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Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Navy **Date:** May 2017

Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 6: RDT&E Management Support</i>	R-1 Program Element (Number/Name) PE 0605856N / <i>Strategic Technical Support</i>
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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	0.000	3.140	3.597	4.313	-	4.313	4.370	4.415	4.486	4.576	Continuing	Continuing
0128: <i>Mgmt/Tech Supt Strategic</i>	0.000	1.138	1.215	1.226	-	1.226	1.250	1.276	1.302	1.328	Continuing	Continuing
1038: <i>Acoustic & Non-Acoustic Analysis Supt</i>	0.000	2.002	2.382	3.087	-	3.087	3.120	3.139	3.184	3.248	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element supports technical studies and analyses as directed by the Director for Submarine Warfare to support major policy and procurement decisions. This program is divided into two elements to support decision making in the areas of submarine and antisubmarine warfare and undersea surveillance.

B. Program Change Summary (\$ in Millions)

	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018 Base</u>	<u>FY 2018 OCO</u>	<u>FY 2018 Total</u>
Previous President's Budget	3.258	3.597	4.349	-	4.349
Current President's Budget	3.140	3.597	4.313	-	4.313
Total Adjustments	-0.118	0.000	-0.036	-	-0.036
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.118	0.000			
• Program Adjustments	0.000	0.000	-0.036	-	-0.036

Change Summary Explanation

The FY 2017 request was reduced by -\$0.069 million to account for the availability of prior year execution balances.

The funding increase from FY 2017 to FY 2018 supports development of Draft and Final Scientific Research Plan for field research using SURTASS Low Frequency Active (LFA) sonar system in oceanic environment to support development of the 2022 SURTASS LFA sonar new Environmental Impact Statement (EIS).

Technical: N/A

Schedule: N/A

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy										Date: May 2017		
Appropriation/Budget Activity 1319 / 6					R-1 Program Element (Number/Name) PE 0605856N / <i>Strategic Technical Support</i>				Project (Number/Name) 0128 / <i>Mgmt/Tech Supt Strategic</i>			
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
0128: <i>Mgmt/Tech Supt Strategic</i>	0.000	1.138	1.215	1.226	-	1.226	1.250	1.276	1.302	1.328	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides analytical support to the Director, Submarine Warfare Division as a basis for major policy, planning and acquisition program decisions. It supports the development of the Submarine Force strategic vision to guide research and development investment strategy and future planning. Additionally, this line supports studies in the area of submarine and undersea surveillance missions, force structure, payloads and sensors and force employment.

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

	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: MANAGEMENT AND TECHNICAL SUPPORT, STRATEGIC	1.138	1.215	1.226	0.000	1.226
Articles:	-	-	-	-	-
FY 2016 Accomplishments:					
- Coordinated analytic efforts and drafted integrated undersea investment strategy that is used to determine S&T/R&D needs in the FYDP;					
- Conducted analysis on technology, inventory, and force structure options/tradeoffs for future planning;					
- Conducted analytic, strategic planning, programmatic, technical and research to support for future capability development.					
FY 2017 Plans:					
- Conduct technical investigations and quantitative assessments that identify needs and establish plans for the development of USW capabilities and requirements.					
- Develop solutions that reflect a broad, integrated view including operational effects, policy considerations, programmatic, business-case factors, strategic implications, and attention to past historical precedents.					
FY 2018 Base Plans:					
- Conduct analysis to identify and weigh options for addressing problems/challenges and assessing the impact across the strategic and conventional military spectrum;					
- Anticipate emerging and future USW challenges, and lead effective assessment efforts to proactively address those challenges.					
FY 2018 OCO Plans:					
N/A					
Accomplishments/Planned Programs Subtotals	1.138	1.215	1.226	0.000	1.226

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy	Date: May 2017
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Appropriation/Budget Activity 1319 / 6	R-1 Program Element (Number/Name) PE 0605856N / <i>Strategic Technical Support</i>	Project (Number/Name) 0128 / <i>Mgmt/Tech Supt Strategic</i>
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C. Other Program Funding Summary (\$ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

This project supports studies in the area of undersea surveillance missions, sensor system, payloads, force employment, communications, acoustic performance prediction systems, environmental and medical effects of acoustics systems including installations/removals, operational security and future threat analysis. Project success is measured through analytical results and constant interaction with the contractors that enable the Director for Submarine Warfare to make decisions effectively.

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy										Date: May 2017		
Appropriation/Budget Activity 1319 / 6					R-1 Program Element (Number/Name) PE 0605856N / <i>Strategic Technical Support</i>					Project (Number/Name) 1038 / <i>Acoustic & Non-Acoustic Analysis Supt</i>		
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
1038: <i>Acoustic & Non-Acoustic Analysis Supt</i>	0.000	2.002	2.382	3.087	-	3.087	3.120	3.139	3.184	3.248	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides analytical support to the Director, Intelligence, Surveillance, and Reconnaissance (ISR) Division, the Battlespace Awareness Division of DCNO Information Warfare, and the Integrated Undersea Surveillance System (IUSS) Branch as a basis for major policy, planning, and acquisition program decisions. It supports studies in the area of undersea surveillance missions, sensor system communications, and acoustic performance prediction systems, environmental and medical effects of acoustic systems, operational security, and future threat analysis. Supports synthetic mission lay down simulations for IUSS strategic planning and resource allocation. Supports continued development and documentation of architecture for future undersea surveillance capabilities and systems. Supports studies to determine long-term impact of IUSS active sensors on marine animals and development of Surveillance Towed Array Sensor system (SURTASS) Low Frequency Active (LFA), Compact LFA (CLFA) and the Supplemental Environmental Impact Statement (SEIS).

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

	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: ACOUSTIC AND NON-ACOUSTIC ANALYSIS SUPPORT	2.002	2.382	3.087	0.000	3.087
Articles:	-	-	-	-	-
Description: The increase from FY16 to FY17 reflects the requirement to conduct a full 5 year Environmental Impact Statement in 2022 based on 20 years of operating LFA and the changes in technology and scientific understanding of the environment. A full scoping of prior studies, enhanced capabilities, environmental compliance is a 5 year process that will also require an assessment of potentially expanding current operating areas under the prior EIS/SEISs.					
The increase from FY17 to FY18 supports development of Draft and Final Scientific Research Plan for field research using SURTASS Low Frequency Active (LFA) sonar system in oceanic environment to support development of the 2022 SURTASS LFA sonar new Environmental Impact Statement (EIS).					
FY 2016 Accomplishments:					
-Continue to execute the Surveillance Engineering Measurements Program (SEMP) providing critical analytic insight into engineering and operational performance components of the IUSS shore based and Mobile systems					
-Continue comprehensive case analyses to establish a basis for understanding what impact, both positive and negative, our legacy tactical SONAR systems and new ASB capability deliveries have on fleet operations					

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 6	R-1 Program Element (Number/Name) PE 0605856N / <i>Strategic Technical Support</i>	Project (Number/Name) 1038 / <i>Acoustic & Non-Acoustic Analysis Supt</i>

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

	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
<p>-Continue Data Set identification and production as the sole source for real-world data to enable these advanced development initiatives which span Defense Advanced Research Projects Agency (DARPA), Office of Naval Research (ONR), Integrated Warfare Systems (IWS), Space & Naval Warfare Systems Command (SPAWAR), Naval Research Laboratory (NRL), and others to bring critically needed new capabilities and capability improvements to the IUSS community</p> <p>-Continue oversight of the Marine Mammal Monitoring (M3) Program</p> <p>-Continue to provide environmental compliance documentation review, generation and revision of draft Supplemental Environmental Impact Statements (SEIS) statements enabling continuing fleet operations of Low Frequency Active (LFA) systems</p> <p>-Continue to provide analytic and Subject Matter Expertise (SME) support to facilitate Naval Litigation Office (NLO) efforts enabling ongoing Marine Mammal Mitigation litigation</p> <p>-Provide passive acoustic monitoring, which must occur whenever the SURTASS LFA sonar is operational, to support continued fleet Low Frequency Active operations worldwide)</p> <p>FY 2017 Plans:</p> <p>-Continue to execute the Surveillance Engineering Measurements Program (SEMP) providing critical analytic insight into engineering and operational performance components of the IUSS shore based and mobile systems.</p> <p>-Continue comprehensive case analyses to establish a basis for understanding what impact, both positive and negative, our legacy tactical sonar systems and new Advanced Surveillance Build (ASB) capability deliveries have on fleet operations.</p> <p>-Continue Data Set identification and production as the sole source for real-world data to enable these advanced development initiatives which span Defense Advanced Research Projects Agency (DARPA), Office of Naval Research (ONR), Integrated Warfare Systems (IWS), Space & Naval Warfare Systems Command (SPAWAR), Naval Research Laboratory (NRL), and others to bring critically needed new capabilities and capability improvements to the IUSS community.</p> <p>-Continue oversight and execution of the IUSS Marine Mammal Monitoring (M3) Program.</p> <p>-Continue to provide environmental compliance documentation development, generation, revision, adjudication, and submission of Draft Supplemental Environmental Impact Statements (SEIS) enabling continuing fleet operations of SURTASS Low Frequency Active systems.</p> <p>-Continue to provide analytic and Subject Matter Expert (SME) support to facilitate Naval Litigation Office (NLO) and Department of Justice (DoJ) efforts in litigation from environmental NGOs in order to ensure no gap in SURTASS LFA sonar vessel operations.</p>					

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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
<p>-Provide passive acoustic monitoring, which must occur whenever the SURTASS LFA sonar is operational, to support continued fleet Low Frequency Active operations worldwide.</p> <p>-Hire one additional scientific and technical (S&T) employee, which is required for additional S&T oversight and data/document management control during the 5-year development of the 2022 EIS.</p> <p>-Initiate scoping effort for the 2022 EIS, which entails planning and programming for publishing public scoping meeting announcements and agenda for at least five locations, in U.S. newspapers and online outlets.</p> <p>-Establish a Scientific Working Group (SWG) of up to five scientific SMEs to meet at least twice, in order to formulate the research plans for field research to study behavioral effects of LFA sonar exposure to marine mammals using SURTASS LFA sonar system (update 1997-98 field data collected).</p> <p>-Plan, organize, and execute public scoping meetings in at least five locations, fielding, addressing and memorializing public comments from the meetings.</p> <p>-Initiate planning for field research using SURTASS LFA sonar system in oceanic environment to support development of the 2022 SURTASS LFA sonar full-up new EIS (like original 2001 version), which is required vice supplemental EIS/OEISs, which have been adequate since 2007.</p> <p>-Begin development of the 2022 EIS, which is essentially a full EIS rewrite, no carrying forward of previous conclusions/information/data as has been done with the four supplemental EISs between 2007 and 2017.</p> <p><i>FY 2018 Base Plans:</i></p> <p>-Continue to execute the Surveillance Engineering Measurements Program (SEMP) providing critical analytic insight into engineering and operational performance components of the IUSS shore based and mobile systems.</p> <p>-Continue comprehensive case analyses to establish a basis for understanding what impact, both positive and negative, our legacy tactical sonar systems and new Advanced Surveillance Build (ASB) capability deliveries have on fleet operations.</p> <p>-Continue Data Set identification and production as the sole source for real-world data to enable these advanced development initiatives which span Defense Advanced Research Projects Agency (DARPA), Office of Naval Research (ONR), Integrated Warfare Systems (IWS), Space & Naval Warfare Systems Command (SPAWAR), Naval Research Laboratory (NRL), and others to bring critically needed new capabilities and capability improvements to the IUSS community.</p> <p>-Continue oversight and execution of the IUSS Marine Mammal Monitoring (M3) Program.</p> <p>-Continue to provide environmental compliance documentation development, generation, revision, adjudication, and submission of Draft Supplemental Environmental Impact Statements (SEIS) enabling continuing fleet operations of SURTASS Low Frequency Active systems.</p>					

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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
<p>-Continue to provide analytic and Subject Matter Expert (SME) support to facilitate Naval Litigation Office (NLO) and Department of Justice (DoJ) efforts in litigation from environmental NGOs in order to ensure no gap in SURTASS LFA sonar vessel operations.</p> <p>-Provide passive acoustic monitoring, which must occur whenever the SURTASS LFA sonar is operational, to support continued fleet Low Frequency Active operations worldwide.</p> <p>-Continue oversight and data/document management control during the 5-year development of the 2022 EIS under the direction of new hire scientific and technical (S&T) employee.</p> <p>-Continue exploitation of the Scientific Working Group (SWG) of up to five scientific SMEs to meet in order to finalize the research plans for field research to study behavioral effects of LFA sonar exposure to marine mammals using SURTASS LFA sonar system (update 1997-98 field data collected).</p> <p>-Develop Draft and Final Scientific Research Plan for field research using SURTASS LFA sonar system in oceanic environment to support development of the 2022 SURTASS LFA sonar new EIS.</p> <p>-Continue development of the 2022 EIS, which is essentially a full EIS rewrite, no carrying forward of previous conclusions/information/data as has been done with the four supplemental EISs between 2007 and 2017, and which will include the input from the public scoping meetings.</p> <p>-Execute the Scientific Research Plan for field research using SURTASS LFA sonar system in oceanic environment.</p> <p>-Provide daily SITREPs during field research to pertinent Navy personnel; and upon completion provide Hot Wash brief; and within three months of conclusion of the field research, provide Quicklook report and brief.</p> <p>-With support from the SWG, initiate the updating of information on the following elements of the new 2022 EIS: 1) non-acoustic alternatives to LFA sonar; 2) effects of LFA sonar on human divers; 3) efficacy of LFA sonar mitigation measures; 4) potential effects of exposure to LFA sonar on marine mammals, sea turtles, and fish; and 5) effects on recreational marine activities, such as diving.</p> <p>-On direction, plan for public hearings in at least five locations.</p> <p>FY 2018 OCO Plans: N/A</p>					
Accomplishments/Planned Programs Subtotals	2.002	2.382	3.087	0.000	3.087

C. Other Program Funding Summary (\$ in Millions)

N/A

Remarks

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D. Acquisition Strategy

N/A

E. Performance Metrics

This project supports studies in the area of undersea surveillance missions, sensor systems, and acoustic performance prediction systems, environmental and medical effects of acoustic systems, and future threat analysis. In addition, it provides research and reports necessary to support SURTASS LFA and Compact Low Frequency Active (CLFA) sonar compliance with Federal, State and Local environmental laws required for continued SURTASS LFA and CLFA operations, analysis of undersea technology for application to future undersea surveillance capabilities, and assessment of current and future IUSS warfare areas and potential allied Navy contributions. To this end, research is conducted by prominent educational and research institutions recognized for their expertise in the area, and by marine mammal biologists with extensive background in specific areas of underwater acoustics. This approach is deemed the most cost effective and efficient course of action for the Navy.