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 0603553N *I Surface 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
Total Program Element	184.805	1.056	1.081	1.136	-	1.136	1.159	1.183	1.206	1.231	Continuing	Continuing
1704.: *Undersea Warfare*	184.805	1.056	1.081	1.136	-	1.136	1.159	1.183	1.206	1.231	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Rest-of-the-World (ROW) continues to produce quieter, more lethal submarine technologies. Adaptable commercial technologies are readily available to the ROW navies. These trends increase the threats to United States (US) surface combatants, thus requiring a focused effort to identify the most promising Anti-Submarine Warfare (ASW) technologies through a process of discovery, assessment, experimentation, and analysis.

This project will pursue the development of technologies with the goal of improving ASW effectiveness to the point of rendering the enemy submarine irrelevant against US and coalition forces. Studies, experiments and/or technology developments under this project will seek to improve the ability of surface combatants to detect, classify, localize, and track submerged contacts and detect and defend against modern torpedoes. To achieve these objectives, it is essential to develop new ASW technologies and conduct at-sea experiments to prove/disprove technology concepts and collect corroborating data. The product of these efforts will be provided to the Advanced Capability Build (ACB) program supporting the continuing improvement of the AN/SQQ-89 Surface ASW Combat System.

B. Program Change Summary ($ in Millions)

	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Previous President's Budget	1.096	1.081	1.148	-	1.148
Current President's Budget	1.056	1.081	1.136	-	1.136
Total Adjustments	-0.040	0.000	-0.012	-	-0.012
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.040	0.000			
• Program Adjustments	0.000	0.000	-0.004	-	-0.004
• Rate/Misc Adjustments	0.000	0.000	-0.008	-	-0.008

Change Summary Explanation
Funding:
FY 2016: Decrease by $0.040M for Small Business Innovative Research (SBIR) realignment.

YEAR-TO-YEAR OVERALL BUDGET CONTROL INCREASES/DECREASES:

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- FY 2017 to FY 2018 increase representative of reasonable inflation escalation associated with the RDT&E,N appropriation.

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 0603553N / Surface ASW				Project (Number/Name) 1704. / Undersea Warfare			

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
1704.: Undersea Warfare	184.805	1.056	1.081	1.136	-	1.136	1.159	1.183	1.206	1.231	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)

	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: ASW Concept Development/Studies	1.056	1.081	1.136	0.000	1.136
Articles:	-	-	-	-	-

FY 2016 Accomplishments:
Collected systems and performance data during select Fleet exercises and at-sea testing events. Analyzed and distributed collected data. Conducted studies and Analysis of Alternatives (AoA) in support of improved ASW operations. Developed enhancements to Continuous Active Sonar (CAS) to improve AN/SQQ-89A(V)15 ability to detect, classify, and localize submerged contacts.

FY 2017 Plans:
Collect systems and performance data during select Fleet exercises and at-sea testing events. Analyze and distribute collected data. Conduct studies and AoA in support of improved ASW operations. Award, via Broad Agency Announcement (BAA), an advanced development contract to prototype promising new concepts applying Doppler Matched Processing techniques to ASW operations and Torpedo Defense.

FY 2018 Base Plans:
Collect systems and performance data during select Fleet exercises and at-sea testing events, including one additional data collection event on relevant modern torpedo acoustic signature characteristics. Analyze and distribute collected data. Conduct studies and AoA in support of improved ASW operations. Continue advanced

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Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603553N / *Surface ASW*	**Project (Number/Name)** 1704. *I Undersea Warfare*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
development efforts initiated in FY17 to prototype promising new ASW concepts applying Doppler Matched Processing techniques to ASW and Torpedo Defense. ***FY 2018 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	1.056	1.081	1.136	0.000	1.136

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
• RDTEN/0205620N/1916: *Surface ASW System Improvement*	23.685	24.583	29.351	-	29.351	28.945	30.213	29.892	30.407	Continuing	Continuing
• OPN/2136: *AN/SQQ-89 Surf ASW Cmbt Sys*	103.241	90.029	102.222	-	102.222	123.433	124.567	127.598	135.209	Continuing	Continuing

Remarks

D. Acquisition Strategy

Use competitively awarded contracts from Broad Agency Announcement (BAA) solicitations and University Affiliated Research Centers (UARCs).

E. Performance Metrics

Investigate promising ASW technologies via the ACB Four Step spiral development/improvement process.