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 4: *Advanced Component Development & Prototypes (ACD&P)*					R-1 Program Element (Number/Name) PE 0603254N *I ASW Systems Development*							
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	132.499	5.455	7.041	7.661	-	7.661	7.189	7.309	7.465	7.613	Continuing	Continuing
1292: *Adv ASW Sensors & Proc*	118.285	3.610	7.041	7.661	-	7.661	7.189	7.309	7.465	7.613	Continuing	Continuing
3222: *Advanced High Altitude ASW*	14.214	1.845	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	16.059

A. Mission Description and Budget Item Justification

Includes RDT&E funds for advanced development and developmental testing of airborne anti-submarine warfare (ASW) systems, including aircraft, equipment, and devices for use against all types of submarine targets.

JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under ADVANCED COMPONENT DEVELOPMENT AND PROTOTYPES because it includes all efforts necessary to evaluate integrated technologies, representative models or prototype systems in a high fidelity and realistic operating environment.

B. Program Change Summary ($ in Millions)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Previous President's Budget	5.551	7.041	7.746	-	7.746
Current President's Budget	5.455	7.041	7.661	-	7.661
Total Adjustments	-0.096	0.000	-0.085	-	-0.085
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.001	0.000			
• SBIR/STTR Transfer	-0.094	0.000			
• Program Adjustments	0.000	0.000	-0.012	-	-0.012
• Rate/Misc Adjustments	-0.001	0.000	-0.073	-	-0.073

Change Summary Explanation

Technical: Not applicable.

Schedule:

1292. Received administrative adjustment starting in FY17. Project Units H3222 and H1292 were consolidated into H1292.

3222. Received administrative adjustment starting in FY17. Project Units H3222 and H1292 were consolidated into H1292.

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy			Date: May 2017
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603254N / *ASW Systems Development*	Project (Number/Name) 1292 / *Adv 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
1292: *Adv ASW Sensors & Proc*	118.285	3.610	7.041	7.661	-	7.661	7.189	7.309	7.465	7.613	Continuing	Continuing
Quantity of RDT&E Articles		100	100	100	-	100	-	-	-	-		

A. Mission Description and Budget Item Justification

This program provides Air Anti-Submarine Warfare (ASW) effectiveness through development and maturation of advanced hardware and software associated with airborne acoustic and non-acoustic systems. This includes sensors and components, processing, post-processing, data recording and display capabilities to address regional threat scenarios against surfaced or submerged conventionally and nuclear powered submarines. Key objectives are platform accommodations of advanced active and passive sensors and components, improved detection, classification, localization, tracking, and increased capacity and flexibility to handle multi-sensor data loads. Furthermore, technologies that can be affordably implemented as payloads across fixed wing, rotary and unmanned platforms engaged in ASW, will be pursued. Programs being funded during the FYDP will evaluate technologies such as: Over the Horizon (OTH) communications, sonobuoy communication link to/ from aircraft, Distributed Netted Sensors, transient signals, and source and receiver improvement technologies that will enhance passive and multi-static active sensor systems capabilities. Programs being funded during the FYDP will provide for the development and maturation of persistent tactical search technologies that will allow transition to the localization and attack phase in all operationally relevant environments. In addition, the program will provide for the development and subsequent experimentation, including data collection and engineering measurement, of Multi-static Active Coherent sources and receivers, laser technologies, electro-optical and multi-spectral camera technologies, radar, and Magnetic Anomaly Detection (MAD) sensors. Those technologies that are deemed mature and provide increased operational capability will be approved for a production Rapid Capability Insertion (RCI) build. The test articles, which consist of passive/active sensors/components and associated processors, will support at-sea trials and experiments.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: System performance assessments	3.610	7.041	7.661	0.000	7.661
Articles:	100	100	100	-	100
FY 2016 Accomplishments: Conducted system performance assessments for Multi-Static Active Coherent ASW algorithms and other prospective Acoustic and Non-Acoustic sensors, systems and enhancements. The test articles, which consist of passive/active sensors/components and associated processors, supported at-sea trials and experimentation. Developed prototype signal processing for use in at-sea experiment/exercise participation and data collection. Conducted data analysis and algorithm assessments for the engineering measurement program on Science and Technology, Research and Development and operational fleet collected data.					
FY 2017 Plans: Received technical adjustment starting in FY17. Project Units H3222 and H1292 are consolidated into H1292. Conduct studies, analyses and system performance assessments on next generation Multi-Static Active Coherent ASW developments and other Acoustic and Non-Acoustic system enhancements for traditional and					

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603254N / *ASW Systems Development*	**Project (Number/Name)** 1292 / *Adv 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
high altitude ASW operations. The test articles, which consist of passive/active sensors/components, processors and algorithms, will support at-sea trials and experimentation. Develop and mature prototype software for use in at-sea experiment/exercise participation and data collection. Conduct data analysis for the engineering measurement program on Science and Technology, Research and Development and operational fleet collected data. ***FY 2018 Base Plans:*** Conduct sensor and system performance assessments and effects chains gap analyses on the next generation of Multi-Static Active Coherent system components, advancements in passive sensing and other acoustic and non-acoustic enhancements for traditional and high altitude ASW operations. The related test articles, consisting of passive/active sensors/components, models, processors and algorithms, will support execution of at-sea demonstrations and experimentation. Develop and mature prototype software for participation in at-sea experimentation and data collection. Conduct data analyses and evaluate/mature signal processing algorithms with science and technology research and development, and operational fleet-collected data. ***FY 2018 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	3.610	7.041	7.661	0.000	7.661

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
• RDT&E/0480: *ASW Sensors & Proc*	22.053	29.967	33.409	-	33.409	25.012	43.856	44.783	45.672	Continuing	Continuing

Remarks

D. Acquisition Strategy

Develop and mature promising acoustic and non-acoustic ASW technologies that have high potential for meeting documented capability gaps and Fleet requirements. As funding permits, transition those technologies into acquisition programs of record for eventual Fleet release on ASW platforms.

E. Performance Metrics

Potential ASW technologies are quantitatively assessed for effect on ASW kill chain in relation to cost, schedule and performance metrics.

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy			Date: May 2017
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603254N / *ASW Systems Development*	Project (Number/Name) 3222 / *Advanced 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
3222: *Advanced High Altitude ASW*	14.214	1.845	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	16.059
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Received administrative adjustment starting in FY17. Project Units H3222 and H1292 were consolidated into H1292.

A. Mission Description and Budget Item Justification

Advanced High Altitude Anti-Submarine Warfare (Adv HAASW) program performs research, analyses, and early prototype demonstration activities for new technologies to support future Air Anti-Submarine Warfare (ASW) programs for P-8A and other platforms. Emphasis is placed on evaluation of technologies and prototype systems in realistic operating environments with a focus on new sensors and system components.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: Research, analyses, and early prototype demonstration activities	1.845	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2016 Accomplishments: Performed studies, analyses and early prototyping of acoustic, non-acoustic and communications technologies suitable for high altitude ASW operations.					
FY 2017 Plans: N/A					
FY 2018 Base Plans: N/A					
FY 2018 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	1.845	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603254N / *ASW Systems Development*	**Project (Number/Name)** 3222 / *Advanced High Altitude ASW*

D. Acquisition Strategy

Develop modifications to incorporate capability into current sonobuoy sensors and integration into Air ASW platforms, P-8A as the lead aircraft.

E. Performance Metrics

Perform Studies and Analysis to better define Advanced HAASW program needs. Early prototypes will be developed to reduce risk for ASW operations at high altitudes by the P-8A aircraft.