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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Navy	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0303562N: <i>Submarine Tactical Warfare Systems - MIP</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	4.231	-	-	-	-	-	-	-	-	0.000	4.231
0770: <i>Adv Sub Supp Equip Prog</i>	4.231	-	-	-	-	-	-	-	-	0.000	4.231

A. Mission Description and Budget Item Justification

The Submarine Tactical Warfare Systems MIP program element is comprised of the Advanced Submarine Support Equipment Program (ASSEP). The objective is to improve submarine operational effectiveness through the development and implementation of advanced Research and Development (R&D). In order to provide improved operational effectiveness, research and development, efforts are focused on Advanced Imaging Developments and Advanced Electronic Warfare Support (ES) Developments. A continuing need exists to improve these capabilities in view of the advancements in potential imaging counter detection, the need to support specialized missions and the increasingly dense and sophisticated electronic environment caused by the proliferation of complex radar, communications, and navigation equipment of potential adversaries. Ongoing developments in 360 degree imaging systems technologies are supporting these needs.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	4.253	-	-	-	-
Current President's Budget	4.231	-	-	-	-
Total Adjustments	-0.022	-	-	-	-
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Congressional General Reductions Adjustments	-0.022	-	-	-	-

Change Summary Explanation

Technical: Not applicable.

Schedule: Not applicable.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0303562N: <i>Submarine Tactical Warfare Systems - MIP</i>	PROJECT 0770: <i>Adv Sub Supp Equip Prog</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
0770: <i>Adv Sub Supp Equip Prog</i>	4.231	-	-	-	-	-	-	-	-	0.000	4.231
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

A continuing need exists to improve Imaging and Electronic Warfare Support (ES) capabilities in view of the advancements in potential imaging counter detection and the increasingly dense electromagnetic environment caused by the proliferation of complex radar, communications, and navigation equipment of potential adversaries. Improvements are necessary for submarine ES and imaging to be operationally effective in the following mission areas: Joint Littoral Warfare, Joint Surveillance, Space and Electronic Warfare, Intelligence Collection, Maritime Protection and Joint Strike. The program is divided into two project categories: Advanced Imaging Project Development and Advanced Electronic Warfare Support Project Development. Both of these categories will allow for the evaluation of the vulnerability of submarine masts, periscopes and sensors to visual, radar, and infrared detection and evaluation of state of the art technology to implement periscope/mast engineering improvements to reduce counter detection threats, the pursuit of technologies (such as 360 degree imaging systems) to develop submarine unique improvements to mast, periscope, and ES electromagnetic and electro-optic sensors based on emerging technologies available from academia and other sources. Engineering demonstration models (EDMs) are developed, evaluated, and validated in the lab and through at-sea testing.

The Advanced Imaging Project Development Projects include the development of: 360 Degree Imaging - Far Term Advanced System, 360 Degree Imaging 360 Degree JPL, 360 Degree Affordable Modular Panoramic Periscope (AMPP) - Near Term System, 360 Degree Submarine Panoramic Infra-Red (SPIR) Imaging System, Advanced Head Window Water Shedding, Electro-Optic/Infrared Vulnerability Signature Reduction and Mast Signature Reduction. The Advanced Electronic Warfare Support (ES) Development Projects include the development of: Distant ES Support and Remote Log-In, Rapid Reprogram Threat Library, Specific Emitter Identification (SEI) Improvements, ES Vulnerability Tool, Enhanced DeInterleavers, ES Server, LPI DF and ES OBT.

All programs funded in this project are non-acquisition category programs. The test articles identified consist of critical components that will be fully developed during engineering development into Engineering Development Models (EDMs).

ASSEP Program was transferred from a Military Intelligence Program, Program Element (PE) 0303562N in Fiscal Year 2012 back to PE 0603562N.

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

	FY 2011	FY 2012	FY 2013
<p>Title: Advanced Imaging Project Development</p> <p align="right">Articles:</p> <p>FY 2011 Accomplishments: 360 Degree Imaging (JPL) - Far Term Advanced System: Conducted Spiral 1 Testing 360 Degree Submarine Panoramic Mid-wave Infra-Red (MWIR) Imaging System; Generated Performance Specification 360 Degree Affordable Modular Panoramic Periscope (AMPP) - Generated Performance Specifications</p>	2.723 0	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012	
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0303562N: <i>Submarine Tactical Warfare Systems - MIP</i>	PROJECT 0770: <i>Adv Sub Supp Equip Prog</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012
Advanced Head Window Water Shedding - Performed At Sea Test and BIO-Fouling Report Mast Signature Reduction - Performed Thermal Studies Low Cost, Multi-Spectral, Grade A, Head Window Spinel: Lab EQT Test			
Title: Advanced Electronic Warfare Support (ES) Project Development. FY 2011 Accomplishments: Technical Insertions (TI) Distant ES Support and Remote Log-In - Development In-Process Rapid Reprogram of Threat Libraries - Development In-Process ES Vulnerability Tool - Development In-Process		Articles: 1.508 0	-
Accomplishments/Planned Programs Subtotals		4.231	-
C. Other Program Funding Summary (\$ in Millions)			
N/A			
D. Acquisition Strategy			
<p>This project optimizes technology insertion using a build-test-build approach to support ES and imaging operational needs. Operational needs have been based on the tactical requirements identified in CNO letters, Serial N77/3U629212, dated 04 Sep 03, CNO Ltr Ser N772/5U936037 dtd 13 JUN 2005, CNO Ltr Ser N776/4U786103 dtd 1 APR 2004, COMSUBLANT/ COMSUBPAC, Virginia Class SSN Operational Requirements Documentation objectives, ORD for Photonics (ORD #365-87-94) [dtd JUL 1994], Operational Requirements Document (ORD) for ES (ORD # 570-77-00) [dtd 20 DEC 2000], ORD for ISIS (ORD #663-77-05) [dtd MAR 2005] Capability Development Document (CDD) for Submarine EW Systems [VER - DRAFT] and CDD for Submarine Imaging Systems [VER OCT 2009 DRAFT]. Project efforts develop submarine unique improvements to mast, periscope, and ES electromagnetic and electro-optic sensors based on emerging technologies that are available from and other sources. Engineering Demonstration Models (EDMs) will be developed to provide a realistic method of evaluating the improvements, including deployment on submarines for testing.</p>			
E. Performance Metrics			
The RDD program goal is to respond to urgent operational needs within 30 days and provide for rapid development and fielding of prototype solutions within 270 days.			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy											DATE: February 2012			
APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 4: Advanced Component Development & Prototypes (ACD&P)				R-1 ITEM NOMENCLATURE PE 0303562N: Submarine Tactical Warfare Systems - MIP				PROJECT 0770: Adv Sub Supp Equip Prog						
Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Systems Engineering	SS/FFP	JHU/ARL:Laural, MD	0.338	-		-		-		-	0.000	0.338		
Primary Hardware Development	C/CPFF	3 Phoenix:Fairfax, VA	0.451	-		-		-		-	0.000	0.451		
Primary Hardware Development	SS/CPIF	JPL:Pasadena, CA	0.318	-		-		-		-	0.000	0.318	Continuing	
Systems Engineering	WR	NUWC:Newport, RI	2.850	-		-		-		-	0.000	2.850	Continuing	
Subtotal			3.957	-		-		-		-	0.000	3.957		
Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Engineering Technical Services	C/CPAF	AT&T GSI:Vienna, VA	0.240	-		-		-		-	0.000	0.240	Continuing	
Subtotal			0.240	-		-		-		-	0.000	0.240		
Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Travel	WR	NAVSEA:WNY	0.034	-		-		-		-	0.000	0.034	Continuing	
Subtotal			0.034	-		-		-		-	0.000	0.034		
			Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals			4.231	-		-		-		-	0.000	4.231		
Remarks														

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0303562N: <i>Submarine Tactical Warfare Systems - MIP</i>	PROJECT 0770: <i>Adv Sub Supp Equip Prog</i>
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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Navy			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0303562N: <i>Submarine Tactical Warfare Systems - MIP</i>	PROJECT 0770: <i>Adv Sub Supp Equip Prog</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 0770				
ONR 360 MWIR Mid Term: Perf Spec	1	2011	1	2011
ONR 360 MWIR Mid Term: Lab Demo	3	2011	3	2011
ONR 360 MWIR Mid Term: Transition to PE 0603562N	1	2012	4	2012
JPL Version Long Term: High Resolution Spiral 1 Lab Demo	2	2011	2	2011
ONR AMPP Long Term: Perf Spec	3	2011	3	2011
ONR AMPP Long Term: Transition to PE 0603562N	1	2012	4	2015
Head Window Water Shedding: At-Sea Testing	2	2011	2	2011
Head Window Water Shedding: Transition to PE 0603562N	1	2012	4	2012
Low Cost, Multi-Spectral, Grade A, Head Window Spinel: Lab EQT Test	3	2011	3	2011
Electro-Optic/Infrared Vulnerability Signature Reduction: Special Wake Model Special	3	2011	3	2011
Electro-Optic/Infrared Vulnerability Signature Reduction: Transition to PE 0603562N	1	2012	4	2014
Technical Insert (TIs): Dev 1 - Remote Log-In	3	2011	3	2011
Technical Insert (TIs): Dev 2 - Rapid Reprogramming Threat Library	4	2011	4	2011
Technical Insert (TIs): Dev 3 - ES Vulnerability Tool	4	2011	4	2011
Technical Insert (TIs): Transition to PE 0603562N	1	2012	4	2017