Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Navy											Date: May 2017	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0604261N *I Acoustic Search Sensors*							
COST ($ in Millions)	**Prior Years**	**FY 2016**	**FY 2017**	**FY 2018 Base**	**FY 2018 OCO**	**FY 2018 Total**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**Cost To Complete**	**Total Cost**
Total Program Element	456.268	30.637	34.525	37.167	-	37.167	28.962	47.887	48.896	49.868	Continuing	Continuing
0480: *ASW Sensors & Proc*	351.709	22.053	29.967	33.423	-	33.423	25.012	43.856	44.783	45.672	Continuing	Continuing
3224: *High Altitude ASW*	104.559	8.584	4.558	3.744	-	3.744	3.950	4.031	4.113	4.196	Continuing	Continuing

A. Mission Description and Budget Item Justification

Includes RDT&E funds for engineering development and operational test and evaluation of acoustic search sensors/systems and complementary equipment for Anti-Submarine Warfare (ASW) aircraft.

JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under SYSTEM DEVELOPMENT AND DEMONSTRATION because it includes those projects that have passed Milestone B approval and are conducting engineering and manufacturing development tasks aimed at meeting validated requirement prior to full-rate production decision.

B. Program Change Summary ($ in Millions)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Previous President's Budget	31.235	34.525	37.696	-	37.696
Current President's Budget	30.637	34.525	37.167	-	37.167
Total Adjustments	-0.598	0.000	-0.529	-	-0.529
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.033	0.000			
• SBIR/STTR Transfer	-0.565	0.000			
• Program Adjustments	0.000	0.000	-0.195	-	-0.195
• Rate/Misc Adjustments	0.000	0.000	-0.334	-	-0.334

Change Summary Explanation

Technical: Not applicable.

Schedule:

0480 Schedule 1. Received technical correction for MAC Enhancements (MAC-E) with funding in FY16-FY22. Updated schedule to better align with P-8A's new acquisition strategy.

Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Navy	Date: May 2017
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604261N *I Acoustic Search Sensors*

0480 Schedule 2.

0480 Schedule 3.

3224 Schedule. The P-8A Initial Operational Capability (IOC) milestones were removed to better align with the P-8A schedule. Additionally, the integrated and operational test periods were further defined to reflect HAASW requirements integration into P-8A ECP 2, ECP 3, and INC 3 testing. The Radio Frequency Interference (RFI) Mitigation Analysis was added to the schedule based on the need to address emergent requirements in the sonobuoys. The digital telemetry contract award was then replaced with the planned P-8A integration and sonobuoy production contract awards. This aligns with the current acquisition strategy to add the digital telemetry requirement for the SSQ-125 sonobuoy into the FY19-23 production contract due to affordability.

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy			Date: May 2017
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604261N / *Acoustic Search Sensors*	Project (Number/Name) 0480 / *ASW Sensors & Proc*	

COST ($ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
0480: *ASW Sensors & Proc*	351.709	22.053	29.967	33.423	-	33.423	25.012	43.856	44.783	45.672	Continuing	Continuing
Quantity of RDT&E Articles		200	200	75	-	75	100	200	200	200		

A. Mission Description and Budget Item Justification

The Anti-Submarine Warfare (ASW) Sensors and Processing project provides the tools and methods necessary to maintain naval superiority by preventing threat submarines from disrupting the U.S. Navy's ability to control the sea lines of communication and completing their hostile missions. This project encompasses the Engineering & Manufacturing Development phase and the follow on Production and Deployment Phase of sensor systems to improve the mission effectiveness of airborne ASW platforms in cueing, searching, localizing, tracking, and attacking subsurface targets. Smaller and quieter threat submarines drive the requirement for continued advancement in ASW sensor capabilities for both blue water and littoral environments. The littoral regions of the world create an additional ASW challenge to overcome the increase in background clutter caused by the shallow water depth, high volume of shipping, and commercial radio frequency interference. Project 0480 provides funding to the passive and active ASW family of systems for the engineering development of solutions that detect, classify, and track threat submarines. The Multi-Static Active Coherent (MAC) program encompasses modifications to the active coherent (electronic) source sonobuoy and the Air Deployable Active Receiver sonobuoy and development, integration, and test of aircraft software. It also provides upgrades to the Multi-static mission planning tool, the tactical crew trainers and the tactical ground replay system. This program includes MAC Enhancements (MAC-E) that will shorten the ASW kill chain by enabling the warfighter to search larger areas in less time with more precision.

Project 0480 also provides funding for the Advanced Product Build (APB) program which integrates Office of Naval Research (ONR) Future Naval Capabilities (FNCs), Small Business Innovation Research (SBIR), University Affiliated Research Center (UARC) and other mature technologies into the processing baseline. Efforts incorporate clutter reduction, automation, improved displays and controls, as well as improved communication links resulting in reduced operator workload, increased target detection opportunities, and improved classification techniques. APB also includes an Air ASW Engineering Measurement Program (AEMP) that collects ASW operational system performance data and identifies areas where beneficial improvements can be incorporated across all Air ASW platforms. APB will deliver a new software build nominally in two year increments following MAC-E. The sonobuoy test articles in FY14-FY20 will support software and hardware integration flight tests and Technical Evaluation/Follow-On Test & Evaluation for the MAC program. Additionally, this project funds an urgent effort in support of the Navy's Theater Anti-Submarine Warfare offset strategy. Funding supports the rapid development, fielding and evaluation of a prototype distributed and netted undersea sensor system to meet an urgent combatant commanders' (U.S. European Command, U.S. Northern Command, U.S. Strategic Command) requirement for additional maritime Intelligence, Surveillance and Reconnaissance (ISR) capabilities.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: APB System Qualification Test/Fleet Release for P-3C. Rapid Capability Insertion (RCI)/Fleet Release for P-8A	8.053	6.317	11.423	0.000	11.423
Articles:	-	-	-	-	-
FY 2016 Accomplishments:					

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604261N / *Acoustic Search Sensors*	**Project (Number/Name)** 0480 / *ASW Sensors & Proc*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Performed software development/Engineering Measurement Program (EMP) for P-8A RCI (2). Continued system Fleet Introduction Training (FIT). ***FY 2017 Plans:*** Continue software development/EMP for P-8A RCI (2). Continue MAC FITs for P-8A squadrons. ***FY 2018 Base Plans:*** Continue software development/EMP for P-8A RCI (2). Continue MAC FITs for P-8A squadrons. ***FY 2018 OCO Plans:*** N/A					
Title: Multi-static Active Coherent (MAC) ***Articles:*** ***FY 2016 Accomplishments:*** Completed Hardware development for the SSQ-125A. Funding for MAC-E in FY15 and prior were executed under Program Element (PE) 0605500N. Continue MAC-E software development under PE 0604261N. ***FY 2017 Plans:*** Continue MAC-E software development. Deliver SSQ-125A EDM units. Conduct SSQ-125A test. ***FY 2018 Base Plans:*** Continue MAC-E software development. Deliver SSQ-125A EDM units. Conduct SSQ-125A test. ***FY 2018 OCO Plans:*** N/A	14.000 200	21.825 200	22.000 75	0.000 -	22.000 75
Title: Navy Theater ASW Offset Strategy ***Articles:*** ***FY 2016 Accomplishments:*** N/A ***FY 2017 Plans:*** Execute Theater ASW demonstration. Continue Advanced Theater ASW technology development. ***FY 2018 Base Plans:*** N/A ***FY 2018 OCO Plans:***	0.000 -	1.825 -	0.000 -	0.000 -	0.000 -

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604261N / *Acoustic Search Sensors*	Project (Number/Name) 0480 / *ASW Sensors & Proc*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
N/A					
Accomplishments/Planned Programs Subtotals	22.053	29.967	33.423	0.000	33.423

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• OPN/4048: *Sonobuoys - All Types*	0.000	25.787	38.775	-	38.775	43.653	44.444	53.523	49.648	Continuing	Continuing

Remarks

D. Acquisition Strategy

The Multistatic Active Coherent (MAC) ASW system and associated sonobuoys are fully integrated on the P-3C and P-8A ASW platforms. MAC Enhancements (MAC-E) is a development program associated with P-8A increment 3 that will significantly increase the wide area search capability through Engineering Change Proposals (ECPs) to the sonobuoys, aircraft software modifications to reduce clutter and improve processing, and OMI improvements to reduce operator workload. S&T and early R&D ASW improvement programs are matured through the APB process for periodic Fleet software releases.

E. Performance Metrics

High level operational system requirements are documented in the MAC Capability Production Document (CPD). Cost, schedule, and performance metrics are tracked throughout the development phase of the program to ensure the operational requirements will be met or exceeded during an extensive DT/OT cycle.

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Navy			Date: May 2017
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604261N / *Acoustic Search Sensors*	Project (Number/Name) 0480 / *ASW Sensors & Proc*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hdw Development	SS/CPIF	ERAPSCO : FT. WAYNE IN	18.805	0.000		3.003	Dec 2016	3.592	Dec 2017	-		3.592	17.500	42.900	42.900
Prior year Prod Dev no longer funded in the FYDP	Various	VARIOUS : VARIOUS	19.905	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
		Subtotal	38.710	0.000		3.003		3.592		-		3.592	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	WR	NAWCAD : PATUXENT RIVER, MD	22.704	5.600	Dec 2015	5.436	Dec 2016	6.068	Dec 2017	-		6.068	Continuing	Continuing	Continuing
Software Development	SS/CPIF	LOCKHEED MARTIN : MANASSAS VA	9.329	1.000	Dec 2015	1.373	Dec 2016	1.870	Dec 2017	-		1.870	3.727	17.299	17.299
Software Development	Various	VARIOUS : VARIOUS	11.238	3.835	Dec 2015	6.869	Dec 2016	7.753	Dec 2017	-		7.753	Continuing	Continuing	Continuing
Studies & Analysis	WR	NAWCAD : PATUXENT RIVER, MD	15.602	2.652	Dec 2015	2.519	Dec 2016	2.807	Dec 2017	-		2.807	Continuing	Continuing	Continuing
Technical Data	WR	NAWCAD : PATUXENT RIVER, MD	15.659	0.372	Dec 2015	0.343	Dec 2016	0.337	Dec 2017	-		0.337	Continuing	Continuing	Continuing
Training	WR	NAWCAD : PATUXENT RIVER, MD	0.000	2.114	Dec 2015	2.095	Dec 2016	2.360	Dec 2017	-		2.360	Continuing	Continuing	Continuing
		Subtotal	74.532	15.573		18.635		21.195		-		21.195	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Navy			Date: May 2017
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604261N / *Acoustic Search Sensors*	Project (Number/Name) 0480 / *ASW Sensors & Proc*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test & Eval	WR	NAWCAD : PATUXENT RIVER, MD	27.117	2.518	Dec 2015	3.291	Dec 2016	3.689	Dec 2017	-		3.689	Continuing	Continuing	Continuing
		Subtotal	27.117	2.518		3.291		3.689		-		3.689	-	-	-

Management Services ($ in Millions)

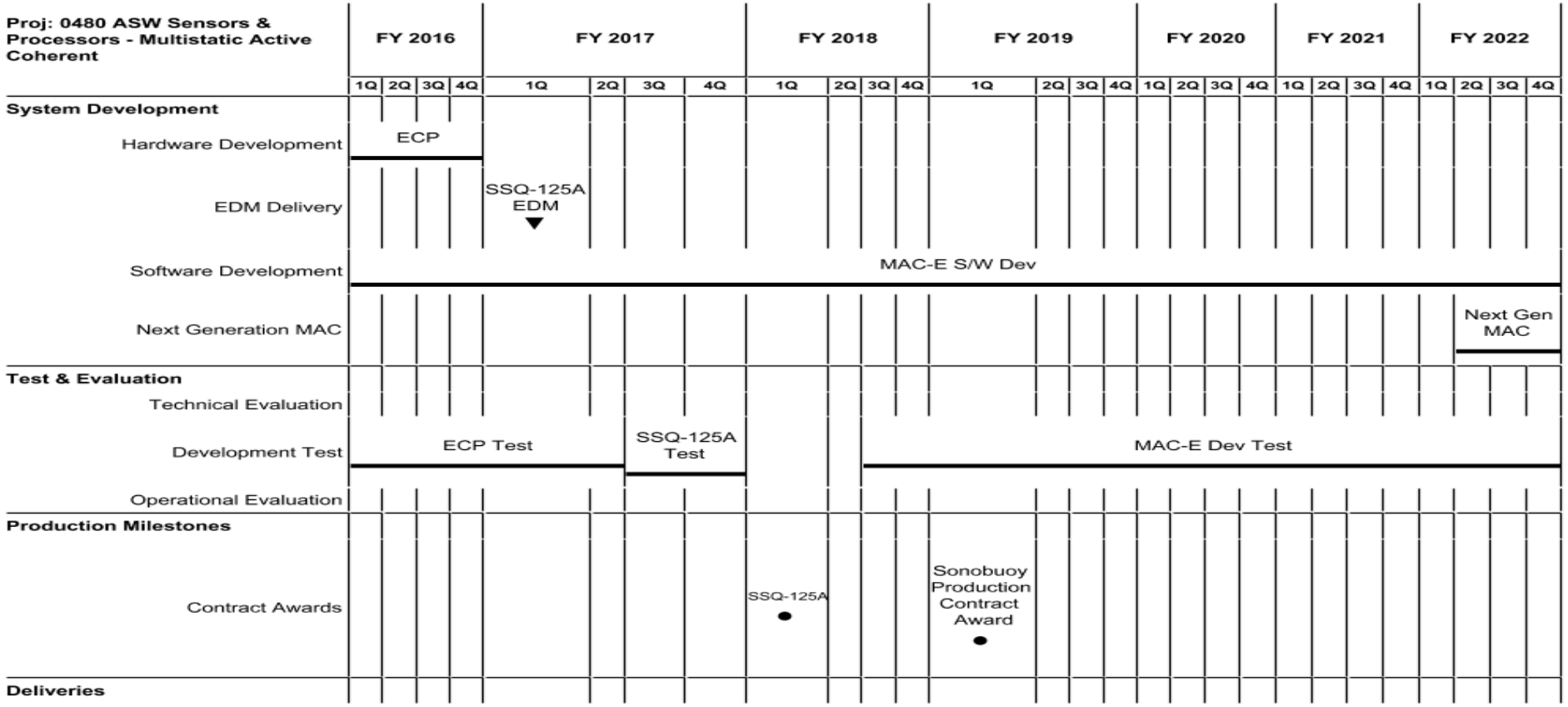
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Eng Spt	Various	VARIOUS : VARIOUS	40.969	1.630	Dec 2015	2.010	Dec 2016	2.050	Dec 2017	-		2.050	Continuing	Continuing	Continuing
Contractor Eng Spt	C/CPFF	NAVMAR APPLIED SCIENCES CORP : WARMINSTER, PA	6.049	0.500	Dec 2015	1.030	Dec 2016	1.011	Dec 2017	-		1.011	2.810	11.400	11.400
Government Eng Spt	WR	NAWCAD : PATUXENT RIVER, MD	97.260	0.722	Dec 2015	0.500	Dec 2016	0.386	Dec 2017	-		0.386	Continuing	Continuing	Continuing
Eng & Tech Spt Srvc (NON-FFRDC)	Various	VARIOUS : VARIOUS	56.186	1.110	Dec 2015	1.498	Dec 2016	1.500	Dec 2017	-		1.500	Continuing	Continuing	Continuing
Mgt & Prof SptT Srvc (FFRDC)	Various	VARIOUS : VARIOUS	10.018	0.000	Dec 2015	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Prior Years Mgmt Svcs no longer funded in the FYDP	Various	VARIOUS : VARIOUS	0.868	0.000		0.000		0.000		-		0.000	0.000	0.868	-
		Subtotal	211.350	3.962		5.038		4.947		-		4.947	-	-	-

	Prior Years	FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	351.709	22.053		29.967		33.423		-		33.423	-	-	-

Remarks

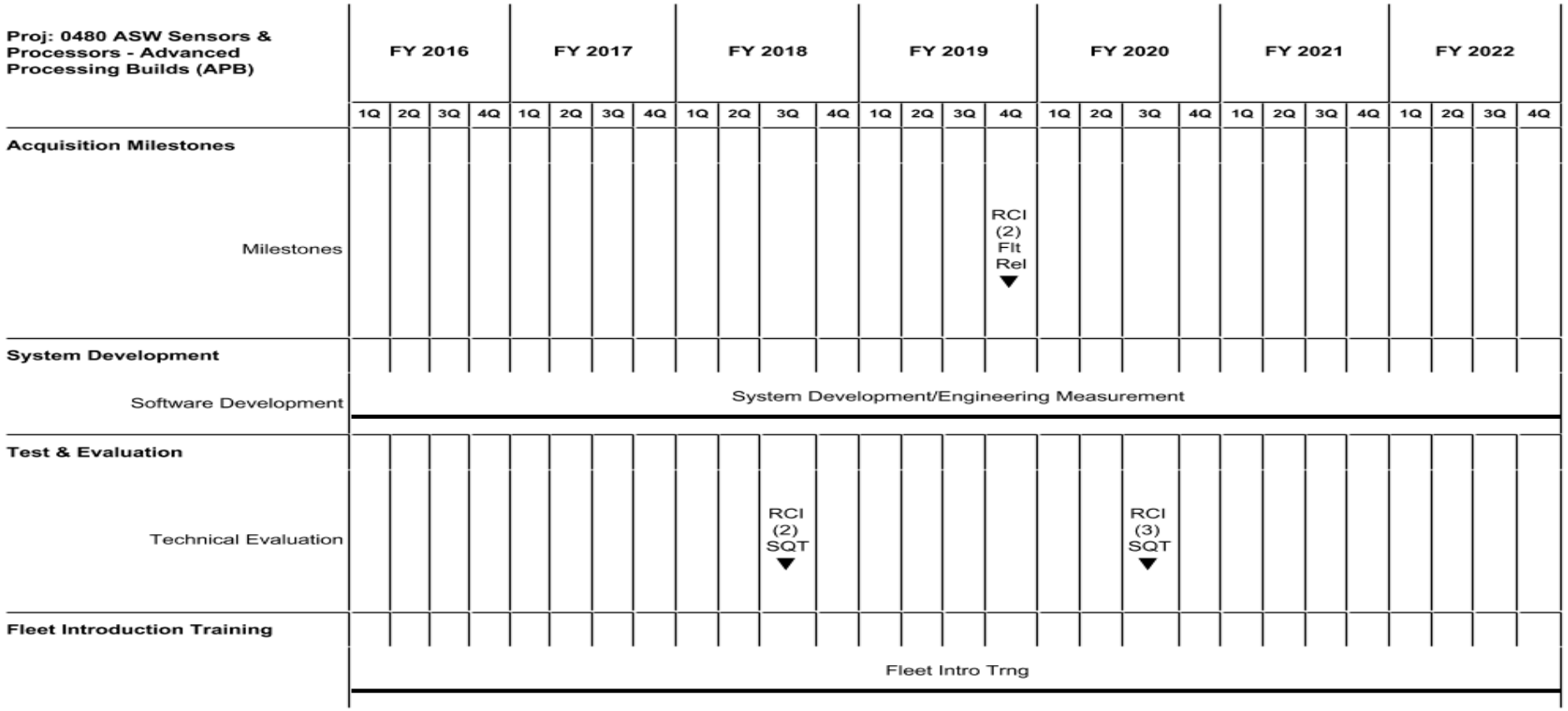
The support growth in FY16 results from the realignment, via technical correction, of $14.0 million Multistatic Active Coherent Enhancements (MAC-E) funding from Program Element (PE) 0605500N to PE 0604261N.

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604261N / *Acoustic Search Sensors*	**Project (Number/Name)** 0480 / *ASW Sensors & Proc*



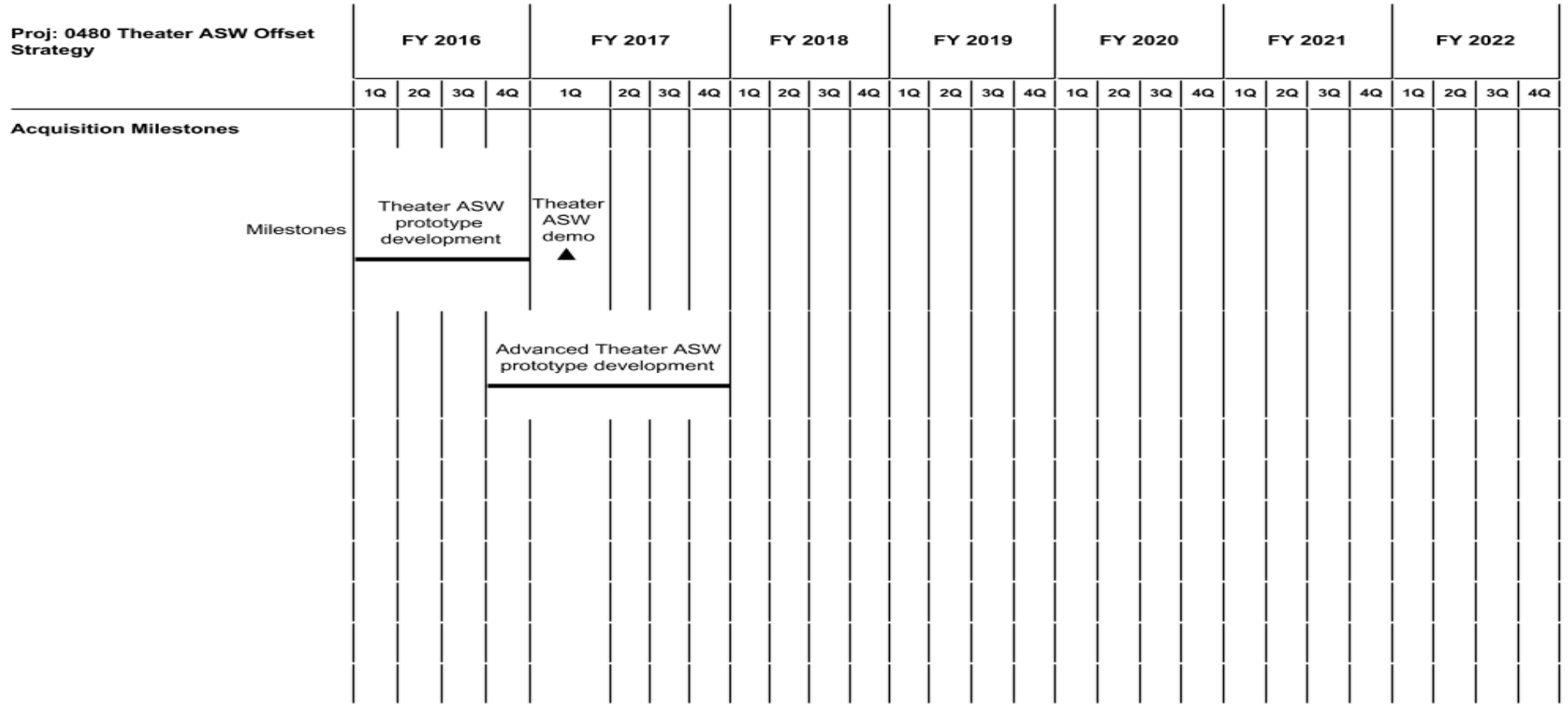
2018DON - 0604261N - 0480

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604261N / *Acoustic Search Sensors*	**Project (Number/Name)** 0480 / *ASW Sensors & Proc*



2018DON - 0604261N - 0480

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604261N / *Acoustic Search Sensors*	**Project (Number/Name)** 0480 / *ASW Sensors & Proc*



2018DON - 0604261N - 0480 FY16 efforts are dependent upon Omnibus Reprogramming action (FY 16-22 PA)

Exhibit R-4A, RDT&E Schedule Details: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604261N / *Acoustic Search Sensors*	**Project (Number/Name)** 0480 / *ASW Sensors & Proc*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj: 0480 ASW Sensors & Processors - Multistatic Active Coherent				
System Development: Hardware Development: Engineering Change Proposal	1	2016	4	2016
System Development: EDM Delivery: Eng Dev Model (H/W EDM) 2	1	2017	1	2017
System Development: Software Development: MAC-E Software Development	1	2016	4	2022
System Development: Next Generation MAC: Next Gen MAC	2	2022	4	2022
Test & Evaluation: Development Test: Engineering Change Proposal Test	1	2016	2	2017
Test & Evaluation: Development Test: SSQ-125A Test	3	2017	4	2017
Test & Evaluation: Development Test: MAC-E Development Test	3	2018	4	2022
Production Milestones: Contract Awards: SSQ-125A	1	2018	1	2018
Production Milestones: Contract Awards: Sonobuoy Production Contract Award	1	2019	1	2019
Proj: 0480 ASW Sensors & Processors - Advanced Processing Builds (APB)				
Acquisition Milestones: Milestones: RCI (2) Fleet Release	4	2019	4	2019
System Development: Software Development: System Development/Engineering Measurement	1	2016	4	2022
Test & Evaluation: Technical Evaluation: RCI (2) SQT	3	2018	3	2018
Test & Evaluation: Technical Evaluation: RCI (3) SQT	3	2020	3	2020
Fleet Introduction Training: Fleet Introduction Training	1	2016	4	2022
Proj: 0480 Theater ASW Offset Strategy				
Acquisition Milestones: Milestones: Theater ASW prototype development	1	2016	4	2016
Acquisition Milestones: Milestones: Theater ASW Demonstration	1	2017	1	2017
Acquisition Milestones: Milestones: Advanced Theater ASW prototype development	4	2016	4	2017

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy			Date: May 2017
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604261N / *Acoustic Search Sensors*	Project (Number/Name) 3224 / *High Altitude ASW*	

COST ($ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
3224: *High Altitude ASW*	104.559	8.584	4.558	3.744	-	3.744	3.950	4.031	4.113	4.196	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The High Altitude Anti-Submarine Warfare (HAASW) program increases P-8A operational flexibility and effectiveness throughout the kill chain at higher than traditional ASW altitudes. FY10-FY16 activities included Sonobuoy Technology Development (TD), P-8A Aircraft integration, Training, Test & Evaluation, and Initial Operational Capability. TD includes hardware modifications to current production sonobuoys and software development for the aircraft. Global Positioning System (GPS) integration will provide precise sonobuoy location regardless of aircraft altitude/location to enhance wide area ASW search, localization, track and targeting. The digital telemetry will improve sonobuoy communication performance in high Radio Frequency Interference environments, increase Air Deployable Active Receiver (SSQ-101) channel availability, and provide NATO compatibility. FY16-FY18 activities include the integration of an algorithm that will adjust sonobuoy release/drop points for more accurate sonobuoy placement. FY16-FY22 activities include the integration of cyber security protections including, but not limited to, digital telemetry and encryption.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: High Altitude Enablers	8.584	4.558	3.744	0.000	3.744
Articles:	-	-	-	-	-
FY 2016 Accomplishments: Initiated P-8A Inc 2 ECP 2 Follow-On Operational Test & Evaluation (FOT&E) and ECP 3 Integrated Test & Evaluation (IT&E). Initiated digital telemetry/cyber security requirements analysis.					
FY 2017 Plans: Continue P-8A Inc 2 ECP 2 FOT&E and initiate ECP 3 FOT&E. Continue digital telemetry/cyber security requirements analysis.					
FY 2018 Base Plans: Continue ECP 3 FOT&E. Continue digital telemetry/cyber security requirements analysis. Initiate digital telemetry integration.					
FY 2018 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	8.584	4.558	3.744	0.000	3.744

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604261N / *Acoustic Search Sensors*	**Project (Number/Name)** 3224 / *High Altitude ASW*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• OPN/4048: *Sonobuoys - All Types*	166.385	162.588	173.616	-	173.616	184.299	190.706	195.316	198.918	Continuing	Continuing

Remarks

D. Acquisition Strategy

A 15 March 12 Acquisition Decision Memorandum (ADM) from PEO(A) (Milestone Decision Authority) approved the transition from a planned Acquisition Category (ACAT) Program to a series of Engineering Change Proposal (ECP) modifications to the AN/SSQ-53, AN/SSQ-62 and AN/SSQ-101 sonobuoys. Affordability deferred the digital telemetry requirement in the SSQ-53, SSQ-62 and SSQ-125 sonobuoys to FY16-FY22. All major contracts (ERAPSCO & Boeing) to meet P-8A Inc 2 ECP 2 and ECP 3 requirements have been awarded. Integrate cyber security protections including, but not limited to, digital telemetry and encryption.

E. Performance Metrics

Schedule and cost variances are used to track sonobuoy development. Should Cost methodology has also been employed to manage the development and production costs of the HAASW capable sonobuoys.