic		6 / 14.002	1 / 2.595	2 / 5.346	1 / 2.753	- / -
1.1.3) Equipment - Mod Kits Increment 1 Ver 4 - NonOrganic <sup>(24)</sup>		- / -	- / -	1 / 0.258	- / -	- / -
1.1.5) Equipment - LPI/LPD Solution 1 - NonOrganic		- / -	- / -	- / -	13 / 1.248	- / -
Subtotal: Recurring		- / 18.874	- / 2.595	- / 5.604	- / 4.001	- / 4.001
Subtotal: L0084 CSRR-SSN (VIRGINIA) Mod Upgrades		10 / 18.874	1 / 2.595	3 / 5.604	14 / 4.001	- / -
Subtotal: Procurement, All Modification Items		- / 18.874	- / 2.595	- / 5.604	- / 4.001	- / 4.001
Support (All Modification Items)						
2.1) Support Cost (Prior Years)		- / 0.625	- / -	- / -	- / -	- / -
2.2) Data/Logistics <sup>(25)</sup>		- / 1.984	- / 0.450	- / 0.440	- / 1.032	- / 1.032
2.3) ShipALT/DSA Nonrecurring <sup>(26)</sup>		- / 3.630	- / 0.350	- / 0.347	- / 1.993	- / 1.993
2.4) Enterprise Change Request <sup>(27)</sup>		- / 2.612	- / 0.414	- / 0.478	- / 2.111	- / 2.111
2.5) Production Support		- / 2.323	- / 0.153	- / 0.336	- / 0.240	- / 0.240
2.6) Other (DSA Recurring)		- / 1.626	- / 0.275	- / 0.248	- / 0.419	- / 0.419
Subtotal: Support		- / 12.800	- / 1.642	- / 1.849	- / 5.795	- / 5.795
Installation						
Modification Item 1 of 1: L0084 CSRR-SSN (VIRGINIA) Mod Upgrades		- / 13.127	- / 4.371	- / 2.251	- / 5.297	- / 0.000
Subtotal: Installation		- / 13.127	- / 4.371	- / 2.251	- / 5.297	- / 5.297
Total						
Total Cost (Procurement + Support + Installation)		44.801	8.608	9.704	15.093	0.000

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy						<b>Date:</b> May 2017							
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 12				<b>P-1 Line Item Number / Title:</b> 3130 / Submarine Communication Equipment				<b>Modification Number / Title:</b> 6 / L0084 CSRR-SSN (VIRGINIA) Mod Upgrades					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :						<b>MDAP/MAIS Code:</b>							
<b>Modification Item 1 of 1:</b> L0084 CSRR-SSN (VIRGINIA) Mod Upgrades													
<b>Manufacturer Information</b>													
Manufacturer Name: SAIC <sup>(28)</sup>						Manufacturer Location: Charleston, SC							
Administrative Leadtime <i>(in Months)</i> : 3						Production Leadtime <i>(in Months)</i> : 6							
<b>Dates</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018</b>							
Contract Dates		Feb 2016		Jan 2017		Jan 2018							
Delivery Dates		Feb 2017		Jan 2018		Jul 2018							
<b>Installation Information</b>													
<b>Method of Implementation:</b> Method:: Installation Name: Virginia Class													
<b>Installation Cost</b>	<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>		
	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	8 / 13.127		2 / 4.371		- / -		- / -		- / -		- / -		
FY 2016	- / -		- / -		1 / 2.251		- / -		- / -		- / -		
FY 2017	- / -		- / -		- / -		3 / 4.952		0 / 0.000		3 / 4.952		
FY 2018	- / -		- / -		- / -		3 / 0.345		0 / 0.000		3 / 0.345		
Total	8 / 13.127		2 / 4.371		1 / 2.251		6 / 5.297		0 / 0.000		6 / 5.297		
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	8	-	-	-	-	1	1	-	1	-	-	2	2
Out	8	-	-	-	-	1	-	1	-	1	-	1	2
<b>Footnotes:</b>													
<sup>(24)</sup> Quantities reflect alignment with fleet installation availabilities. The number and class of submarines available in any given year are very limited and consequently, the ability to shift installations from one submarine to another is often not possible. Installation funds are required by the installing activity 3 months prior to the start of the installation. CSRR modernization activities bring new capabilities, address new requirements, resolve End-of-Life (EOL) and obsolescence issues or correct known system deficiencies. The unit cost variance between the CSRR Increment 1 Version 3-5 is due to different capabilities/configurations. For example, CSRR Increment 1 Version 3 is a more complex upgrade to the CSRR suite. CSRR Increment 1 Version 4 is planned to address equipment obsolescence and EOL issues. CSRR Increment 1 Version 5 will be another more complex modernization to the CSRR suite.													
<sup>(25)</sup> Funds the initial logistics package, consisting of multiple individual products, for each modernization baseline (version). The logistics package is funded in the year prior to and the year that the first modernization kit is procured for each CSRR version on each submarine class.													
<sup>(26)</sup> Funding supports development of Government Furnished Information (GFI) package for the planning yard in the year prior to installation and preparation of ship installation drawings in the year of installation.													



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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 12	<b>P-1 Line Item Number / Title:</b> 3130 / Submarine Communication Equipment	<b>Modification Number / Title:</b> 6 / L0084 CSRR-SSN (VIRGINIA) Mod Upgrades
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :		<b>MDAP/MAIS Code:</b>
<p><sup>(27)</sup> The Enterprise Change Request (ECR) is a configuration control process rigorously implemented for the approval of new CSRR baselines or for changes to C4I systems produced by other Component Programs of Record (PORs) that impact the CSRR baseline. These changes to other Component PORs frequently occur outside of a planned CSRR modernization and therefore, funding for these changes is required every fiscal year in order to speed the delivery of critical capabilities to the submarine force.</p> <p><sup>(28)</sup> Production lead time for upgrade kits varies from 3 to 12 months depending on the contents of each kit and the specific components being modernized.</p>		

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 12		<b>P-1 Line Item Number / Title:</b> 3130 / Submarine Communication Equipment			<b>Modification Number / Title:</b> 7 / L0084 CSRR-SSN LOS ANGELES (LA) Mod Upgrades	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	145.395	23.664	14.522	15.446	0.000	15.446
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	145.395	23.664	14.522	15.446	0.000	15.446
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
<b>Total Obligation Authority</b> <i>(\$ in Millions)</i>	<b>145.395</b>	<b>23.664</b>	<b>14.522</b>	<b>15.446</b>	<b>0.000</b>	<b>15.446</b>
<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>	-	-	-	-	-	-
<b>Description:</b> Procurement and Installation of CSRR and upgrades on LOS ANGELES Class Submarines						

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Exhibit P-3a, Individual Modification: FY 2018 Navy				Date: May 2017		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 12		P-1 Line Item Number / Title: 3130 / Submarine Communication Equipment		Modification Number / Title: 7 / L0084 CSRR-SSN LOS ANGELES (LA) Mod 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: 0604503N		
Financial Plan	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
	Qty (Each) / Total Cost (\$ M)	Qty (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: L0084 CSRR-SSN LOS ANGELES (LA) Mod Upgrades						
B Kits						
Recurring						
1.1.1) Equipment - Mod Kits Increment 1 Ver 3 - NonOrganic <sup>(29)</sup>	25 / 86.425	4 / 16.986	1 / 4.374	1 / 4.505	- / -	1 / 4.505
1.1.2) Equipment - Mod Kits Increment 1 Ver 4 - NonOrganic <sup>(30)</sup>	- / -	- / -	1 / 0.258	4 / 1.061	- / -	4 / 1.061
1.1.4) Equipment - LPI/LPD Solution 1 - NonOrganic	- / -	- / -	- / -	16 / 1.536	- / -	16 / 1.536
Subtotal: Recurring	- / 86.425	- / 16.986	- / 4.632	- / 7.102	- / -	- / 7.102
Subtotal: L0084 CSRR-SSN LOS ANGELES (LA) Mod Upgrades	25 / 86.425	4 / 16.986	2 / 4.632	21 / 7.102	- / -	21 / 7.102
Subtotal: Procurement, All Modification Items	- / 86.425	- / 16.986	- / 4.632	- / 7.102	- / -	- / 7.102
Support (All Modification Items)						
2.1) Enterprise Change Request/Nonrecurring <sup>(31)</sup>	- / 4.146	- / 1.303	- / 0.850	- / 2.405	- / -	- / 2.405
2.2) ShipALT/DSA Nonrecurring <sup>(32)</sup>	- / 1.441	- / 0.257	- / 0.372	- / 1.786	- / -	- / 1.786
2.3) Data/Logistics <sup>(33)</sup>	- / 2.000	- / 0.448	- / 0.552	- / 0.570	- / -	- / 0.570
2.4) Production Support	- / 6.014	- / 0.708	- / 0.257	- / 0.426	- / -	- / 0.426
2.5) Other (DSA Recurring) <sup>(34)</sup>	- / 8.028	- / 0.784	- / 0.913	- / 0.708	- / -	- / 0.708
Subtotal: Support	- / 21.629	- / 3.500	- / 2.944	- / 5.895	- / -	- / 5.895
Installation						
Modification Item 1 of 1: L0084 CSRR-SSN LOS ANGELES (LA) Mod Upgrades	- / 37.341	- / 3.178	- / 6.946	- / 2.449	- / 0.000	- / 2.449
Subtotal: Installation	- / 37.341	- / 3.178	- / 6.946	- / 2.449	- / -	- / 2.449
Total						
Total Cost (Procurement + Support + Installation)	145.395	23.664	14.522	15.446	0.000	15.446

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017								
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 12				<b>P-1 Line Item Number / Title:</b> 3130 / Submarine Communication Equipment				<b>Modification Number / Title:</b> 7 / L0084 CSRR-SSN LOS ANGELES (LA) Mod Upgrades					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :						<b>MDAP/MAIS Code:</b>							
<b>Modification Item 1 of 1:</b> L0084 CSRR-SSN LOS ANGELES (LA) Mod Upgrades													
<b>Manufacturer Information</b>													
Manufacturer Name: SAIC <sup>(35)</sup>						Manufacturer Location: Charleston, SC							
Administrative Leadtime <i>(in Months)</i> : 3						Production Leadtime <i>(in Months)</i> : 7							
<b>Dates</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018</b>							
Contract Dates		Dec 2015		Jan 2017		Jan 2018							
Delivery Dates		Dec 2016		Jan 2018		Aug 2018							
<b>Installation Information</b>													
<b>Method of Implementation:</b> Method:: Installation Name: LA Class													
<b>Installation Cost</b>	<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>		
	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	23 / 37.341		2 / 3.178		- / -		- / -		- / -		- / -		
FY 2016	- / -		- / -		4 / 6.946		- / -		- / -		- / -		
FY 2017	- / -		- / -		- / -		2 / 2.104		0 / 0.000		2 / 2.104		
FY 2018	- / -		- / -		- / -		3 / 0.345		0 / 0.000		3 / 0.345		
Total	23 / 37.341		2 / 3.178		4 / 6.946		5 / 2.449		0 / 0.000		5 / 2.449		
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	20	-	2	-	2	-	-	-	2	3	-	-	2
Out	19	1	-	2	-	2	-	-	-	2	3	-	2
<b>Footnotes:</b>													
<sup>(29)</sup> FY18 funding includes cost to procure two Radio Frequency Distribution and Control Systems (RFDACS) to support Legacy Ultra High Frequency (UHF) communications on LOS ANGELES Class platforms. Installation funds are required by the installing activity three months prior to the start of the installation. FY18 includes procurement of one CSRR Increment 1 Version 3 modernization kit.													
<sup>(30)</sup> Quantities reflect alignment with fleet installation availabilities. The number and class of submarines available in any given year are very limited and consequently, the ability to shift installations from one submarine to another is often not possible. Installation funds are required by the installing activity 3 months prior to the start of the installation. CSRR modernization activities bring new capabilities, address new requirements, resolve End-of-Life (EOL) and obsolescence issues or correct known system deficiencies. The unit cost variance between the CSRR Increment 1 Version 3-5 is due to different capabilities/configurations. For example, CSRR Increment 1 Version 3 is a more complex upgrade to the CSRR suite. CSRR Increment 1 Version 4 is planned to address equipment obsolescence and EOL issues. CSRR Increment 1 Version 5 will be another more complex modernization to the CSRR suite. FY18 includes procurement of four CSRR Increment 1 Version 4 modernization kits.													

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 12	<b>P-1 Line Item Number / Title:</b> 3130 / Submarine Communication Equipment	<b>Modification Number / Title:</b> 7 / L0084 CSRR-SSN LOS ANGELES (LA) Mod Upgrades
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :		<b>MDAP/MAIS Code:</b>
<p><sup>(31)</sup> The Enterprise Change Request (ECR) is a configuration control process rigorously implemented for the approval of new CSRR baselines or for changes to C4I systems produced by other Component Programs of Record (PORs) that impact the CSRR baseline. These changes to other Component PORs frequently occur outside of a planned CSRR modernization and therefore, funding for these changes is required every fiscal year in order to speed the delivery of critical capabilities to the submarine force.</p> <p><sup>(32)</sup> Funding supports development of Government Furnished Information (GFI) package for the planning yard in the year prior to installation and preparation of ship installation drawings in the year of installation.</p> <p><sup>(33)</sup> Funds the initial logistics package, consisting of multiple individual products, for each modernization baseline (version). The logistics package is funded in the year prior to and the year that the first modernization kit is procured for each CSRR version on each submarine class.</p> <p><sup>(34)</sup> DSA Recurring Cost includes funding for CSRR planning yard activities.</p> <p><sup>(35)</sup> Production lead time for upgrade kits varies from 3 to 12 months depending on the contents of each kit and the specific components being modernized.</p>		

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy										<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 13: Satellite Communications							<b>P-1 Line Item Number / Title:</b> 3215 / Satellite Communications Systems					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A				<b>Program Elements for Code B Items:</b> N/A				<b>Other Related Program Elements:</b> N/A				
<b>Line Item MDAP/MAIS Code:</b> 237												
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>To Complete</b>	<b>Total</b>
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	1,224.582	30.892	14.414	14.654	0.000	14.654	16.892	12.470	28.261	28.483	Continuing	Continuing
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	1,224.582	30.892	14.414	14.654	0.000	14.654	16.892	12.470	28.261	28.483	Continuing	Continuing
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>1,224.582</b>	<b>30.892</b>	<b>14.414</b>	<b>14.654</b>	<b>0.000</b>	<b>14.654</b>	<b>16.892</b>	<b>12.470</b>	<b>28.261</b>	<b>28.483</b>	<b>Continuing</b>	<b>Continuing</b>
<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> )	-	1.213	0.056	0.021	-	0.021	-	0.073	0.093	-	-	1.456
Flyaway Unit Cost ( <i>\$ in Thousands</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ( <i>\$ in Thousands</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<p><b>Description:</b></p> <p>The Satellite Communications (SATCOM) Systems P-1 line provides funds for procurement of shipboard terminal equipment for ship-to-ship, ship-to-shore and ship-to-aircraft tactical communications via earth orbiting relay satellites. This includes Radio Frequency (RF) equipment and baseband equipment assembled and grouped into systems and subsystems structured to address specific naval communications requirements. These systems provide modem processors and peripheral equipment that control the RF links for message traffic, direct data transfer and secure voice communications. They are selected and oriented by communications traffic levels, types of communications and operational missions. Technical refresh of system modems will directly support Assured Command and Control (C2) posture, SATCOM reliability, space resiliency via band diversity and redundancy.</p> <p>[P3A / (NR117) Global Broadcast Service (GBS)]: GLOBAL BROADCAST SERVICE (GBS - NR117): GBS is a Joint Military Satellite Communications (MILSATCOM) program with the Air Force as Executive Agent for all services. GBS provides a continuous, high speed, one way information flow of high volume data to units ashore, afloat or special operations. GBS supports routine operations, training and military exercises, special activities, crises, situational awareness, weapons targeting, reconnaissance and the transition to and conduct of opposed operations short of nuclear war. Deployment of GBS internet protocol (IP) terminals will allow expanded use of military intelligence collection in a broader spectrum using MILSATCOM architecture. The Navy GBS Split IP effort enables near-real-time duplex asymmetric communications connectivity to ships/subs. GBS plays a pivotal role in an Anti Access Area Denial (A2AD) scenario.</p> <p>[P3A - 2 / (NR112) Commercial Broadband Satellite program (CBSP) - Afloat]: The Navy's next generation Commercial Satellite Communications (SATCOM) program provides the only source of wideband SATCOM to Patrol Coastal (PCs) and Mine Countermeasure Ships (MCMs), diversity for MILSATCOM on Unit Level Variant (ULV) ships, and augments MILSATCOM on Force Level Variant (FLV) ships. CBSP will support the procurement and installation of a commercial terminal and service architecture that significantly increase data throughput, Navy Anti-Access Area Denial posture, and SATCOM reliability and space resiliency by providing band diversity, assured access, and redundancy for MILSATCOM. Included in the program are Small Ship Variant (SSV - Patrol Coastal or Mine Countermeasure Ships), Unit Level Variant (ULV - examples are Guided Missile Destroyers or Guided Missile Frigates), and Force Level Variant (FLV - large combatant ships such as carriers).</p> <p><b>Justification:</b></p> <p>FY 2018 continues the procurement and installation of Global Broadcast System (GBS) Afloat Receive Terminals as well as the procurement of GBS Turn Key Portable Receive Terminals. FY18 begins procurement and installation of modem technical refresh, and continues procurement of Force Level Variant (FLV) Commercial Broadband Satellite Program (CBSP) terminals.</p>												

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy										<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 13: Satellite Communications							<b>P-1 Line Item Number / Title:</b> 3216 / Navy Multiband Terminal (NMT)					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A				<b>Program Elements for Code B Items:</b> N/A				<b>Other Related Program Elements:</b> N/A				
<b>Line Item MDAP/MAIS Code:</b> 290												
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>To Complete</b>	<b>Total</b>
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	853.019	118.142	38.365	69.764	0.000	69.764	99.741	98.101	22.528	14.462	69.688	1,383.810
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	853.019	118.142	38.365	69.764	0.000	69.764	99.741	98.101	22.528	14.462	69.688	1,383.810
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>853.019</b>	<b>118.142</b>	<b>38.365</b>	<b>69.764</b>	<b>0.000</b>	<b>69.764</b>	<b>99.741</b>	<b>98.101</b>	<b>22.528</b>	<b>14.462</b>	<b>69.688</b>	<b>1,383.810</b>
<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> )	-	0.143	0.040	0.126	-	0.126	0.355	0.285	-	-	-	0.949
Flyaway Unit Cost ( <i>\$ in Thousands</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ( <i>\$ in Thousands</i> )	-	-	-	-	-	-	-	-	-	-	-	-

**Description:**

The Navy Multiband Terminal (NMT) System provides funds for procurement of ship, submarine, and shore protected and wideband Military Satellite Communications (MILSATCOM) terminals via earth orbiting relay satellites in the Super High Frequency, Ka, and Extremely High Frequency (EHF) bands. The NMT provides warfighters with the assured, jam resistant, secure SATCOM for message traffic, data transfer and secure voice communications. These procurements are scheduled to meet the satellite communications requirements established by the Chief of Naval Operations in the Fleet Communications Planning and Programming documents.

NAVY MULTIBAND TERMINAL (NMT - NS108): The NMT program is the next generation maritime military satellite communications terminal. The NMT Program is the required Navy component to the Advanced Extremely High Frequency (AEHF) Program for enhancing protected and survivable satellite communications to Naval forces. NMT multiband communication capabilities will communicate two way Ka-Band on Wideband Global SATCOM (WGS) and shipboard and submarine terminals to communicate with X-Band using the Defense Satellite Communications System and WGS. NMT is compatible with today's Navy Low Data Rate/Medium Data Rate terminals, X-Band terminals and will sustain the MILSATCOM architecture by providing connectivity across the spectrum of mission areas, to include land, air and naval warfare, special operations, strategic nuclear operations, strategic defense, theater missile defense, and space operations and intelligence. The NMT system will replenish and improve on the capabilities of both the Military Strategic and Tactical Relay System (MILSTAR) and WGS system by equipping the warfighters with the assured, jam resistant, secure communications as described in the Operational Requirements Document (Wideband Gapfiller System ORD, AFSPC ORD 004-99, May 3, 2000) for the joint AEHF Satellite Communications and WGS System.

The NMT protected system AN/WSC-9 V (Variant) is comprised of three configurations for ships, submarines and shore sites known as Communication Groups. Terminal Communication Groups will integrate protected and wideband signal processing to multiband Antenna Groups. The Antenna Groups align to the specific Terminal Variant for ship, submarine and shore platforms and provides the SATCOM capabilities known as Q/Ka and X/Ka assigned to platforms. NMT includes the Advanced Time Division Multiple Access (TDMA) Interface Processor (IP) and supports increased data transfers for the Automated Digital Network System (ADNS) router architecture supporting improved Quality of Service (QoS) capability, smaller form factor and easier integration into operational environments, further supporting network user access to protected MILSATCOM connectivity. Technical refresh of modems and the associated architectures will directly support Assured Command and Control (C2) posture, SATCOM reliability, space resiliency via band diversity and redundancy.

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy								<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 13: Satellite Communications						<b>P-1 Line Item Number / Title:</b> 3216 / Navy Multiband Terminal (NMT)				
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A			<b>Program Elements for Code B Items:</b> N/A			<b>Other Related Program Elements:</b> N/A				
<b>Line Item MDAP/MAIS Code:</b> 290										
Exhibits Schedule					Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 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	3216 Navy Multiband Terminal (NMT) - Ashore				- / 88.835	- / 8.635	- / 5.906	- / 5.738	- / 0.000	- / 5.738
P-40a	X/Ka Backfits				- / 120.008	- / 17.377	- / 3.907	- / 2.365	- / 0.000	- / 2.365
P-40a	NMT Ashore Antennas				- / 13.903	- / 0.000	- / 0.715	- / 5.546	- / 0.000	- / 5.546
P-3a	1 / 3216 Navy Multiband Terminal (NMT) - Afloat (TBD)				- / 604.087	- / 71.319	- / 12.249	- / 32.029	- / 0.000	- / 32.029
P-3a	5 / ATIP (TBD)				- / 26.186	- / 20.811	- / 15.588	- / 13.076	- / 0.000	- / 13.076
P-3a	6 / Assured C2 Modems (TBD)				- / 0.000	- / 0.000	- / 0.000	- / 11.010	- / 0.000	- / 11.010
<b>P-40</b>	<b>Total Gross/Weapon System Cost</b>				<b>- / 853.019</b>	<b>- / 118.142</b>	<b>- / 38.365</b>	<b>- / 69.764</b>	<b>- / 0.000</b>	<b>- / 69.764</b>
<p>*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.</p> <p>Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.</p>										
<p><b>Justification:</b> The NMT Budget has been restructured to identify and break out other costs previously consolidated against procurement and installation line items. FY18 begins procurement and installation of Assured C2 modems, continues the procurement and installations of full NMT capability terminals and continues installation of the Advanced Time Division Multiple Access Interface Processor (ATIP) on ship terminals procured in prior years. X/Ka back-fit and Ashore Antenna installations are provided on separate P3a sheets.</p>										

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy															Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13							P-1 Line Item Number / Title: 3216 / Navy Multiband Terminal (NMT)							Aggregated Items Title: 3216 Navy Multiband Terminal (NMT) - Ashore						
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring																				
Ashore -- Procurement <sup>(1)</sup>	A		1,621.906	32	51.901	-	-	-	-	-	-	3,573.000	1	3.573	-	-	-	3,573.000	1	3.573
Ashore -- Installation	A		-	-	34.046	-	-	6.860	-	-	4.354	-	-	1.183	-	-	-	-	-	1.183
NMT Integration, Assembly & Test (IA&T)	A		-	-	-	-	-	0.687	-	-	0.476	-	-	-	-	-	-	-	-	-
Production Support - Ashore	A		-	-	2.888	-	-	0.041	-	-	0.029	-	-	0.214	-	-	-	-	-	0.214
Other DSA - Ashore	A		-	-	-	-	-	0.397	-	-	0.397	-	-	0.118	-	-	-	-	-	0.118
NMT System Operational Verification Test (SOVT)	A		-	-	-	-	-	0.650	-	-	0.650	-	-	0.650	-	-	-	-	-	0.650
Subtotal: B Kits/Recurring			-	-	88.835	-	-	8.635	-	-	5.906	-	-	5.738	-	-	-	-	-	5.738
Total			-	-	88.835	-	-	8.635	-	-	5.906	-	-	5.738	-	-	0.000	-	-	5.738
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
Remarks: Models of Systems Affected: Shore stations																				
NMT Procurement budget updates include Integration, Assembly and Test (IA&T). IA&T efforts are required once terminals and antennas are delivered from Raytheon Production Facilities to the government site SSC Atlantic, Charleston SC. SSC Atlantic serves as the lead integrator and performs Pre-Installation, Test and Check-Out (PITCO) of the terminals, antennas and ATIPs required for NMT shore platforms. NMT Installation updates are performed by SSC Atlantic and SSC Pacific, San Diego, CA to provide the System Operational Verification Test (SOVT) required to validate the NMT system is operational post installation on shore sites. Provides jam resistant, low probability of interception and detection for protected extended rate communications with Advanced Extremely High Frequency (AEHF) capability.																				
Footnotes: <sup>(1)</sup> 1. FY17 increased Install Average Unit Cost (IAUC) compared to FY18 IAUC accounts for infrastructure modifications required at NCTAMSPAC (Hawaii), NCTS (Guam) and NRTF (Awase, Japan). 2. Procurement hardware pricing reflects Raytheon current contract pricing. Integration, Assembly and Test (IA&T) and System Operational Verification Test (SOVT) engineering services are required to deliver and install the NMT Terminal System. 3. FY18 Ashore IA&T engineering services cost reflect delivery completion of FY15 procured terminals, For larger quantity buys, the Procurement Lead Time (PLT) is 15 months to deliver the first terminal. Deliveries continue over a 12 month period with the last delivery occurring 27 months after award. Apr 2016 marked the delivery of the first terminal and the last terminal delivers in Mar 2017. 4. SOVT engineering services cost represent completion of SOVT reports to coincide with the end of installation at the Shore sites. Prior year equipment installed in FY16-FY18 is due to Fleet directed fielding schedule adjustments. 5. FY18-FY21 Ashore installation updates represent a re-prioritization of hardware units to support Afloat ship availabilities.																				

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy															Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13						P-1 Line Item Number / Title: 3216 / Navy Multiband Terminal (NMT)						Aggregated Items Title: X/Ka Backfits								
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
A Kits/Recurring																				
X/Ka Backfits -- Procurement <sup>(2)</sup>	A		1,426.958	48	68.494	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
X/Ka Backfits -- Installation	A		-	-	51.514	-	-	15.176	-	-	2.494	-	-	1.802	-	-	-	-	-	1.802
NMT Integration, Assembly & Test (IA&T)	A		-	-	-	-	-	1.030	-	-	0.357	-	-	0.238	-	-	-	-	-	0.238
NMT System Operational Verification Test (SOVT)	A		-	-	-	-	-	1.171	-	-	1.056	-	-	0.325	-	-	-	-	-	0.325
Subtotal: A Kits/Recurring			-	-	120.008	-	-	17.377	-	-	3.907	-	-	2.365	-	-	-	-	-	2.365
Total			-	-	120.008	-	-	17.377	-	-	3.907	-	-	2.365	-	-	0.000	-	-	2.365

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

**Remarks:**

X/Ka Backfits comprise of antennas and are aligned to a specific Terminal variant for ship platforms to provide SATCOM capabilities.

NMT Procurement updates include Integration, Assembly and Test (IA&T) efforts and are performed once back-fit antennas are delivered from Raytheon Production Facilities to the government site SSC Atlantic, Charleston SC. SSC Atlantic serves as the lead integrator and performs Pre-Installation, Test and Check-Out (PITCO) of the antennas required for NMT ship platforms. NMT Installations include System Operational Verification Test (SOVT). SOVT efforts are performed by SSC Atlantic, Charleston, SC and SSC Pacific, San Diego, CA and validate the NMT system is operational post installation on afloat platforms.

**Footnotes:**

(2) 1. Fielded platforms with the Q/Ka configuration require an X/Ka backfit, which has additional costs dependent on platform (large vs small deck). 2. FY17 increased Installation Average Unit Cost (IAUC) compared to FY18 IAUC is due to a CG Afloat Variant that requires a large antenna group and is double the cost of a small antenna group (ie DDG Ship Platform). 3. FY16-FY18 Procurement Integration, Assembly and Test (IA&T) engineering services cost are required prior to terminal delivery to platforms. For larger quantity buys, the Procurement Lead Time (PLT) is 15 months to deliver the first terminal. Deliveries continue over a 12 month period with the last delivery occurring 27 months after award. 4. FY16-FY22 System Operational Verification Test (SOVT) costs represent the effort to operationally verify the capability following the completion of installation and are tied to the end of the installation availability. NMT scheduled installations are dependent on limited ship availabilities as the program nears FOC. 5. Per Fleet Modernization Program (FMP) first quarter installations reflected in the Installation Schedule are funded in the prior year in order to fund the installation contracts 90 days prior to the beginning of shipboard installation work. 90 days are needed to allow sufficient time for the contractor to plan the work schedule, order material, and perform necessary fabrication.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy															Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13						P-1 Line Item Number / Title: 3216 / Navy Multiband Terminal (NMT)									Aggregated Items Title: NMT Ashore Antennas					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
A Kits/Recurring																				
NMT Ashore Antennas -- Procurement <sup>(3)</sup>	A		817.824	17	13.903	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NMT Ashore Antennas -- Installation	A		-	-	-	-	-	-	-	-	-	-	-	3.911	-	-	-	-	-	3.911
NMT Integration, Assembly & Test (IA&T)	A		-	-	-	-	-	-	-	-	0.715	-	-	1.310	-	-	-	-	-	1.310
NMT System Operational Verification Test (SOVT)	A		-	-	-	-	-	-	-	-	-	-	-	0.325	-	-	-	-	-	0.325
Subtotal: A Kits/Recurring			-	-	13.903	-	-	-	-	-	0.715	-	-	5.546	-	-	-	-	-	5.546
Total			-	-	13.903	-	-	0.000	-	-	0.715	-	-	5.546	-	-	0.000	-	-	5.546

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

**Remarks:**

NMT Procurement budget updates include Integration, Assembly and Test (IA&T) efforts are performed once Ashore Antennas are delivered from Raytheon Production Facilities to the government site SSC Atlantic, Charleston SC. SSC Atlantic serves as the lead integrator and performs Pre-Installation, Test and Check-Out (PITCO) of the antennas required for NMT shore platforms. NMT Installations include System Operational Verification Test (SOVT). SOVT efforts are performed by SSC Atlantic, Charleston, SC and SSC Pacific, San Diego, CA and validate the NMT antenna is operational post installation on shore sites. Shore Antennas comprise of a Q Band configuration to provide SATCOM capabilities.

**Footnotes:**

<sup>(3)</sup> 1. FY17-FY18 Integration, Assembly and Test (IA&T) engineering services are required to complete delivery of the NMT Terminal Antennas procured in FY16. 2. FY18-FY20 System Operational Verification Test (SOVT) costs represent the effort to operationally verify the capability following the completion of the antenna installation at Shore sites.

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 13		<b>P-1 Line Item Number / Title:</b> 3216 / Navy Multiband Terminal (NMT)			<b>Modification Number / Title:</b> 1 / 3216 Navy Multiband Terminal (NMT) - Afloat	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	604.087	71.319	12.249	32.029	0.000	32.029
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	604.087	71.319	12.249	32.029	0.000	32.029
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
<b>Total Obligation Authority</b> <i>(\$ in Millions)</i>	<b>604.087</b>	<b>71.319</b>	<b>12.249</b>	<b>32.029</b>	<b>0.000</b>	<b>32.029</b>
<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>	-	-	-	-	-	-
<p><b>Description:</b> (Afloat Ship) (Afloat Sub): Provides jam resistant, low probability of interception and detection for protected extended data rate communications with Advanced Extremely High Frequency (AEHF) capability.</p> <p>NMT Procurement budget updates include Integration, Assembly and Test (IA&amp;T). IA&amp;T efforts are performed once terminals and antennas are delivered from Raytheon Production Facilities to the government site SSC Atlantic, Charleston SC. SSC Atlantic serves as the lead integrator and performs Pre-Installation, Test and Check-Out (PITCO) of the terminals, antennas and ATIPs required for NMT ship and submarine afloat platforms. NMT Installation updates include System Operational Verification Test (SOVT). SOVT efforts are performed by SSC Atlantic, Charleston, SC and SSC Pacific, San Diego, CA and validate the NMT system is operational post installation on afloat platforms.</p>						

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Exhibit P-3a, Individual Modification: FY 2018 Navy					Date: May 2017	
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 13		P-1 Line Item Number / Title: 3216 / Navy Multiband Terminal (NMT)			Modification Number / Title: 1 / 3216 Navy Multiband Terminal (NMT) - Afloat	
ID Code (A=Service Ready, B=Not Service Ready) :				MDAP/MAIS Code:		
Models of Systems Affected: Ships, submarines		Modification Type: TBD			Related RDT&E PEs: 0303109N	
Financial Plan	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Procurement						
Modification Item 1 of 1: 3216 Navy Multiband Terminal (NMT) - Afloat						
B Kits						
Recurring						
1.1.1) Afloat Ship - NonOrganic <sup>(4)</sup>	110 / 281.706	8 / 29.512	- / -	1 / 8.476	- / -	1 / 8.476
1.1.2) Afloat Sub - NonOrganic	63 / 58.083	4 / 3.026	2 / 2.985	- / -	- / -	- / -
1.1.3) NMT Integration, Assembly & Test (IA&T) - Organic	- / -	- / 2.748	- / 2.263	- / 0.715	- / -	- / 0.715
1.1.4) Production Support - Ship - NonOrganic	- / 15.641	- / 1.881	- / 0.107	- / 0.537	- / -	- / 0.537
1.1.5) Production Support - Sub - NonOrganic	- / 3.426	- / 0.237	- / 0.208	- / 0.014	- / -	- / 0.014
1.1.6) Other DSA - Ship - NonOrganic	- / 28.753	- / 1.320	- / 1.532	- / 2.740	- / -	- / 2.740
1.1.7) Other DSA - Sub - NonOrganic	- / 6.773	- / 0.323	- / 0.188	- / 0.335	- / -	- / 0.335
1.1.8) NMT System Operational Verification Test (SOVT) - Organic	- / -	- / 2.108	- / 3.005	- / 0.650	- / -	- / 0.650
Subtotal: Recurring	- / 394.382	- / 41.155	- / 10.288	- / 13.467	- / -	- / 13.467
Subtotal: 3216 Navy Multiband Terminal (NMT) - Afloat	173 / 394.382	12 / 41.155	2 / 10.288	1 / 13.467	- / -	1 / 13.467
Subtotal: Procurement, All Modification Items	- / 394.382	- / 41.155	- / 10.288	- / 13.467	- / -	- / 13.467
Installation						
Modification Item 1 of 1: 3216 Navy Multiband Terminal (NMT) - Afloat	- / 209.705	- / 30.164	- / 1.961	- / 18.562	- / 0.000	- / 18.562
Subtotal: Installation	- / 209.705	- / 30.164	- / 1.961	- / 18.562	- / -	- / 18.562
Total						
Total Cost (Procurement + Support + Installation)	604.087	71.319	12.249	32.029	0.000	32.029

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy						<b>Date:</b> May 2017							
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 13				<b>P-1 Line Item Number / Title:</b> 3216 / Navy Multiband Terminal (NMT)				<b>Modification Number / Title:</b> 1 / 3216 Navy Multiband Terminal (NMT) - Afloat					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :								<b>MDAP/MAIS Code:</b>					
<b>Modification Item 1 of 1:</b> 3216 Navy Multiband Terminal (NMT) - Afloat													
<b>Manufacturer Information</b>													
Manufacturer Name: Raytheon						Manufacturer Location: Marlborough, MA							
Administrative Leadtime (in Months): 3						Production Leadtime (in Months): 15							
<b>Dates</b>		<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
Contract Dates		Dec 2015				Jan 2017				Jan 2018			
Delivery Dates		Mar 2017				Apr 2018				Apr 2019			
<b>Installation Information</b>													
<b>Method of Implementation:</b> Method:: Installation Name: Navy Multiband Terminal (NMT) - Afloat													
<b>Installation Cost</b>		<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>	
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)	
Prior Years		134 / 209.705		20 / 30.164		4 / 1.961		13 / 18.161		0 / 0.000		13 / 18.161	
FY 2016		- / -		- / -		- / -		1 / 0.401		0 / 0.000		1 / 0.401	
FY 2017		- / -		- / -		- / -		- / -		- / -		- / -	
FY 2018		- / -		- / -		- / -		- / -		- / -		- / -	
Total		134 / 209.705		20 / 30.164		4 / 1.961		14 / 18.562		0 / 0.000		14 / 18.562	
<b>Installation Schedule</b>													
<b>PYS</b>		<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	133	1	1	-	5	7	2	5	3	1	6	2	6
Out	131	1	2	1	-	5	7	2	5	6	1	6	2
<b>Footnotes:</b>													
<sup>(4)</sup> 1. FY18-FY22 continues the procurement of NMT terminals and installation of Advanced Time Division Multiple Access Interface Processors (ATIP) hardware. Costs reflect Raytheon current contract pricing. Installation costs are based on current program office estimates. Integration, Assembly and Test (IA&T) and System Operational Verification Test (SOVT) engineering services are required to deliver and install the NMT Terminal System. 2. IA&T costs are budgeted in the year of the hardware delivery and support the completion of delivered terminals associated with larger quantity buys procured in prior years. Procurement Lead Time (PLT) is 15 months to deliver the first terminal. Deliveries continue over a 12 month period with the last delivery occurring 27 months after award. For example, the last terminal delivery from the FY15 prior year buy is scheduled March 2017. FY18-FY21 IA&T costs support delivered terminals associated with FY16-FY20 procured terminals. 3. The FY18 Ship Procurement Average Unit Cost (PAUC) is higher due to a single buy and reduced Economic Order Quantity (EOQ) savings. 4. FY16-FY22 System Operational Verification Test (SOVT) costs represent the effort to operationally verify the system capability following the completion of installation and is tied to the end of the installation availability. NMT scheduled installations are dependent on limited ship availabilities as the program nears FOC. 5. Per Fleet Modernization Program (FMP) first quarter installations reflected in the Installation Schedule are funded in the prior year in order to fund the installation contracts 90 days prior to the beginning of shipboard installation work. 90 days are needed to allow sufficient time for the contractor to plan the work schedule, order material, and perform necessary fabrication. 6. Install cost fluctuations are driven by the configuration of the NMT system and the platform type. For example, estimated installation cost for a LHD 1 class (large deck) platform with dual Q/X/Ka capability is approximately three times greater than													



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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 13	<b>P-1 Line Item Number / Title:</b> 3216 / Navy Multiband Terminal (NMT)	<b>Modification Number / Title:</b> 1 / 3216 Navy Multiband Terminal (NMT) - Afloat
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :		<b>MDAP/MAIS Code:</b>
<p>a DDG 51 class platform (small deck) with the same Q/X/Ka capability. Large deck ships consist of 2 Terminal Communication Groups with 4, 5, or 6 antennas. The antenna mix ties to the specific configuration requirement for each ship. Small deck ships consist of 1 Terminal Communication Group with 2, 3, or 4 antennas. There are 13 variants of the NMT and antenna size varies by class (ranging from 54" to 96").</p>		

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy				<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 13		<b>P-1 Line Item Number / Title:</b> 3216 / Navy Multiband Terminal (NMT)			<b>Modification Number / Title:</b> 5 / ATIP	

<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	26.186	20.811	15.588	13.076	0.000	13.076
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	26.186	20.811	15.588	13.076	0.000	13.076
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
<b>Total Obligation Authority</b> <i>(\$ in Millions)</i>	<b>26.186</b>	<b>20.811</b>	<b>15.588</b>	<b>13.076</b>	<b>0.000</b>	<b>13.076</b>
<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:**

NMT includes the Advanced Time Division Multiple Access (TDMA) Interface Processor (IP) and supports increased data transfers for the Automated Digital Network System (ADNS) router architecture supporting improved Quality of Service (QoS) capability, smaller form factor and easier integration into operational environments, further supporting network user access to protected MILSATCOM connectivity.

[Advanced TDMA Interface Processors (ATIP)] The NMT Terminal includes the Advanced Time Division Multiple Access (TDMA) Interface Processor (IP) Modems. ATIP supports increased data transfers for the Automated Digital Network System (ADNS) router architecture supporting improved Quality of Service (QoS) capability, smaller form factor and easier integration into operational environments, further supporting network user access to protected MILSATCOM connectivity.

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 13		<b>P-1 Line Item Number / Title:</b> 3216 / Navy Multiband Terminal (NMT)			<b>Modification Number / Title:</b> 5 / ATIP	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Models of Systems Affected:</b> [No Model Specified]		<b>Modification Type:</b> TBD			<b>Related RDT&amp;E PEs:</b>	
<b>Financial Plan</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
<b>Procurement</b>						
<i>Modification Item 1 of 1:</i> ATIP						
A Kits						
Recurring						
1.1.1) Advanced TDMA Interface Processors (ATIP) - NonOrganic <sup>(5)</sup>	222 / 21.090	75 / 7.150	15 / 2.304	- / -	- / -	- / -
<i>Subtotal: Recurring</i>	- / 21.090	- / 7.150	- / 2.304	- / -	- / -	- / -
<i>Subtotal: ATIP</i>	222 / 21.090	75 / 7.150	15 / 2.304	- / -	- / -	- / -
<i>Subtotal: Procurement, All Modification Items</i>	- / 21.090	- / 7.150	- / 2.304	- / -	- / -	- / -
<b>Installation</b>						
<i>Modification Item 1 of 1:</i> ATIP	- / 5.096	- / 13.661	- / 13.284	- / 13.076	- / 0.000	- / 13.076
<i>Subtotal: Installation</i>	- / 5.096	- / 13.661	- / 13.284	- / 13.076	- / -	- / 13.076
<b>Total</b>						
<b>Total Cost (Procurement + Support + Installation)</b>	<b>26.186</b>	<b>20.811</b>	<b>15.588</b>	<b>13.076</b>	<b>0.000</b>	<b>13.076</b>

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy						<b>Date:</b> May 2017							
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 13				<b>P-1 Line Item Number / Title:</b> 3216 / Navy Multiband Terminal (NMT)		<b>Modification Number / Title:</b> 5 / ATIP							
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :					<b>MDAP/MAIS Code:</b>								
<b>Modification Item 1 of 1:</b> ATIP													
<b>Manufacturer Information</b>													
Manufacturer Name: COMTECH <sup>(6)</sup>					Manufacturer Location: Tempe, AZ								
Administrative Leadtime (in Months): 3					Production Leadtime (in Months): 3								
<b>Dates</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018</b>							
Contract Dates		Jan 2016		Jan 2017									
Delivery Dates		Apr 2016		Apr 2017									
<b>Installation Information</b>													
<b>Method of Implementation:</b> [none specified]:: Installation Name: Advanced TDMA Interface Processors (ATIP)													
<b>Installation Cost</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>							
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total 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 / 5.096	75 / 13.661	65 / 13.284	54 / 10.233	0 / 0.000	54 / 10.233							
FY 2016	- / -	- / -	- / -	15 / 2.843	0 / 0.000	15 / 2.843							
FY 2017	- / -	- / -	- / -	- / -	- / -	- / -							
FY 2018	- / -	- / -	- / -	- / -	- / -	- / -							
Total	28 / 5.096	75 / 13.661	65 / 13.284	69 / 13.076	0 / 0.000	69 / 13.076							
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	28	-	-	25	25	25	-	22	22	21	-	23	23
Out	28	-	-	-	25	25	25	-	22	22	21	-	23
<b>Footnotes:</b>													
<sup>(5)</sup> 1. ATIP modem installations will take place during a Window of Opportunity (WOO) availability that includes a 14 day window to perform and complete the installation. 2. Per Fleet Modernization Program (FMP) first quarter installations reflected in the Installation Schedule are funded in the prior year in order to fund the installation contracts 90 days prior to the beginning of shipboard installation work. 90 days are needed to allow sufficient time for the contractor to plan the work schedule, order material, and perform necessary fabrication. <sup>(6)</sup> ATIP procurements completed in 2017.													

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy			<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 13		<b>P-1 Line Item Number / Title:</b> 3216 / Navy Multiband Terminal (NMT)		<b>Modification Number / Title:</b> 6 / Assured C2 Modems	

<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	0.000	0.000	0.000	11.010	0.000	11.010
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	0.000	0.000	0.000	11.010	0.000	11.010
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>11.010</b>	<b>0.000</b>	<b>11.010</b>
<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:

Assured C2 Modems: Directly support Assured Command and Control (C2) posture, SATCOM reliability, space resiliency via band diversity and redundancy for MILSATCOM.

Beginning in FY18, Assured C2 Modems will provide Modem Technical Refresh required to directly support Assured Command and Control (C2) posture.

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 13			<b>P-1 Line Item Number / Title:</b> 3216 / Navy Multiband Terminal (NMT)		<b>Modification Number / Title:</b> 6 / Assured C2 Modems	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Models of Systems Affected:</b> Shore Stations, Ships		<b>Modification Type:</b> TBD			<b>Related RDT&amp;E PEs:</b>	
<b>Financial Plan</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
<b>Procurement</b>						
<b>Modification Item 1 of 1:</b> Assured C2 Modems						
A Kits						
Recurring						
1.1.1) Assured C2 Modems - NonOrganic <sup>(7)</sup>	- / -	- / -	- / -	64 / 2.154	- / -	64 / 2.154
1.1.2) Production Support - Assured C2 Modems - Organic	- / -	- / -	- / -	- / 0.129	- / -	- / 0.129
1.1.3) Other DSA - Assured C2 Modems - Organic <sup>(8)</sup>	- / -	- / -	- / -	- / 6.442	- / -	- / 6.442
<b>Subtotal: Recurring</b>	- / 0.000	- / -	- / -	- / 8.725	- / -	- / 8.725
<b>Subtotal: Assured C2 Modems</b>	- / -	- / -	- / -	64 / 8.725	- / -	64 / 8.725
<b>Subtotal: Procurement, All Modification Items</b>	- / 0.000	- / -	- / -	- / 8.725	- / -	- / 8.725
<b>Installation</b>						
<b>Modification Item 1 of 1:</b> Assured C2 Modems						
	- / 0.000	- / 0.000	- / 0.000	- / 2.285	- / 0.000	- / 2.285
<b>Subtotal: Installation</b>	- / 0.000	- / -	- / -	- / 2.285	- / -	- / 2.285
<b>Total</b>						
<b>Total Cost (Procurement + Support + Installation)</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>11.010</b>	<b>0.000</b>	<b>11.010</b>

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy							<b>Date:</b> May 2017							
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 13					<b>P-1 Line Item Number / Title:</b> 3216 / Navy Multiband Terminal (NMT)					<b>Modification Number / Title:</b> 6 / Assured C2 Modems				
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :							<b>MDAP/MAIS Code:</b>							
<b>Modification Item 1 of 1:</b> Assured C2 Modems														
<b>Manufacturer Information</b>														
Manufacturer Name: TBD							Manufacturer Location: TBD							
Administrative Leadtime <i>(in Months)</i> : 3							Production Leadtime <i>(in Months)</i> : 3							
<b>Dates</b>		<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>				
Contract Dates										Jan 2018				
Delivery Dates										Apr 2018				
<b>Installation Information</b>														
<b>Method of Implementation:</b> [none specified]:: Installation Name: Assured C2 Modems														
<b>Installation Cost</b>		<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>		
		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		- / -		- / -		- / -		- / -		- / -		- / -		
FY 2016		- / -		- / -		- / -		- / -		- / -		- / -		
FY 2017		- / -		- / -		- / -		- / -		- / -		- / -		
FY 2018		- / -		- / -		- / -		64 / 2.285		0 / 0.000		64 / 2.285		
Total		- / -		- / -		- / -		64 / 2.285		0 / 0.000		64 / 2.285		
<b>Installation Schedule</b>														
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>				
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	
In	-	-	-	-	-	-	-	-	-	-	-	16	48	
Out	-	-	-	-	-	-	-	-	-	-	-	-	16	
<b>Footnotes:</b>														
(7) 1. Ship Modem installations will take place during a Window of Opportunity (WOO) availability that includes a 14 day window to perform and complete the installation.														
(8) 1. FY18 DSA costs are required to support 100% of the drawings and installation planning requirements associated with all 64 FY18 modem installations. Additionally, the FY18 DSA costs include partial DSA requirements (75%) required for pre-planning and design of the FY19 installations where 365 modem installations are planned. Typically DSA requirements are budgeted 75% the year prior to the installation and 25% the year of the installation. DSA for the FY18 installations were budgeted at 100% in FY18 due to the urgent nature of the requirement.														

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy										<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 14: Shore Communications							<b>P-1 Line Item Number / Title:</b> 3302 / Joint Communications Support Element (JCSE)					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A				<b>Program Elements for Code B Items:</b> N/A				<b>Other Related Program Elements:</b> N/A				
<b>Line Item MDAP/MAIS Code:</b> N/A												
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>To Complete</b>	<b>Total</b>
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	15.390	4.591	4.156	4.256	0.000	4.256	4.354	4.450	4.539	4.628	Continuing	Continuing
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	15.390	4.591	4.156	4.256	0.000	4.256	4.354	4.450	4.539	4.628	Continuing	Continuing
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>15.390</b>	<b>4.591</b>	<b>4.156</b>	<b>4.256</b>	<b>0.000</b>	<b>4.256</b>	<b>4.354</b>	<b>4.450</b>	<b>4.539</b>	<b>4.628</b>	<b>Continuing</b>	<b>Continuing</b>
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost ( <i>\$ in Thousands</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ( <i>\$ in Thousands</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<p><b>Description:</b></p> <p>The Joint Communications Support Element (JCSE) Program is responsible for procuring hardware and software to support Defensive Cyber Operations, Transport technologies (narrowband, wideband and protected satellite communications), C4 Architecture (network elements that provide access to the Defense Information Systems Network (DISN) cloud), and C2 On-The-Move (land, air and ground based tactical capabilities) in concert with Strategic Planning Guidance. JCSE's Modernization Program is structured around Combatant Command (CCMD) requirements using emerging technologies. Services formally influence JCSE's acquisition plan through semi-annual program reviews and make recommendations in concert with Major Defense Acquisition Program (MDAP) schedules, ensuring that Service dollars meet Joint Service requirements. The modernization program goals include meeting emerging real-world operational requirements with improved capabilities, smaller footprint, reduced operations and maintenance costs, and seamless integration with the global information grid.</p> <p>This line funds the Department of the Navy's portion of the JCSE Program. This program is jointly funded by Army, Navy, Marine Corps, and Air Force in support of Joint Tactical Force and Joint Special Operations Task Force Headquarters.</p> <p><b>Justification:</b></p> <p>FY18 funds the procurement of Communication requirements identified to support personnel and equipment to establish and maintain emergency communications detachments in support of Joint Task Force and Joint Special Operations Task Force Commanders.</p>												

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy										<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 14: Shore Communications							<b>P-1 Line Item Number / Title:</b> 3303 / Electrical Power Systems					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A				<b>Program Elements for Code B Items:</b> N/A				<b>Other Related Program Elements:</b> N/A				
<b>Line Item MDAP/MAIS Code:</b> N/A												
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>To Complete</b>	<b>Total</b>
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	2.180	1.246	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	3.426
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	2.180	1.246	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	3.426
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority</b> <i>(\$ in Millions)</i>	<b>2.180</b>	<b>1.246</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>-</b>	<b>3.426</b>
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
<b>Description:</b> Procures, installs, and replaces generators and Uninterruptible Power Supply (UPS) systems to provide highly reliable, continuous, high quality power subsystems to support Navy Cyber Forces. Some of the operational load is designated as "critical" and requires UPS systems for instantaneous application in case of loss or disturbance of the primary power source.												
<b>Justification:</b> Starting in FY17, funds realigned to Budget Line Item 8106												

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy										<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 15: Cryptographic Equipment							<b>P-1 Line Item Number / Title:</b> 3415 / Info Systems Security Program (ISSP)					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A			<b>Program Elements for Code B Items:</b> N/A				<b>Other Related Program Elements:</b> 0303140N					
<b>Line Item MDAP/MAIS Code:</b> N/A												
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>To Complete</b>	<b>Total</b>
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	1,455.627	126.237	85.694	89.663	0.000	89.663	128.177	155.401	166.705	165.946	Continuing	Continuing
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	1,455.627	126.237	85.694	89.663	0.000	89.663	128.177	155.401	166.705	165.946	Continuing	Continuing
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>1,455.627</b>	<b>126.237</b>	<b>85.694</b>	<b>89.663</b>	<b>0.000</b>	<b>89.663</b>	<b>128.177</b>	<b>155.401</b>	<b>166.705</b>	<b>165.946</b>	<b>Continuing</b>	<b>Continuing</b>
<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> )	-	1.520	0.163	0.951	-	0.951	0.814	1.014	0.987	1.096	Continuing	Continuing
Flyaway Unit Cost ( <i>\$ in Thousands</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ( <i>\$ in Thousands</i> )	-	-	-	-	-	-	-	-	-	-	-	-

**Description:**

The Information Systems Security Program (ISSP) ensures the protection of Navy and joint cyberspace systems from exploitation and attack. Systems include wired and wireless telecommunications systems, cybersecurity systems, and the content processed, stored, or transmitted therein. ISSP includes protection of the Navy's National Security Systems (NSS).

The rapid change in the underlying commercial and government cyber infrastructures makes cybersecurity an increasingly complex and dynamic problem. ISSP provides the Navy's warfighter the essential information trust characteristics of availability, confidentiality, integrity, authentication, and non-repudiation. Cybersecurity capabilities must evolve quickly to meet the rapidly evolving threats and vulnerabilities.

Programs within the ISSP budget include:

P5 / Public Key Infrastructure (PKI): PKI implements a secure infrastructure for the generation, management, and delivery of digital certificates for secure electronic transactions, hardware certificate-based two-way authentication to networks, applications, web servers, and secure email.

P5 / Cybersecurity Virtual Secure Enclave (VSE): Cybersecurity VSE is the follow-on limited transition of capabilities from the Office of the Secretary of Defense (OSD) / Pacific Command (PACOM) sponsored VSE Joint Capability Technology Demonstration (JCTD). The technology provides a virtual secure enclave within existing networks that create a two-way encrypted tunnel between locations. Client Nodes (CN) and deployable Fly Away Kits (FAK) expand user level access to the existing system architecture which is required for the execution of various operational plans.

P5 / Navy Cyber Situational Awareness (NCSA): NCSA was previously budgeted under CND but broken out in FY18 for greater visibility into cybersecurity. NCSA is a command and control infrastructure that provides Navy commanders with timely, trusted, and comprehensive Situational Awareness (SA) of the cyberspace domain to include tailored, near real-time visualization of network health, vulnerabilities, and operational readiness through the correlation of data from multiple sources. NCSA enables early threat detection and timely decision making. NCSA ashore systems will enable Navy commanders to monitor, assess, plan, and direct Navy networks to provide a high-level of confidence that operational missions can be executed as planned in adverse cyber conditions. Cyber SA will be provided via web-accessible services generated from a primary core suite fielded at Navy Cyber Defense Operations Command (NCDOC). Visualizations and analytics will be customized based on end user needs, shareable and tailorable between different end users. End users include Fleet Cyber Command / Commander Tenth Fleet (FCC/C10F), Fleet Maritime Operations Centers (MOCs), NCDOC, and Navy Network Warfare Command (NNWC). NCSA procures equipment to collect, curate, analyze, and visualize maritime Cyber Key Terrain (CKT) critical for providing Navy commanders with timely, trusted, and comprehensive SA of the cyberspace domain; Data as a Service (DaaS) which provides the ability to ingest disparate data from numerous data sources; Analytics suite of software and logic to integrate and translate the data ingested by the DaaS component; Visualization / user interface to display cyber SA data that are relevant to the unique needs of the Cyber Commander and for display via common visual services; as well as equipment for

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 15: Cryptographic Equipment		P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0303140N
Line Item MDAP/MAIS Code: N/A		
platforms conducting Ballistic Missile Defense (BMD) and Nuclear Command, Control, and Communications Navy (NC3-N) missions. The data that is collected and analyzed via SHARKCAGE will be presented and visualized via the NCSA capability.		
P3A / Computer Network Defense (CND): CND provides capabilities to secure the Cyber Domain. CND is a set of processes and protective measures that use computer networks to detect, monitor, protect, analyze and defend against network infiltrations resulting in service/network denial, degradation and disruptions. CND enables a government or military institute/organization to defend against network attacks perpetrated by malicious or adversarial computer systems or networks.		
P3A / Navy Cryptography (Crypto): Navy Crypto modernizes legacy cryptographic equipment which includes families of Communications Security (COMSEC) and Transmission Security (TRANSEC) devices that are divided into crypto voice, crypto data, crypto products and associated ancillary devices. These devices provide modern cryptographic solutions to replace obsolete, legacy devices within the crypto categories.		
P3A / Key Management (KM) is a collection of Tier 2 security equipment, Key Management Infrastructure (KMI), and Tier 3 equipment Simple Key Loader (SKL). Key Management Infrastructure (KMI) will be a single, automated, network-accessible, electronic-based Key Management (KM) and predominantly electronic cryptographic product delivery infrastructure. It will provide Net Centric, reliable, timely, and secure Communications Security (COMSEC) material management and distribution. It will additionally provide the means for secure ordering, generation, production, distribution, management and auditing of cryptographic products.		
P3A / SHARKCAGE: SHARKCAGE is a global, federated Defensive Cyberspace Operations (DCO) enclave consisting of shore sensor nodes, DCO analysis workbenches, and analytic nodes. Utilizing one-way passive taps in a protected, isolated, classified environment, SHARKCAGE consolidates cyber event data from multiple platforms and networks, providing Navy DCO forces with a shared environment and common platform for integrated workflow, collaboration, and analysis. SHARKCAGE efficiently detects, correlates, and analyzes nation and non-nation state attacks against maritime Cyber Key Terrain (CKT) and the Naval Networking Environment (NNE). The data that is collected and analyzed via SHARKCAGE will be presented and visualized via the NCSA capability.		

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy								<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 15: Cryptographic Equipment						<b>P-1 Line Item Number / Title:</b> 3415 / Info Systems Security Program (ISSP)				
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A			<b>Program Elements for Code B Items:</b> N/A			<b>Other Related Program Elements:</b> 0303140N				
<b>Line Item MDAP/MAIS Code:</b> N/A										
Exhibits Schedule					Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 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	Computer Network Defense (CND) Increment 2- Afloat (DA070)				- / 30.042	- / 9.465	- / 4.575	- / 3.999	- / 0.000	- / 3.999
P-40a	Navy Cryptography (Crypto) - Ashore (DA071)				- / 622.674	- / 22.122	- / 5.712	- / 6.735	- / 0.000	- / 6.735
P-40a	Key Management (KM) - Afloat (DA005)				- / 67.596	- / 12.700	- / 9.009	- / 5.242	- / 0.000	- / 5.242
P-40a	Key Management (KM) - Ashore (DA005)				- / 99.500	- / 11.493	- / 5.737	- / 4.803	- / 0.000	- / 4.803
P-40a	SHARKCAGE - Afloat (DA070)				- / 0.000	- / 0.000	- / 0.000	- / 3.083	- / 0.000	- / 3.083
P-40a	SHARKCAGE - Ashore (DA070)				- / 0.000	- / 0.000	- / 0.000	- / 9.136	- / 0.000	- / 9.136
P-5	1 / Info Systems Security Program (ISSP)	P-5a			- / 59.464	- / 2.798	- / 1.323	- / 4.000	- / 0.000	- / 4.000
P-3a	2 / Computer Network Defense (CND) Increment 2- Ashore (DA070) (TBD)				- / 105.283	- / 30.438	- / 25.995	- / 24.153	- / 0.000	- / 24.153
P-3a	3 / Navy Cryptography (Crypto) - Afloat (DA071) (TBD)				- / 471.068	- / 37.221	- / 33.343	- / 28.512	- / 0.000	- / 28.512
<b>P-40</b>	<b>Total Gross/Weapon System Cost</b>				<b>- / 1,455.627</b>	<b>- / 126.237</b>	<b>- / 85.694</b>	<b>- / 89.663</b>	<b>- / 0.000</b>	<b>- / 89.663</b>
*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.										
<p><b>Justification:</b> The FY 2018 budget will procure the following:</p> <p>Public Key Infrastructure (PKI) (DA018): (10) PKI systems to include: Real-Time Automated Personal Identification System (RAPIDS) hardware/software, Navy Certificate Validation Infrastructure (NCVI) Secret Internet Protocol Router Network (SIPRNet) &amp; Non-Classified Internet Protocol Router Network (NIPRNet) hardware/software, and Logon Token product end items.</p> <p>Navy Cyber Situational Awareness (NCSA) (DA070): (2) Navy Cyber Situational Awareness (NCSA) systems.</p> <p>Computer Network Defense (CND)(DA070): Equipment to secure Navy network information systems. Procurements on afloat platforms and ashore sites may include hardware and software such as host-based protection tools, Department of Defense (DoD) mandated cyber security tools, cyber security capabilities, servers, laptops, ancillary devices, etc. Equipment will also be procured for Navy's Nuclear Command, Control, and Communications (NC3-N) network supporting Emergency Action Messages (EAM) transmission to afloat and ashore platforms.</p> <p>Navy Cryptography (Crypto)(DA071): FY18 decrease is a result of the completion of KW-46 procurements and associated Design Services Allocation (DSA) and installation costs . Cryptographic equipment includes families of Communications Security (COMSEC) and Transmission Security (TRANSEC) devices that are divided into crypto voice, crypto data, crypto products, and associated ancillary devices. In addition, Crypto will procure VINSON/Advanced Narrowband Digital Voice Terminal Cryptographic Modernization (VACM), In-Line Network Encryptors (INE), COMSEC Phase II, Cryptographic Universal Enclosures (CUE) and Advanced Cryptographic Capability (ACC).</p> <p>Key Management (KM) (DA005): (2,453) Simple Key Loaders (SKL) and (9) Key Management Infrastructure (KMI) Tech Refresh.</p> <p>SHARKCAGE (DA070): Equipment to establish the SHARKCAGE Defensive Cyber Operations (DCO) enclave to detect emerging threats in the tactical environment. Majority of funding will procure equipment for Navy Cyber Defense Operations Command (NCDOC) which will provide the capability to analyze active cyber threats and take actions to contain/stop actual or potential cyber threat activities.</p>										

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 15: Cryptographic Equipment		<b>P-1 Line Item Number / Title:</b> 3415 / Info Systems Security Program (ISSP)
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A	<b>Program Elements for Code B Items:</b> N/A	<b>Other Related Program Elements:</b> 0303140N
<b>Line Item MDAP/MAIS Code:</b> N/A		
The FY2018 budget request was reduced by \$12.600M due to prior year underexecution.		



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<b>Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy</b>															<b>Date:</b> May 2017				
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 15								<b>P-1 Line Item Number / Title:</b> 3415 / Info Systems Security Program (ISSP)							<b>Aggregated Items Title:</b> Computer Network Defense (CND) Increment 2- Afloat (DA070)				

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring																				
Operating System Environment (OSE) SW -- Procurement <sup>(1)</sup>	A		29.443	167	4.917	32.296	57	1.841	33.900	40	1.356	35.459	34	1.206	-	-	-	35.459	34	1.206
Operating System Environment (OSE) SW -- Installation	A		-	-	9.702	-	-	3.754	-	-	2.444	-	-	2.161	-	-	-	-	-	2.161
Operating System Environment (OSE) HW & SW -- Procurement	A		59.667	18	1.074	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operating System Environment (OSE) HW & SW -- Installation	A		-	-	1.409	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Information Assurance Tracking System (IATS) -- Procurement	A		117.276	29	3.401	120.747	1	0.121	-	-	-	-	-	-	-	-	-	-	-	-
Information Assurance Tracking System (IATS) -- Installation	A		-	-	2.904	-	-	0.059	-	-	-	-	-	-	-	-	-	-	-	-
Laptop -- Procurement	A		37.625	24	0.903	42.904	25	1.073	-	-	-	-	-	-	-	-	-	-	-	-
Laptop -- Installation	A		-	-	1.321	-	-	1.544	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: B Kits/Recurring			-	-	25.631	-	-	8.392	-	-	3.800	-	-	3.367	-	-	-	-	-	3.367
Support Cost																				
Train-the-Trainer <sup>(2)</sup>	A		-	-	2.958	-	-	0.690	-	-	0.655	-	-	0.524	-	-	-	-	-	0.524
Production Support	A		-	-	0.471	-	-	0.130	-	-	0.070	-	-	0.061	-	-	-	-	-	0.061
DSA	A		-	-	0.982	-	-	0.253	-	-	0.050	-	-	0.047	-	-	-	-	-	0.047
Subtotal: Support Cost			-	-	4.411	-	-	1.073	-	-	0.775	-	-	0.632	-	-	-	-	-	0.632
Total			-	-	30.042	-	-	9.465	-	-	4.575	-	-	3.999	-	-	0.000	-	-	3.999

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

**Remarks:**

Computer Network Defense (CND): CND provides capabilities to secure the Cyber Domain. CND is a set of processes and protective measures that use computer networks to detect, monitor, protect, analyze and defend against network infiltrations resulting in service/network denial, degradation and disruptions. CND enables a government or military institute/organization to defend against network attacks perpetrated by malicious or adversarial computer systems or networks.

CND afloat systems that have not transitioned to Consolidated Afloat Networks and Enterprise Services (CANES) include: system and host-based protection tools, system vulnerability tools, cyber remediation tools, supporting hardware and software for Department of Defense (DoD) mandated tools, Operating System Environment (OSE), enhanced data correlation tools, switches, ancillary devices and other related security tools.

**Footnotes:**

<sup>(1)</sup> Operating System Environment (OSE) Software (SW) - CND OSE SW is centrally managed. Quantities reflect one system per ship platform. The OSE-SW variant loads software onto hardware. The mix of variants being fielded varies each year due to CND's rapid Information Technology (IT) fielding approach, which allows CND to deliver the latest cybersecurity capabilities to afloat platforms.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15	P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)	Aggregated Items Title: Computer Network Defense (CND) Increment 2- Afloat (DA070)

(2) Train-the-Trainer - CND is designated Training Support Agent (TSA) and is required to transition initial training (train the trainer) to an approved solution at the schoolhouses.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy																Date: May 2017				
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15						P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)						Aggregated Items Title: Navy Cryptography (Crypto) - Ashore (DA071)								
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring																				
Crypto (PY)	A		17.995	1,129	20.316	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VINSON/Advanced Narrowband Digital Voice Terminal CM (VACM) <sup>(3)</sup>	A		11.000	500	5.500	11.500	1,227	14.111	11.500	330	3.795	11.500	367	4.221	-	-	-	11.500	367	4.221
Crypto Devices (PY) (Installed) -- Procurement	A		981.697	320	314.143	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crypto Devices (PY) (Installed) -- Installation	A		-	-	271.500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VACM -- Procurement <sup>(4)</sup>	A		-	-	-	385.000	19	7.315	-	-	-	385.000	6	2.310	-	-	-	385.000	6	2.310
VACM -- Installation	A		-	-	-	-	-	-	-	-	1.823	-	-	-	-	-	-	-	-	-
Subtotal: B Kits/Recurring			-	-	611.459	-	-	21.426	-	-	5.618	-	-	6.531	-	-	-	-	-	6.531
Support Cost																				
Production Support	A		-	-	11.215	-	-	0.696	-	-	0.094	-	-	0.204	-	-	-	-	-	0.204
Subtotal: Support Cost			-	-	11.215	-	-	0.696	-	-	0.094	-	-	0.204	-	-	-	-	-	0.204
Total			-	-	622.674	-	-	22.122	-	-	5.712	-	-	6.735	-	-	0.000	-	-	6.735
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
Remarks:																				
Crypto Ashore equipment includes: Families of Communications Security (COMSEC) and Transmission Security (TRANSEC) devices that are divided into crypto voice, crypto data, crypto products and associated ancillary devices. These devices provide modern cryptographic solutions to replace obsolete, legacy devices within the crypto categories for all Services. Navy Crypto Ashore sites include: United States Navy (USN), United States Marine Corps (USMC), United States Coast Guard (USCG) facilities, production/integration sites, and training sites.																				
Crypto Data products include KIV-7M (COMSEC Serial Crypto Replacement), In-Line Network Encryptors (INE), and Advanced Cryptographic Capability (ACC).																				
Crypto Voice products include VINSON/Advanced Narrowband Digital Voice Terminal Cryptographic Modernization (VACM).																				
Space and Naval Warfare Systems Command (SPAWAR) is the VACM Central Procuring Agency for the USN to include the Military Sealift Command (MSC), Naval Air Systems Command (NAVAIR), USMC and USCG.																				
Footnotes:																				
<sup>(3)</sup> VINSON/Advanced Narrowband Digital Voice Terminal Crypto Modernization (VACM) Ashore Organic quantities are per device, not shore site. FY18 reflects an increase in VACM procurements due to shift in United States Air Force (USAF) schedule. Procurement profile aligns to site requirements; Top Secret (TS) sites are the priority and then Secret (S). VACM unit cost updated to reflect projected Full Rate Production (FRP) contract pricing and average cost per device. Space and Naval Warfare Systems Command (SPAWAR) is the VACM Central Procuring Agency for the Navy to include the Military Sealift Command (MSC), Naval Air Systems Command (NAVAIR), United States Marine Core (USMC) and United States Coast Guard (USCG).																				
<sup>(4)</sup> VINSON/Advanced Narrowband Digital Voice Terminal Crypto Modernization (VACM) Ashore NonOrganic (Installed) quantities are grouped per shore site. FY18 reflects an increase in VACM procurements due to shift in United States Air Force (USAF) schedule. Procurement profile aligns to fielding plan and type of site requiring installation; Top Secret (TS) sites are the priority and then Secret (S). VACM procurement unit cost updated to reflect projected Full Rate Production (FRP) contract pricing and average cost per device. Installation costs updated to reflect current fielding plan and type of site requiring installation.																				

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy															Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15							P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)							Aggregated Items Title: Key Management (KM) - Afloat (DA005)						
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring																				
Key Management (KM) (PY)	A		9.545	642	6.128	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Simple Key Loader (SKL) <sup>(5)</sup>	A		5.168	7,800	40.314	3.489	115	0.401	3.520	1,037	3.650	3.533	1,246	4.402	-	-	-	3.533	1,246	4.402
KM (PY) -- Procurement	A		1.000	295	0.295	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KM (PY) -- Installation	A		-	-	2.468	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KMI Spiral 2 -- Procurement	A		26.732	112	2.994	26.863	88	2.364	26.926	21	0.565	-	-	-	-	-	-	-	-	-
KMI Spiral 2 -- Installation	A		-	-	3.091	-	-	6.750	-	-	3.750	-	-	-	-	-	-	-	-	-
KMI Tech Refresh -- Procurement <sup>(6)</sup>	A		-	-	-	-	-	-	-	-	-	34.135	3	0.102	-	-	-	34.135	3	0.102
KMI Tech Refresh -- Installation	A		-	-	-	-	-	-	-	-	-	-	-	0.050	-	-	-	-	-	0.050
Subtotal: B Kits/Recurring			-	-	55.290	-	-	9.515	-	-	7.965	-	-	4.554	-	-	-	-	-	4.554
Support Cost																				
Production Support	A		-	-	2.669	-	-	0.092	-	-	0.148	-	-	0.164	-	-	-	-	-	0.164
Train the Trainer	A		-	-	0.099	-	-	0.105	-	-	0.096	-	-	0.136	-	-	-	-	-	0.136
DSA	A		-	-	9.538	-	-	2.988	-	-	0.800	-	-	0.388	-	-	-	-	-	0.388
Subtotal: Support Cost			-	-	12.306	-	-	3.185	-	-	1.044	-	-	0.688	-	-	-	-	-	0.688
Total			-	-	67.596	-	-	12.700	-	-	9.009	-	-	5.242	-	-	0.000	-	-	5.242
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
Remarks: Key Management (KM) is a collection of Tier 2 security equipment, Key Management Infrastructure (KMI), and Tier 3 equipment Simple Key Loader (SKL).																				
KMI is the next generation Tier 2 product to replace the legacy Local Management Device/Key Processor (LMD/KP) Electronic Key Management System (EKMS). KMI includes the Management Client (MGC), Advanced Key Processor (AKP) and High Assurance Internet Protocol Equipment (HAPE) devices. KMI provides a net-centric, web based architecture for the ordering, management and distribution of all cryptographic key material to support Navy users. KMI Tech Refresh will be required to upgrade all KMI Spiral 2 systems in a 5 year cycle. KMI Capability Increment (CI)-3 Spiral 3 will be the next capability build to replace KMI CI-2 Spiral 2.																				
The AN/PYQ-10 SKL is a ruggedized, portable, hand-held fill device, for securely receiving, storing, and transferring data between compatible cryptographic and communications equipment. The SKL is backward-compatible with existing End Cryptographic Units (ECU) and forward-compatible with future security equipment and systems, including KMI.																				
Footnotes: <sup>(5)</sup> Simple Key Loader (SKL) quantities fluctuate as a reflection of the tech refresh cycle. The SKL has a life expectancy of seven years. Increase in FY18 SKL procurements are required to replenish the fleet with key-fill devices required to conduct secure, mission-critical communications. <sup>(6)</sup> Key Management Infrastructure (KMI) tech refresh modernizes all KMI Spiral 2 systems within a 5 year cycle. Unit cost increase from Spiral 2 to KMI Tech Refresh are due to change in hardware.																				

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<b>Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy</b>															<b>Date:</b> May 2017				
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 15								<b>P-1 Line Item Number / Title:</b> 3415 / Info Systems Security Program (ISSP)							<b>Aggregated Items Title:</b> Key Management (KM) - Ashore (DA005)				

Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring																				
Key Management (KM) (PY)	A		3.977	8,013	31.871	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Simple Key Loader (SKL) <sup>(7)</sup>	A		2.943	9,253	27.231	3.489	272	0.949	3.520	1,472	5.181	3.533	1,207	4.264	-	-	-	3.533	1,207	4.264
KM (PY) -- Procurement	A		2.014	554	1.116	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KM (PY) -- Installation	A		-	-	6.755	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KMI Spiral 1&2 -- Procurement	A		26.532	417	11.064	26.792	64	1.715	-	-	-	-	-	-	-	-	-	-	-	-
KMI Spiral 1&2 -- Installation	A		-	-	7.050	-	-	7.900	-	-	0.200	-	-	-	-	-	-	-	-	-
Engineering Change Orders	A		-	-	3.994	-	-	0.601	-	-	-	-	-	-	-	-	-	-	-	-
KMI Tech Refresh -- Procurement <sup>(8)</sup>	A		-	-	-	-	-	-	-	-	-	34.135	6	0.205	-	-	-	34.135	6	0.205
KMI Tech Refresh -- Installation	A		-	-	-	-	-	0.000	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: B Kits/Recurring			-	-	89.081	-	-	11.165	-	-	5.381	-	-	4.469	-	-	-	-	-	4.469
Support Cost																				
Production Support	A		-	-	3.714	-	-	0.141	-	-	0.184	-	-	0.148	-	-	-	-	-	0.148
Train the Trainer	A		-	-	0.152	-	-	0.097	-	-	0.172	-	-	0.102	-	-	-	-	-	0.102
Pre-Design Install Planning	A		-	-	6.553	-	-	0.090	-	-	-	-	-	0.084	-	-	-	-	-	0.084
Subtotal: Support Cost			-	-	10.419	-	-	0.328	-	-	0.356	-	-	0.334	-	-	-	-	-	0.334
Total			-	-	99.500	-	-	11.493	-	-	5.737	-	-	4.803	-	-	0.000	-	-	4.803

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

**Remarks:**

Key Management (KM) ashore sites include: United States Navy (USN), United States Marine Corps (USMC), United States Coast Guard (USCG) facilities, production integration sites, and training sites. KM ashore systems include: Simple Key Loader (SKL), Key Management Infrastructure (KMI) Spiral 1 & 2 and KMI Tech Refresh.

KMI is the next generation Tier 2 product to replace the legacy Local Management Device/Key Processor (LMD/KP) Electronic Key Management System (EKMS). KMI includes the Management Client (MGC), Advanced Key Processor (AKP) and High Assurance Internet Protocol Equipment (HAiPE) devices. KMI provides a net-centric, web based architecture for the ordering, management and distribution of all cryptographic key material to support Navy users. KMI Tech Refresh will be required to upgrade all KMI Spiral 2 systems in a 5 year cycle.

The AN/PYQ-10 SKL is a ruggedized, portable, hand-held fill device, for securely receiving, storing, and transferring data between compatible cryptographic and communications equipment. The SKL is backward-compatible with existing End Cryptographic Units (ECU) and forward-compatible with future security equipment and systems, including KMI.

**Footnotes:**

<sup>(7)</sup> Simple Key Loader (SKL) quantities fluctuate as a reflection of the tech refresh cycle. The SKL has a life expectancy of seven years. Decrease in FY18 SKL ashore procurements reflects a prioritization of afloat procurements to replenish the fleet with key-fill devices required to conduct secure, mission-critical communications.

<sup>(8)</sup> Key Management Infrastructure (KMI) Tech Refresh modernizes all KMI Spiral 2 systems within a 5 year cycle. Unit cost increase from Spiral 2 to KMI Tech Refresh are due to change in hardware.

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy															Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15							P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)								Aggregated Items Title: SHARKCAGE - Afloat (DA070)					
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
B Kits/Recurring																				
SHARKCAGE Afloat Suite -- Procurement	A		-	-	-	-	-	-	-	-	-	250.000	4	1.000	-	-	-	250.000	4	1.000
SHARKCAGE Afloat Suite -- Installation	A		-	-	-	-	-	-	-	-	-	-	-	1.500	-	-	-	-	-	1.500
Subtotal: B Kits/Recurring			-	-	0.000	-	-	-	-	-	-	-	-	2.500	-	-	-	-	-	2.500
Support Cost																				
Train-the-Trainer	A		-	-	-	-	-	-	-	-	-	-	-	0.150	-	-	-	-	-	0.150
Production Support	A		-	-	-	-	-	-	-	-	-	-	-	0.050	-	-	-	-	-	0.050
DSA	A		-	-	-	-	-	-	-	-	-	-	-	0.383	-	-	-	-	-	0.383
Subtotal: Support Cost			-	-	0.000	-	-	-	-	-	-	-	-	0.583	-	-	-	-	-	0.583
Total			-	-	0.000	-	-	0.000	-	-	0.000	-	-	3.083	-	-	0.000	-	-	3.083
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
Remarks: SHARKCAGE procurements were previously budgeted under CND and have been broken out for greater visibility into cybersecurity beginning in FY18.																				
SHARKCAGE is a global, federated Defensive Cyberspace Operations (DCO) enclave consisting of sensor nodes, DCO analysis workbenches, and analytic nodes. Utilizing one-way passive taps in a protected, isolated, classified environment, SHARKCAGE consolidates cyber event data from multiple platforms and networks, providing Navy DCO forces with a shared environment and common platform for integrated workflow, collaboration, and analysis. SHARKCAGE efficiently detects, correlates, and analyzes nation and non-nation state attacks against maritime Cyber Key Terrain (CKT) and the Naval Networking Environment (NNE).																				
SHARKCAGE Afloat Suite includes laptops, servers, switches, storage, network taps/cables, and forensic equipment to enable deployed DCO forces to conduct localized mobile analysis. Afloat systems also include supporting hardware and software for enhanced data correlation tools, ancillary devices, and other related security tools.																				

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy														Date: May 2017						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15						P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)								Aggregated Items Title: SHARKCAGE - Ashore (DA070)						
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
A Kits/Recurring																				
SHARKCAGE NCDOD Suite -- Procurement <sup>(9)</sup>	A		-	-	-	-	-	-	-	-	-	7,200.000	1	7.200	-	-	-	7,200.000	1	7.200
SHARKCAGE NCDOD Suite -- Installation	A		-	-	-	-	-	-	-	-	-	-	-	0.525	-	-	-	-	-	0.525
SHARKCAGE Sensor Site -- Procurement <sup>(10)</sup>	A		-	-	-	-	-	-	-	-	-	325.000	1	0.325	-	-	-	325.000	1	0.325
SHARKCAGE Sensor Site -- Installation	A		-	-	-	-	-	-	-	-	-	-	-	0.350	-	-	-	-	-	0.350
Subtotal: A Kits/Recurring			-	-	0.000	-	-	-	-	-	-	-	-	8.400	-	-	-	-	-	8.400
Support Cost																				
Train-the-Trainer	A		-	-	-	-	-	-	-	-	-	-	-	0.150	-	-	-	-	-	0.150
Production Support	A		-	-	-	-	-	-	-	-	-	-	-	0.370	-	-	-	-	-	0.370
DSA	A		-	-	-	-	-	-	-	-	-	-	-	0.216	-	-	-	-	-	0.216
Subtotal: Support Cost			-	-	0.000	-	-	-	-	-	-	-	-	0.736	-	-	-	-	-	0.736
Total			-	-	0.000	-	-	0.000	-	-	0.000	-	-	9.136	-	-	0.000	-	-	9.136
Note: Subtotals or Totals in this Exhibit P-40a may not be exact or sum exactly, due to rounding.																				
Remarks: SHARKCAGE procurements were previously budgeted under CND and have been broken out for greater visibility into cybersecurity beginning in FY18.																				
SHARKCAGE ashore systems represent multiple SHARKCAGE architectures and variants that are specifically designed to each site in accordance with Fleet and Defensive Cyber Operations (DCO) requirements based on emergent threats in the tactical environment. Capabilities provided include network tapping, sensing, and analytic toolsets for passively monitoring multiple Navy networks to detect and assess cyber threats across multiple security enclaves. Ashore sites include Navy Cyber Defense Operations Command (NCDOD), Navy Information Operations Commands (NIOC), Fleet Cyber Command / Commander Tenth Fleet (FCC/C10F), Nuclear Command, Control, and Communications Navy (NC3-N) sites, Ballistic Missile Defense (BMD) sites (i.e., Aegis Ashore), and SHARKCAGE production labs, as well as other network concentration facilities.																				
Line item procures equipment to establish the SHARKCAGE Defensive Cyber Operations (DCO) enclave to address emerging threats in the tactical environment. Procurements within the SHARKCAGE equipment line include hardware and software such as servers, storage, taps, switches, laptops, accessories, and appliances that provide the following capabilities: passive network sensor nodes that collect live network traffic and use signature-based and heuristic intrusion detection systems (IDS) to conduct initial analysis and alerting; analytic nodes which consist primarily of systems supporting ingest, storage, retention, retrieval, correlation, and real-time alerting of network traffic packet capture (PCAP) and event data; and analysis workbenches which provide an environment and suite of tools for DCO analysts to support all aspects of the DCO mission, local to DCO forces at Fleet Cyber Command / Commander Tenth Fleet (FCC/C10F), Navy Cyber Defense Operations Command (NCDOD), Navy Information Operations Commands (NIOC), Naval Computer and Telecommunications Stations (NCTS), and Naval Computer and Telecommunications Area Master Stations (NCTAMS). Hardware and software will also be procured to support platforms conducting Ballistic Missile Defense (BMD) and Nuclear Command, Control, and Communications Navy (NC3-N) missions.																				
NCDOD Suite: The primary SHARKCAGE suite that supports the entire Navy enterprise and provides the capability to analyze active cyber threats and take actions to contain/stop actual or potential threat activities.																				
Analytic Site: Provide a regional/AOR capability to analyze active cyber threats and take actions to contain/stop actual or potential threat activities.																				
Sensor Site: Provide analysts with the ability to conduct data ingest, data storage, data retention, data retrieval, data correlation, and real-time alerting of event-based data to support the DCO mission.																				
Footnotes:																				

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15	P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)	Aggregated Items Title: SHARKCAGE - Ashore (DA070)
<p><sup>(9)</sup> SHARKCAGE Navy Cyber Defense Operations Command (NCDOC) Suite: The primary SHARKCAGE suite that supports the entire Navy enterprise and provides the capability to analyze active cyber threats and take actions to contain/ stop actual or potential threat activities.</p> <p><sup>(10)</sup> SHARKCAGE Sensor Site: Provides operators with the ability to conduct data ingest, data storage, data retention, data retrieval, data correlation, and real-time alerting of event-based data to support the Defensive Cyber Operations (DCO) mission.</p>		



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Exhibit P-5, Cost Analysis: FY 2018 Navy											Date: May 2017							
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15						P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)						Item Number / Title [DODIC]: 1 / Info Systems Security Program (ISSP)						
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Resource Summary				Prior Years		FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total				
Procurement Quantity <i>(Units in Each)</i>				-		-		-		-		-		-				
Gross/Weapon System Cost <i>(\$ in Millions)</i>				59.464		2.798		1.323		4.000		0.000		4.000				
Less PY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Net Procurement (P-1) <i>(\$ in Millions)</i>				59.464		2.798		1.323		4.000		0.000		4.000				
Plus CY Advance Procurement <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Total Obligation Authority <i>(\$ in Millions)</i>				59.464		2.798		1.323		4.000		0.000		4.000				
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)																		
Initial Spares <i>(\$ in Millions)</i>				-		-		-		-		-		-				
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>				-		-		-		-		-		-				
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Hardware - Public Key Infrastructure (PKI) (DA018) Cost																		
Recurring Cost																		
1.1.1) PKI - Procurement <sup>(†)</sup>	1.007	30,286	30.483	0.105	15,010	1.576	88.500	10	0.885	88.500	10	0.885	-	-	0.000	88.500	10	0.885
Subtotal: Recurring Cost	-	-	30.483	-	-	1.576	-	-	0.885	-	-	0.885	-	-	0.000	-	-	0.885
Subtotal: Hardware - Public Key Infrastructure (PKI) (DA018) Cost	-	-	30.483	-	-	1.576	-	-	0.885	-	-	0.885	-	-	0.000	-	-	0.885
Hardware - Cybersecurity Virtual Secure Enclave (VSE) (DA070) Cost																		
Recurring Cost																		
2.1.1) Cyber VSE - Procurement <sup>(†)</sup>	206.556	36	7.436	129.750	4	0.519	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	7.436	-	-	0.519	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Hardware - Cybersecurity Virtual Secure Enclave (VSE) (DA070) Cost	-	-	7.436	-	-	0.519	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Hardware - Navy Cyber Situational Awareness (NCSA) (DA070) Cost																		
Recurring Cost																		
3.1.1) NCSA - Procurement <sup>(†)</sup>	-	-	0.000	-	-	0.000	-	-	0.000	900.000	2	1.800	-	-	0.000	900.000	2	1.800
Subtotal: Recurring Cost	-	-	0.000	-	-	0.000	-	-	0.000	-	-	1.800	-	-	0.000	-	-	1.800
Subtotal: Hardware - Navy Cyber Situational Awareness (NCSA) (DA070) Cost	-	-	0.000	-	-	0.000	-	-	0.000	-	-	1.800	-	-	0.000	-	-	1.800

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Exhibit P-5, Cost Analysis: FY 2018 Navy												Date: May 2017						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15						P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)						Item Number / Title [DODIC]: 1 / Info Systems Security Program (ISSP)						
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Hardware - PKI INSTALLATIONS Cost																		
Recurring Cost																		
4.1.1) PKI - Installations	-	-	9.112	-	-	0.480	-	-	0.300	-	-	0.300	-	-	0.000	-	-	0.300
Subtotal: Recurring Cost	-	-	9.112	-	-	0.480	-	-	0.300	-	-	0.300	-	-	0.000	-	-	0.300
Subtotal: Hardware - PKI INSTALLATIONS Cost	-	-	9.112	-	-	0.480	-	-	0.300	-	-	0.300	-	-	0.000	-	-	0.300
Hardware - Cyber VSE INSTALLATIONS Cost																		
Recurring Cost																		
5.1.1) Cyber VSE - Installations	-	-	1.648	-	-	0.064	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Recurring Cost	-	-	1.648	-	-	0.064	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Hardware - Cyber VSE INSTALLATIONS Cost	-	-	1.648	-	-	0.064	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Hardware - Navy Cyber Situational Awareness (NCSA) INSTALLATIONS Cost																		
Recurring Cost																		
6.1.1) NCSA - Installations	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.568	-	-	0.000	-	-	0.568
Subtotal: Recurring Cost	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.568	-	-	0.000	-	-	0.568
Subtotal: Hardware - Navy Cyber Situational Awareness (NCSA) INSTALLATIONS Cost	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.568	-	-	0.000	-	-	0.568
Support - Public Key Infrastructure (PKI) Cost																		
7.1) PKI - Production Support	-	-	5.785	-	-	0.040	-	-	0.023	-	-	0.023	-	-	0.000	-	-	0.023
7.2) PKI - DSA	-	-	4.768	-	-	0.097	-	-	0.115	-	-	0.162	-	-	0.000	-	-	0.162
Subtotal: Support - Public Key Infrastructure (PKI) Cost	-	-	10.553	-	-	0.137	-	-	0.138	-	-	0.185	-	-	0.000	-	-	0.185
Support - Cyber VSE Cost																		
8.1) Cyber VSE - Production Support	-	-	0.232	-	-	0.022	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Subtotal: Support - Cyber VSE Cost	-	-	0.232	-	-	0.022	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.000
Support - Navy Cyber Situational Awareness (NCSA) Cost																		
9.1) NCSA - Production Support	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.087	-	-	0.000	-	-	0.087
9.2) NCSA - DSA	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.175	-	-	0.000	-	-	0.175

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Exhibit P-5, Cost Analysis: FY 2018 Navy													Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15						P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)							Item Number / Title [DODIC]: 1 / Info Systems Security Program (ISSP)					
ID Code (A=Service Ready, B=Not Service Ready) :										MDAP/MAIS Code:								
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Subtotal: Support - Navy Cyber Situational Awareness (NCSA) Cost	-	-	0.000	-	-	0.000	-	-	0.000	-	-	0.262	-	-	0.000	-	-	0.262
Gross/Weapon System Cost	-	-	59.464	-	-	2.798	-	-	1.323	-	-	4.000	-	-	0.000	-	-	4.000

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

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<b>Exhibit P-5a, Procurement History and Planning: FY 2018 Navy</b>								<b>Date:</b> May 2017				
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 15				<b>P-1 Line Item Number / Title:</b> 3415 / Info Systems Security Program (ISSP)				<b>Item Number / Title [DODIC]:</b> 1 / Info Systems Security Program (ISSP)				

<b>Cost Elements</b>	<b>O C O</b>	<b>FY</b>	<b>Contractor and Location</b>	<b>Method/Type or Funding Vehicle</b>	<b>Location of PCO</b>	<b>Award Date</b>	<b>Date of First Delivery</b>	<b>Qty (Each)</b>	<b>Unit Cost (\$ K)</b>	<b>Specs Avail Now?</b>	<b>Date Revision Available</b>	<b>RFP Issue Date</b>
1.1.1) PKI - Procurement		2016	SPAWAR Systems Center (SSC) Atlantic / Charleston, SC	WR	Charleston, SC	Feb 2016	Mar 2016	15,010	0.105	Y		
1.1.1) PKI - Procurement		2017	Defense Manpower Data Center (DMDC) / Alexandria, VA	WR	Alexandria, VA	Feb 2017	Mar 2017	10	88.500	Y		
1.1.1) PKI - Procurement		2018	Defense Manpower Data Center (DMDC) / Alexandria, VA	WR	Alexandria, VA	Feb 2018	Mar 2018	10	88.500	Y		
2.1.1) Cyber VSE - Procurement		2016	Georgia Tech Research Institute / Atlanta, GA	FFRDC	Atlanta, GA	Mar 2016	Apr 2016	4	129.750	Y		
3.1.1) NCSA - Procurement		2018	SPAWAR Systems Center (SSC) Pacific / San Diego, CA	WR	San Diego, CA	Mar 2018	May 2018	2	900.000	Y		

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 15			<b>P-1 Line Item Number / Title:</b> 3415 / Info Systems Security Program (ISSP)		<b>Modification Number / Title:</b> 2 / Computer Network Defense (CND) Increment 2- Ashore (DA070)	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	105.283	30.438	25.995	24.153	0.000	24.153
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	105.283	30.438	25.995	24.153	0.000	24.153
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
<b>Total Obligation Authority</b> <i>(\$ in Millions)</i>	<b>105.283</b>	<b>30.438</b>	<b>25.995</b>	<b>24.153</b>	<b>0.000</b>	<b>24.153</b>
<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>	-	-	-	-	-	-
<p><b>Description:</b></p> <p>Computer Network Defense (CND) ashore systems represent multiple CND architectures/capabilities within each build that are specifically procured for each site based on the site mission and latest cyber threat. CND builds and variants are specifically designed to each site in accordance with CND's rapid Information Technology (IT) fielding construct. Shore sites include IT for the 21st Century (IT-21) Networks Operation Centers (NOC), Outside the Continental United States (OCONUS) Navy Enterprise Network (ONE-Net) Theater Network Operations and Security Centers (TNOSC) and Local Network Service Centers (LNSC), Broadcast Control Authorities (BCA), Navy Cyber Defense Operations Command (NCDOC), and CND production labs. CND also provides ashore infrastructure to provision the latest cyber security updates to all afloat tactical units (including CANES, ISNS and other networks) and roll up data to NCDOC. CND will deploy technologies to shore commands and the shore-based afloat infrastructure to improve network defense and security wholeness, countering intruders and attacks aimed at disrupting tactical communications at the afloat gateways and shore commands; this will accelerate the Navy's ability to prevent, constrain, and mitigate cyber-attacks and critical vulnerabilities, as well as provide greater resiliency, awareness, data analytics, redundancy, and diversity into the Navy's Defense-in-Depth (DiD) strategy. CND shore sites will have modern network sensors, improving the ability to detect unusual network patterns and prevent/deter malicious attacks. The Virtual Training Environment (VTE) initiative supports equipment upgrades at the Navy schoolhouses. The Pre-Planned Product Improvement (P3I) initiative replaces end-of-life equipment at NCDOC with more robust capability. CND will upgrade NCDOC's sensor grids and data correlation tools, and enhance the command's Cyber Defense Mission Support System (CDMSS) architectural framework to provide the necessary storage capability and processing power to ingest and analyze increased volumes of data from additional sources; NCDOC will then disseminate information to Navy decision makers as their roles require. CND will continue to support Cybersafe control points and protect IT-enabled systems.</p> <p>CND Inc 2 ashore procurement/installation quantities represent multiple CND architectures with an assortment of builds that are specifically designed to each site. Costs vary by site and variant.</p> <p>SHARKCAGE procurements previously budgeted under CND have been broken out into a separate P-3a for greater visibility into cybersecurity beginning in FY18.</p>						

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 15			<b>P-1 Line Item Number / Title:</b> 3415 / Info Systems Security Program (ISSP)		<b>Modification Number / Title:</b> 2 / Computer Network Defense (CND) Increment 2- Ashore (DA070)	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Models of Systems Affected:</b> [No Model Specified]		<b>Modification Type:</b> TBD			<b>Related RDT&amp;E PEs:</b> 0303140N	
<b>Financial Plan</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
<b>Procurement</b>						
<b>Modification Item 1 of 1:</b> Computer Network Defense (CND) Increment 2- Ashore (DA070)						
A Kits						
Recurring						
1.1.1) Networks Operation Centers (NOC) - NonOrganic <sup>(11)</sup>	20 / 22.667	5 / 5.354	4 / 3.739	4 / 3.630	- / -	4 / 3.630
1.1.2) Navy Cyber Defense Operations Command (NCDOC) - NonOrganic	6 / 8.015	2 / 2.193	2 / 2.014	2 / 1.944	- / -	2 / 1.944
1.1.3) Theater Network Operations & Security Center (TNOSC) - NonOrganic	13 / 15.049	5 / 5.880	3 / 2.764	3 / 2.680	- / -	3 / 2.680
1.1.4) Broadcast Control Authorities (BCA) - NonOrganic	12 / 5.404	4 / 0.603	4 / 0.661	4 / 0.684	- / -	4 / 0.684
1.1.5) Navy Enterprise Network (ONE-Net) Local Network Service Centers (LNSC) - NonOrganic <sup>(12)</sup>	13 / 1.488	- / -	11 / 0.770	- / -	- / -	- / -
1.1.6) Fixed Submarine Broadcast System (FSBS) - NonOrganic	- / -	- / -	7 / 2.000	7 / 2.080	- / -	7 / 2.080
<b>Subtotal: Recurring</b>	<b>- / 52.623</b>	<b>- / 14.030</b>	<b>- / 11.948</b>	<b>- / 11.018</b>	<b>- / -</b>	<b>- / 11.018</b>
B Kits						
Recurring						
2.1.1) P3I: NCDOC Upgrade - Organic <sup>(13)</sup>	2 / 10.826	1 / 1.400	1 / 1.842	1 / 1.916	- / -	1 / 1.916
2.1.2) Virtual Training Environment - Organic <sup>(14)</sup>	1 / 1.655	1 / 1.056	1 / 0.765	1 / 0.795	- / -	1 / 0.795
2.1.3) CND Production Labs - Organic <sup>(15)</sup>	12 / 16.954	3 / 3.570	3 / 3.863	3 / 4.017	- / -	3 / 4.017
<b>Subtotal: Recurring</b>	<b>- / 29.435</b>	<b>- / 6.026</b>	<b>- / 6.470</b>	<b>- / 6.728</b>	<b>- / -</b>	<b>- / 6.728</b>
<b>Subtotal: Computer Network Defense (CND) Increment 2- Ashore (DA070)</b>	<b>79 / 82.058</b>	<b>21 / 20.056</b>	<b>36 / 18.418</b>	<b>25 / 17.746</b>	<b>- / -</b>	<b>25 / 17.746</b>
<b>Subtotal: Procurement, All Modification Items</b>	<b>- / 82.058</b>	<b>- / 20.056</b>	<b>- / 18.418</b>	<b>- / 17.746</b>	<b>- / -</b>	<b>- / 17.746</b>
<b>Support (All Modification Items)</b>						
3.1) Train-the-Trainer	- / 2.355	- / 0.800	- / 0.891	- / 0.924	- / 0.000	- / 0.924
3.2) Production Support	- / 4.030	- / 0.916	- / 0.755	- / 0.782	- / 0.000	- / 0.782
3.3) DSA	- / 2.971	- / 0.771	- / 0.747	- / 0.594	- / 0.000	- / 0.594
<b>Subtotal: Support</b>	<b>- / 9.356</b>	<b>- / 2.487</b>	<b>- / 2.393</b>	<b>- / 2.300</b>	<b>- / -</b>	<b>- / 2.300</b>
<b>Installation</b>						

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 15		<b>P-1 Line Item Number / Title:</b> 3415 / Info Systems Security Program (ISSP)			<b>Modification Number / Title:</b> 2 / Computer Network Defense (CND) Increment 2- Ashore (DA070)	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Models of Systems Affected:</b> [No Model Specified]		<b>Modification Type:</b> TBD			<b>Related RDT&amp;E PEs:</b> 0303140N	
<b>Financial Plan</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>	<i>Qty (Each) / Total Cost (\$ M)</i>
<b>Modification Item 1 of 1:</b> Computer Network Defense (CND) Increment 2- Ashore (DA070)	- / 13.869	- / 7.895	- / 5.184	- / 4.107	- / 0.000	- / 4.107
<i>Subtotal: Installation</i>	- / 13.869	- / 7.895	- / 5.184	- / 4.107	- / -	- / 4.107
<b>Total</b>						
<b>Total Cost (Procurement + Support + Installation)</b>	<b>105.283</b>	<b>30.438</b>	<b>25.995</b>	<b>24.153</b>	<b>0.000</b>	<b>24.153</b>

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy						<b>Date:</b> May 2017							
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 15				<b>P-1 Line Item Number / Title:</b> 3415 / Info Systems Security Program (ISSP)				<b>Modification Number / Title:</b> 2 / Computer Network Defense (CND) Increment 2- Ashore (DA070)					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :								<b>MDAP/MAIS Code:</b>					
<b>Modification Item 1 of 1:</b> Computer Network Defense (CND) Increment 2- Ashore (DA070)													
<b>Manufacturer Information</b>													
Manufacturer Name: CND Equipment - SPAWAR System Center (SSC) Atlantic						Manufacturer Location: Charleston, SC							
Administrative Leadtime <i>(in Months)</i> : 2						Production Leadtime <i>(in Months)</i> : 3							
<b>Dates</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018</b>							
Contract Dates		Dec 2015		Dec 2016		Dec 2017							
Delivery Dates		Mar 2016		Mar 2017		Mar 2018							
<b>Installation Information</b>													
<b>Method of Implementation:</b> Installed:: Installation Name: Computer Network Defense (CND) Increment 2- Ashore													
<b>Installation Cost</b>		<b>Prior Years</b>		<b>FY 2016</b>		<b>FY 2017</b>		<b>FY 2018 Base</b>		<b>FY 2018 OCO</b>		<b>FY 2018 Total</b>	
		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		59 / 13.869		5 / 2.108		- / -		- / -		- / -		- / -	
FY 2016		- / -		16 / 5.787		- / -		- / -		- / -		- / -	
FY 2017		- / -		- / -		31 / 5.184		- / -		- / -		- / -	
FY 2018		- / -		- / -		- / -		20 / 4.107		0 / 0.000		20 / 4.107	
Total		59 / 13.869		21 / 7.895		31 / 5.184		20 / 4.107		0 / 0.000		20 / 4.107	
<b>Installation Schedule</b>													
	<b>PYS</b>	<b>FY 2016</b>				<b>FY 2017</b>				<b>FY 2018</b>			
		<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
In	59	5	-	4	12	-	21	-	10	-	10	-	10
Out	59	5	-	2	13	1	21	-	10	-	10	-	10
<b>Footnotes:</b>													
(11) Networks Operation Centers (NOC) - Quantities represents multiple CND architectures/capabilities within each build that are specifically procured for each site based on the site mission and latest cyber threat.													
(12) Navy Enterprise Network (ONE-Net) Local Network Service Centers (LNSC) - ONE-Net security initiative is a reconfiguration effort to create increased failover capability between ONE-Net sites. Tech refresh occurs every three years.													
(13) Pre-Planned Product Improvement (P3I) - FY18 unit cost increase reflects a more robust cybersecurity capability required to support the Navy Cyber Defense Operations Command (NCDOC) mission in order to address the latest cyber													
(14) Virtual Training Environment - Unit cost increases reflect a more robust annual system upgrade to the current CND architecture based on the current cyber threat. CND is designated Training Support Agent (TSA). CND is required to transition equipment to an approved solution at the schoolhouses. Mandatory system upgrades required annually. No associated install costs.													



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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 15	<b>P-1 Line Item Number / Title:</b> 3415 / Info Systems Security Program (ISSP)	<b>Modification Number / Title:</b> 2 / Computer Network Defense (CND) Increment 2- Ashore (DA070)
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :		<b>MDAP/MAIS Code:</b>
<div>(15) CND Production Labs - Unit cost increases reflect a more robust system upgrade to the current CND architecture for production representative systems. No associated install costs.</div>		

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy					<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 15		<b>P-1 Line Item Number / Title:</b> 3415 / Info Systems Security Program (ISSP)			<b>Modification Number / Title:</b> 3 / Navy Cryptography (Crypto) - Afloat (DA071)	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :				<b>MDAP/MAIS Code:</b>		
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	471.068	37.221	33.343	28.512	0.000	28.512
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	471.068	37.221	33.343	28.512	0.000	28.512
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
<b>Total Obligation Authority</b> <i>(\$ in Millions)</i>	<b>471.068</b>	<b>37.221</b>	<b>33.343</b>	<b>28.512</b>	<b>0.000</b>	<b>28.512</b>
<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>	-	-	-	-	-	-
<p><b>Description:</b></p> <p>The Navy Crypto program is designated as Department of Navy's (DoN) Cryptographic Modernization Program Office (CMPO). CMPO procures, installs, and provides life-cycle support for National Security Agency (NSA) Type-1 end cryptographic units for United States Navy (USN) (to include Military Sealift Command (MSC) platforms), United States Marine Corps (USMC), and United States Coast Guard (USCG). Navy Cryptography (Crypto) afloat equipment includes: Families of Communications Security (COMSEC) and Transmission Security (TRANSEC) devices that are divided into crypto voice, crypto data, crypto products and associated ancillary devices. These devices provide modern cryptographic solutions to replace obsolete, legacy devices within the crypto categories for all Services.</p> <p>Crypto Data products include KIV-7M (COMSEC Serial Crypto Replacement), KW-46, Cryptographic Universal Enclosures (CUE), In-Line Network Encryptors (INE), and KGV-11M TRANSEC.</p> <p>Crypto Voice products include VINSON/Advanced Narrowband Digital Voice Terminal Cryptographic Modernization (VACM).</p> <p>Space and Naval Warfare Systems Command (SPAWAR) is the VACM Central Procuring Agency for the USN to include the MSC, Naval Air Systems Command (NAVAIR), USMC and USCG.</p>						

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Exhibit P-3a, Individual Modification: FY 2018 Navy				Date: May 2017		
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 15		P-1 Line Item Number / Title: 3415 / Info Systems Security Program (ISSP)			Modification Number / Title: 3 / Navy Cryptography (Crypto) - Afloat (DA071)	
ID Code (A=Service Ready, B=Not Service Ready) :				MDAP/MAIS Code:		
Models of Systems Affected: [No Model Specified]		Modification Type: TBD			Related RDT&E PEs: 0303140N	
Financial Plan	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Procurement						
Modification Item 1 of 1: Navy Cryptography (Crypto) - Afloat (DA071)						
B Kits						
Recurring						
1.1.1) Crypto (PY) - Organic993 / 10.146- / - - / - - / - - / -						
1.1.2) Crypto (PY) (Installed) - NonOrganic415 / 267.648- / - - / - - / - - / -						
1.1.3) In-Line Network Encryptors (INE) - Organic4,695 / 62.622154 / 1.848103 / 1.236232 / 2.784- / - 232 / 2.784						
1.1.5) KW-46 - NonOrganic106 / 3.18547 / 1.38768 / 2.007- / - - / - - / -						
1.1.6) COMSEC Serial Crypto Replacement (Phase II) - NonOrganic61 / 1.07933 / 0.57818 / 0.3605 / 0.100- / - 5 / 0.100						
1.1.7) Cryptographic Universal Enclosures (CUE) CSRR - NonOrganic38 / 8.7819 / 1.0247 / 0.8054 / 0.463- / - 4 / 0.463						
1.1.8) VINSON/Advanced Narrowband Digital Voice Terminal CM (VACM) - NonOrganic <sup>(16)</sup> - / - 50 / 11.50037 / 8.51039 / 8.970- / - 39 / 8.970						
Subtotal: Recurring- / 353.461- / 16.337- / 12.918- / 12.317- / - - / 12.317						
Subtotal: Navy Cryptography (Crypto) - Afloat (DA071)6,308 / 353.461293 / 16.337233 / 12.918280 / 12.317- / - 280 / 12.317						
Subtotal: Procurement, All Modification Items- / 353.461- / 16.337- / 12.918- / 12.317- / - - / 12.317						
Support (All Modification Items)						
2.1) Production Support- / 23.511- / 0.593- / 0.441- / 0.456- / - - / 0.456						
2.2) DSA <sup>(17)</sup> - / 23.922- / 7.459- / 6.195- / 4.696- / - - / 4.696						
Subtotal: Support- / 47.433- / 8.052- / 6.636- / 5.152- / - - / 5.152						
Installation						
Modification Item 1 of 1: Navy Cryptography (Crypto) - Afloat (DA071)- / 70.174- / 12.832- / 13.789- / 11.043- / 0.000- / 11.043						
Subtotal: Installation- / 70.174- / 12.832- / 13.789- / 11.043- / - - / 11.043						
Total						
Total Cost (Procurement + Support + Installation)471.06837.22133.34328.5120.00028.512						

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy		<b>Date:</b> May 2017	
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 15		<b>P-1 Line Item Number / Title:</b> 3415 / Info Systems Security Program (ISSP)	
		<b>Modification Number / Title:</b> 3 / Navy Cryptography (Crypto) - Afloat (DA071)	
<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :		<b>MDAP/MAIS Code:</b>	
<b>Modification Item 1 of 1:</b> Navy Cryptography (Crypto) - Afloat (DA071)			
<b>Manufacturer Information</b>			
Manufacturer Name: KW-46 - Raytheon (NSA)		Manufacturer Location: Columbia, MD	
Administrative Leadtime ( <i>in Months</i> ): 4		Production Leadtime ( <i>in Months</i> ): 7	
<b>Dates</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>
Contract Dates	Feb 2016	Feb 2017	
Delivery Dates	Sep 2016	Sep 2017	
Manufacturer Name: Communications Security (COMSEC) (Phase II) - Raytheon (NSA)		Manufacturer Location: Waltham, MA	
Administrative Leadtime ( <i>in Months</i> ): 4		Production Leadtime ( <i>in Months</i> ): 7	
<b>Dates</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>
Contract Dates	Feb 2016	Feb 2017	Feb 2018
Delivery Dates	Sep 2016	Sep 2017	Sep 2018
Manufacturer Name: VINSON/Advanced Narrowband Digital Voice Terminal CM (VACM) - Raytheon (USAF)		Manufacturer Location: Largo, FL	
Administrative Leadtime ( <i>in Months</i> ): 2		Production Leadtime ( <i>in Months</i> ): 12	
<b>Dates</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>
Contract Dates	Dec 2016	Dec 2016	Dec 2017
Delivery Dates	Dec 2017	Dec 2017	Dec 2018
Manufacturer Name: Cryptographic Universal Enclosures (CUE) - CSRR - SPAWAR Systems Center (SSC) Pacific		Manufacturer Location: San Diego, CA	
Administrative Leadtime ( <i>in Months</i> ): 4		Production Leadtime ( <i>in Months</i> ): 7	
<b>Dates</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>
Contract Dates	Feb 2016	Feb 2017	Feb 2018
Delivery Dates	Sep 2016	Sep 2017	Sep 2018
Manufacturer Name: In-Line Network Encryptors (INE) - NSA		Manufacturer Location: Fort Meade, MD	
Administrative Leadtime ( <i>in Months</i> ): 3		Production Leadtime ( <i>in Months</i> ): 7	
<b>Dates</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>
Contract Dates	Jan 2016	Jan 2017	Jan 2018
Delivery Dates	Aug 2016	Aug 2017	Aug 2018

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<b>Exhibit P-3a, Individual Modification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 15	<b>P-1 Line Item Number / Title:</b> 3415 / Info Systems Security Program (ISSP)	<b>Modification Number / Title:</b> 3 / Navy Cryptography (Crypto) - Afloat (DA071)

<b>ID Code</b> (A=Service Ready, B=Not Service Ready) :	<b>MDAP/MAIS Code:</b>
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**Modification Item 1 of 1:** Navy Cryptography (Crypto) - Afloat (DA071)

**Installation Information**

**Method of Implementation:** Installed:: Installation Name: Navy Cryptography (Crypto) - Afloat

Installation Cost	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	521 / 70.174	99 / 10.777	- / -	- / -	- / -	- / -
FY 2016	- / -	19 / 2.055	120 / 11.851	- / -	- / -	- / -
FY 2017	- / -	- / -	21 / 1.938	109 / 10.605	0 / 0.000	109 / 10.605
FY 2018	- / -	- / -	- / -	2 / 0.438	0 / 0.000	2 / 0.438
Total	521 / 70.174	118 / 12.832	141 / 13.789	111 / 11.043	0 / 0.000	111 / 11.043

**Installation Schedule**

	PYS	FY 2016				FY 2017				FY 2018			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
In	499	22	34	30	35	19	33	20	23	65	39	33	34
Out	499	21	34	31	33	21	33	20	23	65	39	33	34

**Footnotes:**

<sup>(16)</sup> VINSON/Advanced Narrowband Digital Voice Terminal Crypto Modernization (VACM) Afloat NonOrganic (Installed) quantities are grouped per ship set/platform. FY18 reflects an increase in VACM procurements due to shift in United States Air Force (USAF) schedule. Procurement profile aligns to fielding plan and type of platform requiring installation; Top Secret (TS) platforms are the priority and then Secret (S). VACM procurement unit cost updated to reflect projected Full Rate Production (FRP) contract pricing and average cost per device. VACM installation costs updated to reflect current fielding plan and type of platform requiring installation.

<sup>(17)</sup> Design Service Allocation (DSA) costs decrease in FY18 due to completion of KW-46 fielding, which accounts for majority of DSA costs.

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy										<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 15: Cryptographic Equipment							<b>P-1 Line Item Number / Title:</b> 3417 / MIO Intel Exploitation Team					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A				<b>Program Elements for Code B Items:</b> N/A				<b>Other Related Program Elements:</b> N/A				
<b>Line Item MDAP/MAIS Code:</b> N/A												
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>To Complete</b>	<b>Total</b>
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	1.978	0.970	0.920	0.961	0.000	0.961	0.979	0.999	1.020	1.040	-	8.867
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	1.978	0.970	0.920	0.961	0.000	0.961	0.979	0.999	1.020	1.040	-	8.867
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority</b> <i>(\$ in Millions)</i>	<b>1.978</b>	<b>0.970</b>	<b>0.920</b>	<b>0.961</b>	<b>0.000</b>	<b>0.961</b>	<b>0.979</b>	<b>0.999</b>	<b>1.020</b>	<b>1.040</b>	<b>-</b>	<b>8.867</b>
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
<b>Description:</b> [P40A / 343SA - Maritime Interdiction Operations Intel Exploitation Team]: Tactical Electronic Warfare Equipment: Procure Tactical Electronic Warfare (EW) equipment to be used in support of Indications and Warning and Force Protection. The capability includes an array of Tactical EW systems capable of both digital and analogue collection in the Radio Frequency (RF) environment. Specific collection capabilities include Digital and Analogue data collection; Specific Emitter ID, which discerns unique attributes of specific radar; Satellite Communication capability; Wireless Networks to conduct surveys, which is a telecom network mapping, and Document and Media Exploitation allowing capture of media from electronic devices.												
<b>Justification:</b> The FY18 funding request supports the procurement of eight (8) digital and/or analogue devices that facilitate the transmission and collection of information by Intelligence Exploitation Teams, usually through electronic audio or video signals.												

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy										<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 16: Cryptologic Equipment							<b>P-1 Line Item Number / Title:</b> 3501 / Cryptologic Communications Equip					
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A				<b>Program Elements for Code B Items:</b> N/A				<b>Other Related Program Elements:</b> N/A				
<b>Line Item MDAP/MAIS Code:</b> N/A												
<b>Resource Summary</b>	<b>Prior Years</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>To Complete</b>	<b>Total</b>
Procurement Quantity ( <i>Units in Each</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost ( <i>\$ in Millions</i> )	60.554	11.433	21.098	11.287	2.280	13.567	11.448	12.408	14.336	14.258	-	159.102
Less PY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) ( <i>\$ in Millions</i> )	60.554	11.433	21.098	11.287	2.280	13.567	11.448	12.408	14.336	14.258	-	159.102
Plus CY Advance Procurement ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Obligation Authority</b> ( <i>\$ in Millions</i> )	<b>60.554</b>	<b>11.433</b>	<b>21.098</b>	<b>11.287</b>	<b>2.280</b>	<b>13.567</b>	<b>11.448</b>	<b>12.408</b>	<b>14.336</b>	<b>14.258</b>	<b>-</b>	<b>159.102</b>
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>												
Initial Spares ( <i>\$ in Millions</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost ( <i>\$ in Thousands</i> )	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost ( <i>\$ in Thousands</i> )	-	-	-	-	-	-	-	-	-	-	-	-
<b>Description:</b> <p>[P5 / 1V045 Access Systems &amp; Subsystems]: Cryptologic Carry-On Equipment: The Cryptologic Carry-On Program (CCOP) procures state-of-the-art, commercial off-the-shelf signal acquisition equipment (hardware and software) in response to combatant commander requirements for a quick-reaction surface, subsurface, and airborne cryptologic carry-on capability. The equipment is procured according to the overall requirements detailed in the Shipboard Information Warfare/Cryptologic System Operational Requirements Document and specific execution year fleet requirements as defined by the Signals Of Interest (SOI) Integrated Product Team (IPT) and in concert with Shipboard Signals Exploitation Space (SSES) programs to ensure synergy and seamless transition to permanently installed SSES systems. The IPT meets several times a year and determines which SOIs/Targets on the SOI list need to be addressed. Due to a continually changing threat environment, detailed requirements are dynamic and equipment procured varies each year by quantity and type. Equipment suites can be configured for many targets and tasking. Target specific subsystems can either operate as stand-alone within cryptologic spaces or as an add-on to existing equipment. Hardware procurement includes: receivers, recorders, tactical computers and related peripherals, antennas, electronic-warfare support measures systems, precision geolocation equipment, advanced signal and search equipment including spectrum analyzers and associated portable special intelligence communications equipment. CCOP equipment is installed as an augment to cryptologic capabilities on subsurface, surface, and air platforms. There are approximately 124 cryptologic capable surface ships and shore sites in the current Navy inventory. Each of these are potential users of this carry-on equipment, as are subsurface and air platforms. The temporary installation of equipment is coordinated through fleet electronic support personnel; inventory allocation is managed by USFF. A primary system in inventory is the Carry On Radio Spectrum Analysis &amp; Intelligence Reporting (CORSAIR) system. Funds continue to procure CORSAIR core architecture system upgrades to provide additional affordable functionality to the combatant commands. Additional signal acquisition equipment to address specific combatant command requirements include such systems as Digital Receiver Technology (DRT), Hostile forces Integrated Targeting Service (HITS), Maritime Toxic Pen (MTP), TURBULENTWAVE/TURBULENTWIND/TURBULENTSAIL, BLUESTREAM servers, RED FALCON/VULCAN, STINGRAY, MUDCAT, Toxic Fog, Radio Frequency Distribution Unit (RFDU), TEAPARTY/TEALEAF, and Generic Area Limitations Environment (GALE)-Lite. This line also supports the procurement of STALLION hardware for CCOP team training.</p> <p>[P5 / Global Signal Analysis Laboratory (GSAL)]: GDX6D - GLOBAL SIGNAL ANALYSIS LABORATORY (GSAL): The Navy GSAL program, under project name CLASSIC SENSEI, provides for the timely analysis of data derived from maritime mobile Information Warfare (IW) operations. GSAL support is conducted by Signals Analysis Laboratories (SAL) co-located with Fleet Information Operations Centers (FIOC) at theater-level analysis and processing centers and by QuickLook/Nodes forward-based at fleet concentration areas. The GSAL program office equips the SAL's with advanced signals analysis capabilities in order to accomplish the high order analysis that is required to effectively address SAL processing and exploitation requirements in support of both maritime tactical and national strategic IW objectives. Additionally, SAL's are equipped with specialized capabilities to support FIOC maritime Signal Descriptor File (SDF) requirements. Funding is required to maintain and sustain SAL operations while allowing for upgrades required to integrate new technology to accommodate the highly technical analysis requirements attendant with a highly diverse and constantly changing electromagnetic environment. Additionally, Navy SAL's are integral components of the global collaborative enterprise architecture via the GSAL LABLINK data handling subsystem. LABLINK provides for advanced data manipulation, achieving, and forwarding/exchange while providing connectivity and global reachback in support of analysis with collaborating military, national, and international partners via signal screening and processing</p>												

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 16: Cryptologic Equipment		P-1 Line Item Number / Title: 3501 / Cryptologic Communications Equip
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
tools resident in LABLINK. GSAL theater-level laboratories are located at NIOC Hawaii (Pacific SAL), and NIOC Ft Gordon, Georgia (Atlantic SAL). Forward-based screening and forwarding QuickLook/Nodes are located at Souda Bay, Crete (potential relocation within the European theater), NIOC Bahrain, and a future installation at Kadena, Japan. Other GSAL facilities are located at NIOC Yokosuka, Japan, and at the Naval Information Warfare Activity (NIWA).		
GDX6D - Global Signal Analysis - The variance in unit cost between FY17 to FY18 is due to the transition from LABLINK III (existing equipment) to LABLINK IV (next generation equipment). Increase in cost between FY17 and FY18 is due to the fact that in FY17 the program plans to procure 1 unit with an average unit cost of \$746; for FY18 the program plans to procure another unit with a slightly higher cost due to advancement in technology, increased storage requirements and an increased cost to new controller which increased the cost of each system significantly. The roll out of LABLINK IV is schedule to start FY17 and will continue through FY 20.		
[P5 / GDX6D - System Integration and Installation of Hardware]: Fleet Information Operations Centers (FIOC): There are FIOCs co-located with National Security Agency (NSA) Cryptologic Centers supporting the geographical Satellite Communication Network (SATCOM). Each are charged with providing regionally focused Information Operation (IO) and Signal Intelligence (SIGINT) support to Fleet Commanders. FIOCs leverage NSA capabilities, analysis, and manpower in support of Fleet requirements. Funds are required for purchasing and maintaining life cycle support for command and control systems connected to SCI networks at the FIOCs. Funds are also provided to develop and maintain a common baseline of analytical intelligence software tools supporting FIOC capability areas as defined in the FIOC operational strategy (OPSTRAT).		
[P5 / System Integration & Installation of Hardware (FIOC)]: "GDX8D - NAVY ELECTRONIC INTELLIGENCE (ELINT): Procure SECAPs a technology insertion approach, not system approach to current system capabilities. SECAP will provide tactical commanders with enhanced Electronic Support capabilities allowing for increased search, detection and data collection in support of a variety of surface ship requirements. Procure Network Centric Electronic Warfare Support which facilitates a fused tactical Electronic Warfare Support picture which facilitates an automated two-way intelligence feed of organic and non-organic ELINT for analysis and fusion utilizing Generic Area Limitation Environment (GALE) 5.0 software inside SLQ-32B consoles. This technology will enable deployed Strike Groups and Shore nodes to receive and transmit all forms of ELINT simultaneously which can cue overhead and organic sensors and populate a Common Intelligence/Common Operation Picture (CIP/COP). "GDX6D - FLEET INFORMATION OPERATIONS CENTERS (FIOC): There are FIOCs co-located with National Security Agency (NSA) Cryptologic Centers located at Georgia, Hawaii, Maryland, Texas, Digby, United Kingdom and High Castle/CMASS each supporting the geographical Satellite Communication Network (SATCOM). Each are charged with providing regionally focused Information Operation (IO) and Signal Intelligence (SIGINT) support to Fleet Commanders. FIOCs respond to Fleet requests for IO and SIGINT personnel augmentation in theater, analytical requests, and planning in support of deliberate and crisis action planning. FIOCs leverage NSA capabilities, analysis, and manpower in support of Fleet requirements. Funds are required for purchasing and maintaining life cycle support for Global Command and Control Systems - Maritime (GCCS-M) connected to SCI networks at the FIOCs. Funds are also provided to develop and maintain a common baseline of analytical intelligence software tools supporting FIOC capability areas as defined in the FIOC operational strategy (OPSTRAT).		
GDX6D - System Integration & Installation of Hardware (FIOC) - The variance in unit cost between FY17 to FY18, is to support Top Secret / Sensitive Compartmented Information (TS-SCI) operational training/ assessments, life cycle sustainment/maintenance, shore-based architecture nodes, shoolhouse suites, SCI pack-up kits and equipment modernization.		
[P5 / Fleet Synthetic Training (FST) SIGINT/C-ISR]: The Department's Fleet Synthetic Training (FST) (SIGINT / C-ISR) initiative addresses the lack of realistic SIGINT / C-ISR during exercises supporting the Fleet Training Continuum (FTC). Addresses critical requirements for SIGINT and C-ISR in Fleet Synthetic Training (FST) required in preparing Intelligence personnel/teams for forward deployed operations.		
This effort provides the ability to exercise shipboard TS-SCI capabilities in an environment not subject to counter-detection. Improves staff operational planning and tactical decision making combined with improvements to overall Intelligence team readiness and certification throughout the Optimized-Fleet Response Plan (O-FRP). Supports Assured C2 and Cyber Situational Awareness/Cyber Defense and Enhanced Naval Network Environment (NNE) Information Dominance IPCLs. Builds upon GENSER NCTE (Navy Continuous Training Environment) to expand the existing GENSER NCTE with Above GENSER capabilities to include TS-SCI FST architecture/capabilities. Provides for architecture, capabilities and scenario build-out as well as required life-cycle management.		
This capability will enhance individual units and Strike Groups in exercising integrated kinetic and non-kinetic capabilities, to include operations/intelligence fusion required for comprehensive maritime operations and operational proficiency in Electromagnetic Maneuver Warfare (EMW). In FY 18, this will fund Life Cycle Management (LCM) of the TS/SCI NCTE node on the East Coast and 14 Portable Embarkation Kits (PEKs).		

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy		<b>Date:</b> May 2017
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 16: Cryptologic Equipment		<b>P-1 Line Item Number / Title:</b> 3501 / Cryptologic Communications Equip
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A	<b>Program Elements for Code B Items:</b> N/A	<b>Other Related Program Elements:</b> N/A
<b>Line Item MDAP/MAIS Code:</b> N/A		
<p><b>Justification:</b> FY18 funds will continue to satisfy signals exploitation capability gaps as determined by the Cryptologic Carry-on Program (CCOP) Signals of Interest (SOI) Integrated Product Team (IPT). At this time the recommendations for procurements that are best suited to address identified gaps may include: Digital Receiver Technology (DRT), Hostile forces Integrated Targeting Service (HITS), Maritime Toxic Pen (MTP), TURBULENTWAVE/TURBULENTWIND/TURBULENTSAIL, BLUESTREAM servers, RED FALCON/VULCAN, STINGRAY, MUDCAT, Toxic Fog, Radio Frequency Distribution Unit (RFDU), TEAPARTY/TEALEAF, and Generic Area Limitations Environment (GALE)-Lite, BLACKBIRD AND QUICKSHOT as well as Adaptive Mission Packages. This line supports the procurement of STALLION hardware for CCOP team training.</p> <p>FY18 funds will provide for the timely analysis of data derived from maritime mobile Information Warfare (IW) operations. GSAL support is conducted by Signals Analysis Laboratories (SAL) co-located with Fleet Information Operations Centers (FIOC) at theater-level analysis and processing centers and by QuickLook/Nodes forward-based at fleet concentration areas. The GSAL program office equips the SALs with advanced signals analysis capabilities in order to accomplish the high order analysis that is required to effectively address SAL processing and exploitation requirements in support of both maritime tactical and national strategic IW objectives. Additionally, SALs are equipped with specialized capabilities to support FIOC maritime Signal Descriptor File (SDF) requirements. Funding will be used for the procurement of upgrades (GSAL LABLINK data handling subsystem) to integrate new technology to accommodate the highly technical analysis requirements attendant with a highly diverse and constantly changing electromagnetic environment, while providing connectivity and global reachback in support of analysis with collaborating military, national, and international partners via signal screening and processing tools resident in LABLINK.</p> <p>OCO: FY18 Other Contingency Operations (OCO) funds to procure 11 Red Falcon Systems due to shortfall of systems available for platforms deploying to the United States Central Command area of responsibility (USCENTCOM AOR).</p>		

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy									Date: May 2017			
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 17: Other Electronic Support							P-1 Line Item Number / Title: 3620 / Coast Guard Equipment					
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A					Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A												
Resource Summary	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	To Complete	Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	102.457	2.529	32.291	36.584	0.000	36.584	45.655	43.826	67.619	59.861	Continuing	Continuing
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	102.457	2.529	32.291	36.584	0.000	36.584	45.655	43.826	67.619	59.861	Continuing	Continuing
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	102.457	2.529	32.291	36.584	0.000	36.584	45.655	43.826	67.619	59.861	Continuing	Continuing
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares (\$ in Millions)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Dollars)	-	-	-	-	-	-	-	-	-	-	-	-
Description:												
The Coast Guard Equipment line funds the Coast Guard Combat System Suite for United States Coast Guard (USCG) cutters under the Coast Guard Surface Asset Acquisition Program. Under inter-service agreement (delineated in OPNAVINST 4000.79B), DON plans, programs, and budgets for specific Navy military equipment, systems and logistic support requirements for Coast Guard units to ensure the Coast Guard is prepared to execute naval warfare tasks in consonance with US Navy units. Ship construction and installation costs are funded under the Department of Homeland Security appropriation.												
The Combat Systems and Weapons Suite will be aligned with future naval ship building programs to support commonality among the two Service's systems and meet National Fleet objectives.												
The Combat System Suite must compliment and integrate with Navy Combat Systems. The suite is an appropriate balance of equipment to ensure the Coast Guard is prepared to accomplish the assigned Naval Warfare tasks in concert with US Navy units. The Surface Asset Acquisition Program Combat Suites include the following:												
[P40A / CG001 - SPQ-9B RADAR]: Provides the AN/SPQ-9B radar for the Maritime Security Cutter, Large (WMSL) Class, aka the National Security Cutter, to track surface targets and low fliers in support of potential gun engagements.												
[P40A / IFF AIMS]: Provides the AN/UPX-29A Identification Friend or Foe (IFF) System for the WMSL Class and the Offshore Patrol Cuter (OPC) Class, aka the Maritime Security Cutter, Medium (WMSM). The AN/APX-123 Transponder is procured for the Fast Response Cutter (FRC) aka Patrol Coastal Cutter (WPC).												
[P40A / CG003 DECOYS MK 53]: Provides the MK 53 Mod 6 Decoy Launching System (DLS) for the WMSL and OPC Classes to provide soft-kill capability.												
[P40A / CG004 SLQ-32]: Provides the AN/SLQ-32 Electronic Warfare System and the Battle Force Electronic Warfare Trainer (BEWT) for the WMSL Class to perform Electronic Support Measures to support soft-kill measures.												
[P40A / CG005 MK 46/MK 20 OPTICAL SIGHT]: Provides the MK 46 Mod 1 Optical Sighting System (OSS) for WMSL 750-753. The MK 20 Mod 0 Electro-Optical Sighting System (EOSS) is procured for WMSL 754-757 and the OPC. These sighting systems are components of the MK48 Gun Weapon System (GWS) and provide fire control optical daytime and thermal imaging (infrared) sensor, and laser range finding to support engagements of hostile surface and air targets.												

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Exhibit P-40, Budget Line Item Justification: FY 2018 Navy		Date: May 2017
Appropriation / Budget Activity / Budget Sub Activity: 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 17: Other Electronic Support		P-1 Line Item Number / Title: 3620 / Coast Guard Equipment
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>[P40A / CG006 COMBAT SYSTEM INTEGRATION]: Ensures successful integration and system interoperability of Navy type equipment that affects the Combat System of USCG National Security Cutters (WMSLs), FRCs, OPC, and the '270 Medium Endurance Cutter (WMEC) modernization effort.</p> <p>[P40A / CG007 MULTI-MODE RADAR]: Provides the Multi-Mode Radar (MMR) to perform surface search, air search, and air traffic advisory control object detection and tracking functions for the OPC.</p> <p>FY2017-2018 MMR integration includes software upgrade to correlate radar contacts, radar video tracks and IFF information. Also includes the MMR hardware integration of the IFF antenna onto the MMR antenna (drawing updates and technical publications).</p> <p>[P40A / CG008 ATHENA CCD]: ATHENA Control, Correlation &amp; Display (CCD) System for the OPC. The ATHENA CCD uses existing AEGIS BSL 9, Common Source Library (CSL) code to control and display MMR and IFF data. The systems will also provide target queuing for Gun Weapon System engagement.</p> <p>FY2017-2018 ATHENA Combat System Control and Display integration supports software upgrade and hardware/software integration of the Technical Insertion (TI)-16 Common Display System for the MMR and IFF to provide data to the AN/SLQ-32(V)6 and the MK48 Gun Weapon System for target engagement on the OPC. Includes safety, certification, technical documentation, and information assurance efforts.</p> <p>[P40A / OPC C4I]: Funds are required for the procurement of Command, Control, Communications, Computers, and Intelligence (PEO C4I) for the new Offshore Patrol Cutter (OPC) Class, the Coast Guards highest acquisition priority. Under inter-service agreement, the Navy budgets for specific Navy military equipment, systems and logistic support requirements for Coast Guard units to ensure the Coast Guard is prepared to execute naval warfare tasks in consonance with US Navy units. Ship construction and installation costs are funded under the Department of Homeland Security appropriation. Specific C4I systems to be procured include: AN/SRC-65 VHF/UHF Line of Sight Satellite Communication, ARC-210 Radios (Qty 11 per ship); OE-570A Antenna Qty (1); Navy Modular Automated Communications System (AN/SYQ-26) Qty (2); Fleet Broadcast Qty (1); CRYPTO; OA-9277A Antenna Coupler Qty (1); and Command and Control Processor (C2P) AN/UYQ-120 Qty (2).</p>		

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<b>Exhibit P-40, Budget Line Item Justification:</b> FY 2018 Navy								<b>Date:</b> May 2017		
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N: Other Procurement, Navy / BA 02: Communications & Electronics Equip / BSA 17: Other Electronic Support						<b>P-1 Line Item Number / Title:</b> 3620 / Coast Guard Equipment				
<b>ID Code</b> (A=Service Ready, B=Not Service Ready): A			<b>Program Elements for Code B Items:</b> N/A			<b>Other Related Program Elements:</b> N/A				
<b>Line Item MDAP/MAIS Code:</b> N/A										
Exhibits Schedule					Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-40a	Coast Guard Equipment				- / 102.457	- / 2.529	- / 32.291	- / 36.584	- / -	- / 36.584
<b>P-40</b>	<b>Total Gross/Weapon System Cost</b>				<b>- / 102.457</b>	<b>- / 2.529</b>	<b>- / 32.291</b>	<b>- / 36.584</b>	<b>- / 0.000</b>	<b>- / 36.584</b>
<p>*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.</p> <p>Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.</p>										
<p><b>Justification:</b></p> <p>The growth in the FY 2018 funding request is attributable to increases by the Department to procure Navy Type/Navy Owned (NT/NO) combat system elements for the Congressionally added WMSL 758. Additionally funding was added across the FYDP to support the '270 Medium Endurance Cutter (WMEC) Combat System Modernization effort which will replace all unsupportable systems across the USCG cutter class achieving expected service life beyond FY2033.</p> <p>Funds procure NT/NO combat systems, support equipment, Integrated Logistics Support (ILS), certification, test and production support for USCG WMSLs, FRCs and OPCs being constructed under the Coast Guard Surface Asset Acquisition Program. These efforts are ongoing. FY2018 funds provide AN/SPQ-9B ILS support for WMSL 757; procure IFF AN/APX-123(V) equipment, ILS and certification support for FRCs; procure IFF UPX-29A equipment, INCO spares, and ILS support for OPC 2 and WMSL 758; support IFF ILS and certification for WMSLs 755-757; procure MK53 MOD 6 DLS for OPC 2 and WMSL 758; provide BEWT for WMSL 757; procure the EOSS for WMSL 758; provide combat system integration for WMSLs 756-758, FRCs 1120-1130, and OPCs 1-2; procure the Multi-mode Radar for the OPC 2; provide MMR hardware/software integration for the OPC and 270' Modernization efforts; and provide OPC combat system integration of the Technical Insertion (TI)-16 Common Display System and integration support for the ATHENA CCD System.</p> <p>Funds procure navy specific equipment, C4I systems, and integrated logistic support for the United States Coast Guard (USCG) Offshore Patrol Cutters (OPCs) under an inter-service agreement. FY 2018 funds support AN/SRC-65 VHF/UHF Line of Sight Satellite Communication (CRYPTO) , ARC-210 Radios ; OE-570A Antenna ; Navy Modular Automated Communications System (AN/SYQ-26) ; Fleet Broadcast ; OA-9277A Antenna Coupler ; and Command and Control Processor (C2P) AN/UYQ-120 .</p>										

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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy															Date: May 2017					
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 17							P-1 Line Item Number / Title: 3620 / Coast Guard Equipment							Aggregated Items Title: Coast Guard Equipment						
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 Total		
			Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$)	Qty (Each)	Total Cost (\$ M)
1) CG001 - SPQ-9B RADAR																				
1.1) SPQ-9B ILS/TEST SUPPORT <sup>(1)</sup>	A		-	-	5.613	-	-	0.277	-	-	0.370	-	-	0.444	-	-	-	-	-	0.444
1.2) SPQ-9B RADAR <sup>(2)</sup>	A		-	-	-	-	-	-	-	-	-	6,081K	1	6.081	-	-	-	6,081K	1	6.081
Subtotal: 1) CG001 - SPQ-9B RADAR			-	-	5.613	-	-	0.277	-	-	0.370	-	-	6.525	-	-	-	-	-	6.525
2) IFF AIMS																				
2.1) IFF AIMS CERTIFICATION WPC	A		-	-	0.440	-	-	0.116	-	-	0.125	-	-	0.127	-	-	-	-	-	0.127
2.2) IFF AIMS ILS SUPPORT WPC	A		-	-	1.041	-	-	0.205	-	-	0.214	-	-	0.218	-	-	-	-	-	0.218
2.3) IFF AIMS EQUIPMENT WPC <sup>(3)</sup>	A		113,384.62	26	2.948	128,000.00	3	0.384	103,250.00	3	0.310	142,500.00	3	0.428	-	-	-	142,500.00	3	0.428
2.4) IFF EQUIPMENT/ INCO SPARES WMSM <sup>(4)</sup>	A		-	-	-	-	-	-	110,000.00	1	0.110	477,000.00	1	0.477	-	-	-	477,000.00	1	0.477
2.5) IFF UPX-29A WMSM	A		-	-	-	-	-	-	912,000.00	1	0.912	929,000.00	1	0.929	-	-	-	929,000.00	1	0.929
2.6) IFF ILS SUPPORT WMSM	A		-	-	-	-	-	-	-	-	0.225	-	-	0.229	-	-	-	-	-	0.229
2.7) IFF AIMS WMSL <sup>(5)</sup>	A		4,435K	2	8.870	-	-	-	-	-	-	477,000.00	1	0.477	-	-	-	477,000.00	1	0.477
2.8) IFF AIMS UPX-29 LLT WMSL <sup>(6)</sup>	A		259,000.00	3	0.777	-	-	-	-	-	-	929,000.00	1	0.929	-	-	-	929,000.00	1	0.929
2.9) IFF AIMS MODIFICATION KITS	A		81,250.00	4	0.325	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.10) IFF AIMS SUPPORT EQUIPMENT WMSL	A		83,285.71	7	0.583	-	-	-	96,000.00	1	0.096	-	-	-	-	-	-	-	-	-
2.11) IFF AIMS PRODUCTION SUPPORT WMSL	A		-	-	0.611	-	-	0.067	-	-	0.068	-	-	0.035	-	-	-	-	-	0.035
2.12) IFF AIMS ILS/TEST SUPPORT WMSL <sup>(7)</sup>	A		-	-	0.843	-	-	0.045	-	-	0.046	-	-	0.277	-	-	-	-	-	0.277
2.13) IFF AIMS CERTIFICATION WMSL	A		-	-	0.384	-	-	-	-	-	0.075	-	-	0.079	-	-	-	-	-	0.079
Subtotal: 2) IFF AIMS			-	-	16.822	-	-	0.817	-	-	2.181	-	-	4.205	-	-	-	-	-	4.205
3) CG003 DECOYS MK 53																				
3.1) MK53 MOD 6 DLS WMSM	A		-	-	-	-	-	-	1,208K	1	1.208	1,231K	1	1.231	-	-	-	1,231K	1	1.231



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Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy														Date: May 2017						
Appropriation / Budget Activity / Budget Sub Activity: 1810N / 02 / 17						P-1 Line Item Number / Title: 3620 / Coast Guard Equipment								Aggregated Items Title: Coast Guard Equipment						
Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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)
3.2) MK53 MOD 6 DLS WMSL <sup>(8)</sup>	A		-	-	-	-	-	-	-	-	-	1,231K	1	1.231	-	-	-	1,231K	1	1.231
3.3) MK53 ILS/TEST SUPPORT <sup>(9)</sup>	A		-	-	3.705	-	-	0.199	-	-	0.375	-	-	0.979	-	-	-	-	-	0.979
Subtotal: 3) CG003 DECOYS MK 53			-	-	3.705	-	-	0.199	-	-	1.583	-	-	3.441	-	-	-	-	-	3.441
4) CG004 SLQ-32																				
4.1) BEWT WMSL <sup>(10)</sup>	A		1,017K	1	1.017	-	-	0.036	-	-	0.022	-	-	0.022	-	-	-	-	-	0.022
4.2) SLQ-32 ELECTRONIC WARFARE SYSTEM	A		14,090K	2	28.180	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.3) SLQ-32 REFURBISHMENT	A		2,310K	3	6.931	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.4) SLQ-32 SUPPORT EQUIPMENT	A		159,000.00	1	0.159	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.5) SLQ-32 PRODUCTION SUPPORT WMSL	A		-	-	2.030	-	-	0.309	-	-	0.240	-	-	0.236	-	-	-	-	-	0.236
4.6) SLQ-32 ILS/TEST SUPPORT	A		-	-	1.888	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.7) SLQ-32 CERTIFICATION	A		-	-	0.338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: 4) CG004 SLQ-32			-	-	40.543	-	-	0.345	-	-	0.262	-	-	0.258	-	-	-	-	-	0.258
5) CG005 MK 46/MK 20 OPTICAL SIGHT																				
5.1) EOSS SYSTEM	A		-	-	-	-	-	-	1,690K	1	1.690	-	-	-	-	-	-	-	-	-
5.2) ILS/TEST SUPPORT	A		-	-	-	-	-	-	-	-	0.225	-	-	-	-	-	-	-	-	-
5.3) MODIFICATION KITS WMSL	A		-	-	0.297	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.4) MK 46/MK 20 WMSL <sup>(11)</sup>	A		14,525K	1	14.525	-	-	-	-	-	-	1,722K	1	1.722	-	-	-	1,722K	1	1.722
5.5) DATA WMSL	A		-	-	0.286	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.6) SOFTWARE WMSL	A		-	-	2.402	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.7) PROGRAM SUPPORT WMSL	A		-	-	1.632	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.8) ORDALT WMSL	A		-	-	0.770	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.9) ILS/TEST SPT WMSL <sup>(12)</sup>	A		-	-	2.023	-	-	-	-	-	-	-	-	0.178	-	-	-	-	-	0.178
Subtotal: 5) CG005 MK 46/MK 20 OPTICAL SIGHT			-	-	21.935	-	-	-	-	-	1.915	-	-	1.900	-	-	-	-	-	1.900
6) CG006 COMBAT SYSTEM INTEGRATION																				

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<b>Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy</b>															<b>Date:</b> May 2017				
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Item Number / Title [DODIC]	ID CD	MDAP/MAIS Code	Prior Years			FY 2016			FY 2017			FY 2018 Base			FY 2018 OCO			FY 2018 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) CSI	A		-	-	13.839	-	-	0.891	-	-	1.031	-	-	1.045	-	-	-	-	-	1.045
<b>Subtotal: 6) CG006 COMBAT SYSTEM INTEGRATION</b>			-	-	<b>13.839</b>	-	-	<b>0.891</b>	-	-	<b>1.031</b>	-	-	<b>1.045</b>	-	-	-	-	-	<b>1.045</b>
<b>7) CG007 MULTI-MODE RADAR</b>																				
7.1) MMR SYSTEM	A		-	-	-	-	-	-	8,518K	1	8.518	8,680K	1	8.680	-	-	-	8,680K	1	8.680
7.2) MMR INTEGRATION <sup>(13)</sup>	A		-	-	-	-	-	-	-	-	7.313	-	-	2.720	-	-	-	-	-	2.720
7.3) MMR ILS/TEST SUPPORT	A		-	-	-	-	-	-	-	-	0.773	-	-	0.992	-	-	-	-	-	0.992
<b>Subtotal: 7) CG007 MULTI-MODE RADAR</b>			-	-	<b>0.000</b>	-	-	-	-	-	<b>16.604</b>	-	-	<b>12.392</b>	-	-	-	-	-	<b>12.392</b>
<b>8) CG008 ATHENA CCD</b>																				
8.1) ATHENA CCD INTEGRATION <sup>(14)</sup>	A		-	-	-	-	-	-	-	-	8.345	-	-	0.526	-	-	-	-	-	0.526
<b>Subtotal: 8) CG008 ATHENA CCD</b>			-	-	<b>0.000</b>	-	-	-	-	-	<b>8.345</b>	-	-	<b>0.526</b>	-	-	-	-	-	<b>0.526</b>
<b>9) OPC C4I <sup>(15)</sup></b>																				
9.1) CRYPTO	A		-	-	-	-	-	-	-	-	-	62,000.00	1	0.062	-	-	-	62,000.00	1	0.062
9.2) C2P	A		-	-	-	-	-	-	-	-	-	607,500.00	2	1.215	-	-	-	607,500.00	2	1.215
9.3) ARC-210	A		-	-	-	-	-	-	-	-	-	295,909.09	11	3.255	-	-	-	295,909.09	11	3.255
9.4) OE-570A	A		-	-	-	-	-	-	-	-	-	443,000.00	1	0.443	-	-	-	443,000.00	1	0.443
9.5) OA-9277A	A		-	-	-	-	-	-	-	-	-	293,000.00	1	0.293	-	-	-	293,000.00	1	0.293
9.6) NAVMACs	A		-	-	-	-	-	-	-	-	-	333,500.00	2	0.667	-	-	-	333,500.00	2	0.667
9.7) FLEET BROADCAST	A		-	-	-	-	-	-	-	-	-	357,000.00	1	0.357	-	-	-	357,000.00	1	0.357
<b>Subtotal: 9) OPC C4I</b>			-	-	<b>0.000</b>	-	-	-	-	-	-	-	-	<b>6.292</b>	-	-	-	-	-	<b>6.292</b>
<b>Total</b>			-	-	<b>102.457</b>	-	-	<b>2.529</b>	-	-	<b>32.291</b>	-	-	<b>36.584</b>	-	-	-	-	-	<b>36.584</b>

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

**Footnotes:**

- <sup>(1)</sup> FY2018 SPQ-9B ILS/Test Support funds provide delivery/installation/check-out support for the WMSL 757 AN/SPQ-9B radar. Includes conducting the WMSL 757 radar installation checkout test procedures and supporting associated ships Builder and Acceptance Trials.
- <sup>(2)</sup> Provides the AN/SPQ-9B radar for the Maritime Security Cutter, Large (WMSL) Class, aka the National Security Cutter, to track surface targets and low fliers in support of potential gun engagements.
- <sup>(3)</sup> IFF Equipment suite for the WPC consists of MK XII equipment, Radar Control Transmitter (RCU), Radar Receiver-Transmitter shipping and installation fixtures which have various unit costs. The IFF AIMS Equipment unit price is an average unit cost for the various components being procured that year.
- <sup>(4)</sup> IFF Equipment suite for the OPC consists of the RT-1912C, C-12720, AS-177B, AN/APX-123 KIT, AN/UPX-41(C), AN/USM-719, KIV-78 and INCO spares with various unit costs.
- <sup>(5)</sup> FY2018 IFF AIMS increase attributed to procurement of IFF equipment for the congressionally added WMSL 758.
- <sup>(6)</sup> FY2018 IFF AIMS increase attributed to procurement of an IFF UPX-29 for the congressionally added WMSL 758.
- <sup>(7)</sup> FY2018 IFF ILS support increase attributed to procurement of IFF equipment for the congressionally added WMSL 758.

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<b>Exhibit P-40a, Budget Item Justification For Aggregated Items: FY 2018 Navy</b>		<b>Date: May 2017</b>
<b>Appropriation / Budget Activity / Budget Sub Activity:</b> 1810N / 02 / 17	<b>P-1 Line Item Number / Title:</b> 3620 / Coast Guard Equipment	<b>Aggregated Items Title:</b> Coast Guard Equipment
<p>(8) FY2018 MK53 increase attributed to procurement of the MK53 DLS for the congressionally added WMSL 758.</p> <p>(9) FY2018 MK53 ILS support increase attributed to procurement of MK53 DLS for the congressionally added WMSL 758.</p> <p>(10) FY2018 BEWT funds support engineering efforts associated with WMSL 757 system installation, inspection, and acceptance.</p> <p>(11) FY2018 MK46/MK20 increase attributed to procurement of the EOSS for the congressionally added WMSL 758.</p> <p>(12) FY2018 EOSS ILS increase attributed to procurement of the EOSS for the congressionally added WMSL 758.</p> <p>(13) The Multi-Mode Radar (MMR) integration efforts include the software upgrade to correlate radar video tracks and IFF information and the detail design of the IFF antenna onto the MMR antenna hardware integration to include drawing updates and technical publications. Increase in FY2018 attributed to lead system integration efforts for the '270 Medium Endurance Cutter (WMEC) Combat System Modernization.</p> <p>(14) The Combat System Control and Display OPC integration supports hardware and software integration of the Technical Insertion (TI)-16 Common Display System for the Multi-Mode Radar, IFF and to provide data to the MK48 Gun Weapon System for target engagement. Includes safety, certification, technical documentation, and information assurance efforts.</p> <p>(15) No associated equipment installation costs across the FYDP USCG will install the C4I systems. Procurements provide assets for OPC Hulls #1 through Hull #9 across the FYDP.</p>		

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