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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604503N: <i>SSN-688 & Trident Modernization</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	119.629	118.897	100.591	-	100.591	87.802	90.413	82.879	112.114	Continuing	Continuing
0219: <i>Sub Sonar Improvement (ENG)</i>	55.912	71.795	64.697	-	64.697	61.962	61.369	60.726	62.623	Continuing	Continuing
0742: <i>Sub Integrated Ant System</i>	36.814	29.341	22.763	-	22.763	15.379	13.403	10.690	36.387	Continuing	Continuing
0775: <i>Submarine Supt Equip Prog</i>	1.430	-	1.271	-	1.271	1.300	1.330	1.372	1.407	Continuing	Continuing
1411: <i>Sub Tact Comm System</i>	20.889	17.761	11.860	-	11.860	9.161	14.311	10.091	11.697	Continuing	Continuing
9999: <i>Congressional Adds</i>	4.584	-	-	-	-	-	-	-	-	0.000	4.584

A. Mission Description and Budget Item Justification

The Submarine Support Equipment Program develops and improves submarine Electronic Warfare Support (EWS) technology, components, equipment, and systems that will increase submarine operational effectiveness, safety of ship, and survivability in an increasingly dense and sophisticated electromagnetic environment caused by the proliferation of complex radar, communications, and navigation equipment of potential adversaries. Enhancements are necessary for submarine EWS to be operationally effective in the following mission areas: Joint Littoral Warfare, Joint Surveillance, Space and Electronic Warfare and Intelligence Collection, Maritime protection, and Joint Strike.

The Submarine Sonar Improvement Program delivers block updates to Sonar Systems and improved Sensors installed on SSN 688, 688I, SSN 21, VIRGINIA, SSBN, and SSGN Class Submarines to maintain clear acoustical, tactical and operational superiority over submarine and surface combatants in all scenarios through detection, classification, localization, and contact following. Current developments are focused on supporting Littoral Warfare, Regional Sea Denial, Battle Group Support, Diesel Submarine Detection, Surveillance, and Peacetime Engagement.

UNCLASSIFIED

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B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	120.779	118.897	105.140	-	105.140
Current President's Budget	119.629	118.897	100.591	-	100.591
Total Adjustments	-1.150	-	-4.549	-	-4.549
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	2.491	-			
• SBIR/STTR Transfer	-2.890	-			
• Program Adjustments	-	-	-2.757	-	-2.757
• Section 219 Reprogramming	-0.728	-	-	-	-
• Rate/Misc Adjustments	-	-	-1.792	-	-1.792
• Congressional General Reductions Adjustments	-0.023	-	-	-	-

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 9999: Congressional Adds

Congressional Add: *Improved Submarine Towed Array Systems*

Congressional Add: *AN/BLQ 10A(V) WIDEBAND SIGNAL PROCESSOR*

Congressional Add Subtotals for Project: 9999

Congressional Add Totals for all Projects

	FY 2010	FY 2011
	1.593	-
	2.991	-
Congressional Add Subtotals for Project: 9999	4.584	-
Congressional Add Totals for all Projects	4.584	-

UNCLASSIFIED

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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
0219: <i>Sub Sonar Improvement (ENG)</i>	55.912	71.795	64.697	-	64.697	61.962	61.369	60.726	62.623	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This program delivers block updates to Sonar Systems installed on SSN 688, 688I, SSN 21, VIRGINIA, SSBN, and SSGN Class Submarines to maintain clear acoustical, tactical and operational superiority over submarines and surface combatants in all scenarios through detection, classification, localization, and contact following.

Acoustics Rapid COTS Insertion (A-RCI) was a multi-phased evolutionary development geared toward addressing acoustic superiority issues through the rapid introduction of interim development products applicable to all classes of submarines. A-RCI Phase I and II introduced Towed Array processing improvements, Phase III introduced Spherical Array processing improvements, and Phase IV provided High Frequency (HF) Array processing improvements for SSN 688I, SSGN, VIRGINIA and SSN 21 Class Submarines. As part of CNO N872's plan to maintain acoustic superiority for in-service submarines, a joint cooperative effort with PEO IWS-5 was established to deliver annual Advanced Processing Builds (APBs) to prevent obsolescence and deliver ongoing capability improvements. The capabilities in the APBs will be integrated as part of A-RCI certified system.

Sensor efforts provide increased operational capabilities for littoral operations, situational awareness, and reliability improvements.

Towed Systems development efforts provide increased operational capabilities and reliability improvements to maintain a clear acoustical, tactical, and operational superiority over submarine and surface combatants. These efforts include development of a Fiber Optic Thinline Towed Array (TB-33) for increased reliability, the Next Generation Fatline Towed Array (TB-34) which provide improved Littoral Operational capability, and the Low Cost Conformal Array, an HF array that provides enhanced situational awareness. Future Sensor development includes enhancements to long range passive detection, continued reliability improvements, and wide area search.

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

	FY 2010	FY 2011	FY 2012
Title: APB Productionization	14.976	15.816	14.474
Articles:	0	0	0
FY 2010 Accomplishments: Continued Advanced Processing Build (APB) Sea Testing, Integration, and Certification. This effort is primarily the transition of APB software from development to A-RCI for integration, testing, and formal certification.			
FY 2011 Plans:			

UNCLASSIFIED

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
Continue Advanced Processing Build (APB) Sea Testing, Integration, and Certification. This effort is primarily the transition of APB software from development to A-RCI for integration, testing, and formal certification. FY 2012 Plans: Continue Advanced Processing Build (APB) Sea Testing, Integration, and Certification. This effort is primarily the transition of APB software from development to A-RCI for integration, testing, and formal certification.				
Title: Integration and Testing.		38.209	41.231	39.648
		Articles: 0	0	0
FY 2010 Accomplishments: Supported Advanced Processing Builds installed on SSN 688I, SSN 688, SSBN 730, SSN 21, SSGN 726, and VA Class and new sensors TB-34 Towed Arrays, TB-33 Towed Arrays, and Low Cost Conformal Array (LCCA). FY 2011 Plans: Supports Advanced Processing Builds installed on SSN 688I, SSN 688, SSBN 730, SSN 21, SSGN 726, and VA Class and new sensors TB-34 Towed Arrays, TB-33 Towed Arrays, and Low Cost Conformal Array (LCCA). FY 2012 Plans: Supports Advanced Processing Builds installed on SSN 688I, SSN 688, SSBN 730, SSN 21, SSGN 726, and VA Class and new sensors TB-34 Towed Arrays, TB-33 Towed Arrays, and Low Cost Conformal Array (LCCA).				
Title: Low Cost Conformal Array (LCCA)		1.700	-	-
		Articles: 0		
FY 2010 Accomplishments: ARCI Integration, TECHEVAL, and OPEVAL testing was conducted in FY10.				
Title: Affordable Towed Array Technology (TB-33)		0.828	11.575	10.308
		Articles: 0	0	0
Description: Affordable Towed Array Technology (TB-33) development provides more affordable and reliable thinline arrays using fiber optic technology and eliminates "wet end" electronics. The program will transition to Production Representative Unit (PRU) Fabrication. FY 2010 Accomplishments: Continued development of PRU and testing. FY 2011 Plans:				

UNCLASSIFIED

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Continue development of special test modules to evaluate PRU design. FY 2012 Plans: Continue development of special test modules to evaluate PRU design.			
Title: Future Sensor Capability Description: Providing array capability improved long range passive detection, continued reliability improvements, and wide area search. FY 2010 Accomplishments: TECHEVAL and OPEVAL tests were conducted along with the development and deliveries of the first three systems. FY 2011 Plans: Continue testing engineering capabilities. FY 2012 Plans: Continue testing engineering capabilities.	0.199 0	3.173 0	0.267 0
Articles:			
Accomplishments/Planned Programs Subtotals	55.912	71.795	64.697

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

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPN/BLI 214700: <i>SSN Acoustics</i>	225.695	189.640	174.584	0.000	174.584	184.520	296.377	252.124	370.492	Continuing	Continuing
• OPN/BLI 214705: <i>SSN Acoustics Installation</i>	52.859	47.375	38.329	0.000	38.329	34.517	36.430	52.605	52.121	Continuing	Continuing

D. Acquisition Strategy

Acoustic Systems:
A-RCI utilizes an open architecture and Commercial Off-the-Shelf products in support of new and upgraded sonar systems. A follow-on development and production sole source cost plus incentive fee contract was awarded to General Dynamics, Advanced Information Systems in August 2009 and to Lockheed Martin Maritime Systems & Sensors in April 2010. Program Review with Milestone Decision Authority was conducted in November 2009 granting approval for the FY10 production option.

Thinline Arrays:

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	PE 0604503N: <i>SSN-688 & Trident Modernization</i>	0219: <i>Sub Sonar Improvement (ENG)</i>

Towed Systems is the development of a highly reliable and more affordable Fiber Optic Thinline variant towed array which uses fiber optic sensor technology for data collection and moves all outboard electronics from the array to inboard the submarine where they can be easily maintained. Cost savings in array production will be gained by using automated production techniques and significantly reducing or eliminating the "hand touch" labor common to today's towed array production methods because of the number of different electronics that must be wired together to achieve the acoustics capabilities necessary to meet the threats of today and tomorrow. This development is being accomplished under a Phase III SBIR. The Critical Design Review (CDR) was completed in FY06 and the program has transitioned to the fabrication of Production Representative Units. Milestone C/LRIP planned for FY13. TECHEVAL and OPEVAL tests are scheduled for FY13 and FY14 respectively along with the development of the first three systems.

Hull Mounted Arrays:

The Low Cost Conformal Array (LCCA) transitioned from PEO IWS in FY08 with a competitive contract awarded for the PRU development. PRU procurements, fabrication, and assembly began in FY08. PRU deliveries were accepted in FY10. ARCI Integration, TECHEVAL, and OPEVAL testing were conducted in FY10.

E. Performance Metrics

The A-RCI program will modernize and sustain approximately 25% of the SSN Fleet per year through executing annual software Advanced Processing Builds (APBs) and bi-annual hardware Technical Insertions (TIs). The Low Cost Conformal Array (LCCA) program will successfully complete initial installation, developmental testing (DT), and operational testing (OT) in support of achieving the Initial Operating Capability (IOC). The TB-34 program will successfully achieve a Milestone C Full Rate Production decision. The TB-33 program will complete efforts to redesign critical components in support of initial installations.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 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
Primary Hardware Development	SS/CPIF	LMC:Manassas, VA	237.122	25.722	Dec 2010	22.520	Dec 2011	-		22.520	Continuing	Continuing	Continuing
Primary Hardware Development	C/CPFF	Chesapeake Sciences:Millersville, MD	37.167	11.325	Dec 2010	10.308	Dec 2011	-		10.308	0.000	58.800	
Ancillary Hardware Development	SS/CPFF	ARL University of Texas:Austin, TX	19.147	2.653	Feb 2011	3.061	Feb 2012	-		3.061	Continuing	Continuing	Continuing
Systems Engineering	SS/CPFF	Johns Hopkins APL:Baltimore, MD	21.702	2.553	Dec 2010	2.980	Dec 2011	-		2.980	Continuing	Continuing	Continuing
Systems Engineering	C/CPFF	Lockheed Eagan:MN - Keyport	18.669	2.607	Jan 2011	3.024	Jan 2012	-		3.024	Continuing	Continuing	Continuing
Primary Hardware Development	C/CPIF	Progeny Systems:Manassas, VA	26.981	6.500	Jan 2011	6.171	Jan 2012	-		6.171	Continuing	Continuing	Continuing
Primary Hardware Development	SS/CPIF	LM Syracuse:Syracuse, NY	11.523	-		-		-		-	0.000	11.523	
Systems Engineering	WR	NUWC:Newport, RI	135.848	7.597	Dec 2010	6.000	Dec 2011	-		6.000	Continuing	Continuing	Continuing
Systems Engineering	WR	NSWC:Carderock, MD	13.423	2.282	Dec 2010	2.514	Dec 2011	-		2.514	Continuing	Continuing	Continuing
Systems Engineering	WR	NSWC, :Crane IN	0.503	-		-		-		-	0.000	0.503	0.503
Systems Engineering	WR	Naval Research Lab:Washington, DC	1.607	0.250	Oct 2010	0.250	Dec 2011	-		0.250	Continuing	Continuing	Continuing
Primary Hardware Development	SS/CPIF	LM (IWS 5):Not Specified	8.602	3.173	Jan 2011	-		-		-	0.000	11.775	
Hardware/Software Development	C/CPFF	SBIR (Various):Not Specified	2.530	0.135	Jun 2011	-		-		-	0.000	2.665	
Subtotal			534.824	64.797		56.828		-		56.828			

UNCLASSIFIED

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

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Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 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
Primary Software Development	C/CPIF	General Dynamics, AIS:Fairfax, VA	139.957	2.596	Dec 2010	3.015	Dec 2011	-		3.015	Continuing	Continuing	Continuing
Primary Software Development	C/CPFF	Sedna Digital, Manassas, VA	12.938	3.819	Dec 2010	4.004	Dec 2011	-		4.004	Continuing	Continuing	Continuing
Subtotal			152.895	6.415		7.019		-		7.019			

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 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
Operational Test and Evaluation	WR	OPTEVFOR:Norfolk, VA	7.071	0.333	Dec 2010	0.600	Dec 2011	-		0.600	Continuing	Continuing	Continuing
Subtotal			7.071	0.333		0.600		-		0.600			

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 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
Management Support Services	C/FFP	EG&G Technical Services:Washington, DC	10.100	-		-		-		-	0.000	10.100	
Travel	WR	NAVSEA:Washington, DC	1.575	0.250	Dec 2010	0.250	Dec 2011	-		0.250	Continuing	Continuing	Continuing
Subtotal			11.675	0.250		0.250		-		0.250			

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total		Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		706.465	71.795		64.697		-		64.697			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
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UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
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UNCLASSIFIED

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UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
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UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 0219				
ACOUSTICS	1	2010	4	2016
Acquisition Milestones	1	2010	1	2013
Annual Program Review	1	2010	4	2016
Contract Awards	2	2011	3	2014
Procurements	2	2010	2	2016
DT/OT/FOT&E Tests	2	2010	3	2011
APB Deliveries	1	2010	4	2012
Tech Insertions	1	2010	1	2015
Installation Periods	1	2010	4	2014
LCCA	1	2010	4	2016
LCCA Submarine Test - TECHEVAL	3	2010	3	2010
LCCA Submarine Test - OPEVAL	3	2010	3	2010
Low Rate Initial Production	1	2010	2	2011
Full Rate Production	3	2011	4	2016
Fiber Optic Thinline Development FY02-FY13	1	2010	1	2013
System Deliveries	4	2012	4	2012
LPO Test (Lake Test)	2	2010	2	2010
TB-33 Submarine Test - TECHEVAL	2	2013	2	2013
TB-33 Submarine Test - OPEVAL	1	2014	1	2014
MS C LRIP Production Contract Award	1	2013	1	2014
MS C Full Rate Production	1	2015	1	2015

UNCLASSIFIED

UNCLASSIFIED

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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
TB-33 Production Deliveries	4	2014	4	2016
Low Rate Initial Production (LRIP)	1	2010	4	2010
TB-34 Submarine Test - OPEVAL	1	2010	1	2010
Milestone C Decision (FRP) / ARB	2	2011	3	2011
TB-34 Production Deliveries	2	2011	4	2016

UNCLASSIFIED

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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
0742: <i>Sub Integrated Ant System</i>	36.814	29.341	22.763	-	22.763	15.379	13.403	10.690	36.387	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Submarine Integrated Antenna System project (0742) provides for the development and testing of submarine antennas designed to meet emerging submarine requirements of: (a) Improved frequency coverage and data rate capabilities of submarine antennas and their interface to the External Communications System, (b) Improved submarine antenna performance and data rate while the submarine is operating at speed and depth, (c) Antenna compatibility with new waveforms and transceiver equipment, (d) Improved stealth capability of existing and future antennas and (e) Improved antenna design to reduce Total Ownership Cost. This project funds research and development for submarine antennas including (1) Pre-Planned Product Improvement (P3I) efforts to existing antennas including Outboard Electronics (OE)-538/BRC Multi-Function Antenna, (2) OE-562 Submarine, High Data Rate (SubHDR) system development of Underwater Explosion (UNDEX) modification kits, (3) Development of new systems including Advanced High Data Rate (AdvHDR), and (4) Commence support of Submarine Communications Buoy (SCB) Project Arrangement with United Kingdom (UK). The efforts listed above will provide Ship Submersible Nuclear (SSN), Ship Submersible Ballistic Nuclear (SSBN) and Ship Submersible Guided Nuclear (SSGN) platforms with improved communications capabilities to support future Joint, Allied, and Naval operations.

JUSTIFICATION FOR BUDGET ACTIVITY:

This project is funded under ENGINEERING AND MANUFACTURING DEVELOPMENT because it encompasses engineering and manufacturing development of new end-items prior to production approval decision.

Notes/Comments:

- FY12 OE-538: Complete the manufacturing of the Engineering Development Model. Perform a Development Test (DT) and Operational Assessment (OA).
- FY12 Submarine High Data Rate (SubHDR): Complete UNDEX development. Complete research and analysis on performance reliability components. Commence development of components identified by research and analysis.
- FY12 Advanced High Data Rate (AdvHDR): Continue risk mitigation demonstrations and technology maturation efforts towards technology readiness assessments in preparation of Milestone B.
- FY12 Submarine Communications Buoy (SCB): Commence support of Submarine Communications Buoy (SCB) project arrangement with UK. Commence performance requirements, Analysis of Alternatives for SCB.
- FY12 Communications at Speed and Depth (CSD): Increment 1 program close out.

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

	FY 2010	FY 2011	FY 2012
Title: Antenna Transition Engineering	3.729	4.557	3.984
Articles:	0	0	0
FY 2010 Accomplishments:			

UNCLASSIFIED

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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604503N: <i>SSN-688 & Trident Modernization</i>	PROJECT 0742: <i>Sub Integrated Ant System</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
<p>Continued emerging requirements and satellite communications (SATCOM) database/link analysis for other development programs i.e. Mobile User Objective System, Link 16, Wideband Global SATCOM, Advanced Extremely High Frequency, other new waveforms. Continued Pre-Planned Product Improvement investigation and development efforts for the legacy antenna systems. Continued investigation of multiple usage and assessments in support of current and future submarine antenna applications; specifically to assess the impact to the sail and hull penetrators on different classes of submarines.</p> <p>FY 2011 Plans: Continue to provide emerging requirements and satellite communications (SATCOM) database/link analysis for other development programs in support of current & future communication architectures. Continue Pre-Planned Product Improvement (P3I) investigation and development efforts towards legacy antenna systems. Continue concept engineering, new technology evaluations, and assessments in support of current and future submarine antenna applications, to include Hull, Mechanical, and Electrical (HM&E) interfaces. Continue to investigate multiple usage antennas, including antennas that can be used for communications and other functions.</p> <p>FY 2012 Plans: Continue to provide emerging requirements and SATCOM database/link analysis for other development programs in support of current & future communication architectures. Continue P3I investigation and development efforts towards legacy antenna systems. Continue concept engineering, new technology evaluations, and assessments in support of current and future submarine antenna applications, to include HM&E interfaces. Continue to investigate multiple usage antennas, including antennas that can be used for communications and other functions.</p>				
<p>Title: Outboard Electronics (OE)-538</p> <p>FY 2010 Accomplishments: Continued system design for Increment 2 Engineering Development Model (EDM) hardware/software. Continued integration and system testing of Increment 2 system. Continued system engineering including development of documentation and Integrated Logistics Support (ILS) products for Increment 2. Commenced development/update of required Milestone C acquisition documents.</p> <p>FY 2011 Plans: Continue Increment 2 system design, manufacture & test EDM to validate the design supports Fleet requirements (Mobile User Objective System (MUOS)/Link-16/Iridium). Prepare acquisition (e.g., Capabilities Production Document (CPD)) and applicable</p>		<p>7.365</p> <p>Articles: 0</p>	<p>11.744</p> <p>0</p>	<p>4.875</p> <p>0</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604503N: <i>SSN-688 & Trident Modernization</i>	PROJECT 0742: <i>Sub Integrated Ant System</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
<p>ILS documentation to support Low-Rate Initial Production decision. Continue development/update of required Milestone C acquisition documents.</p> <p>FY 2012 Plans: Complete Increment 2 system design, manufacture & test EDM to validate the design supports Fleet requirements (MUOS/Link-16/Iridium). Complete acquisition (e.g., Capabilities Production Document (CPD)) and applicable ILS documentation to support Low-Rate Initial Production (LRIP) decision. Complete development/update of required Milestone C acquisition documents. Complete Developmental Test and Operational Assessment (OA).</p>				
<p>Title: Submarine High Data Rate (SubHDR) Pre-Planned Product Improvement (P3I)</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: Continued Underwater Explosion (UNDEX) development and testing. Commenced research and analysis on Submarine High Data Rate (SubHDR) components to increase performance reliability.</p> <p>FY 2011 Plans: Continue UNDEX development and testing. Continue research and analysis on SubHDR components to increase performance reliability.</p> <p>FY 2012 Plans: Complete UNDEX development and testing. Complete research and analysis on SubHDR components to increase performance reliability. Commence development of components identified by research and analysis for performance reliability improvements.</p>		1.711 0	1.621 0	3.649 0
<p>Title: Advanced High Data Rate (AdvHDR)</p> <p align="right">Articles:</p> <p>FY 2010 Accomplishments: Continued design and acquisition documentation development in support of Milestone B. Continued system definition/risk reduction and system development efforts. Continued technology maturation and demonstration efforts. Continued system development engineering efforts.</p> <p>FY 2011 Plans: Continue design and acquisition documentation development in support of Milestone B. Continue system definition/risk reduction and system development efforts based on risk mitigation hardware. Continue technology maturation and demonstration efforts. Continue system development engineering efforts.</p> <p>FY 2012 Plans:</p>		7.819 0	6.719 0	7.291 0

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604503N: <i>SSN-688 & Trident Modernization</i>	PROJECT 0742: <i>Sub Integrated Ant System</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Continue design and acquisition documentation development in support of Milestone B. Continue system definition/risk reduction and system development efforts based on risk mitigation hardware. Continue technology maturation and demonstration efforts. Continue system development engineering efforts.			
Title: Communications at Speed and Depth (CSD)	16.190	4.700	0.050
Articles:	0	0	0
FY 2010 Accomplishments: Continued the design and development of the Increment 1 Engineering Development Models (EDMs) (Qty 2) and test assets including integrating the CSD capability into the shore Broadcast Control Authority.			
FY 2011 Plans: Provide program, contract, and system engineering management support. Delivery of Increment 1 EDMs.			
FY 2012 Plans: CSD Increment 1 program close out.			
Title: Submarine Communications Buoy (SCB)	-	-	2.914
Articles:			0
Description: A project arrangement between the United States and the United Kingdom.			
FY 2012 Plans: Commence support for SCB Project Arrangement with United Kingdom. Commence providing program, contract, and system engineering management support for Submarine Communications Buoy.			
Accomplishments/Planned Programs Subtotals	36.814	29.341	22.763

C. Other Program Funding Summary (\$ in Millions)										
<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>			<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u>
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>
• 313000: <i>Submarine Communications</i>	48.579	59.013	75.447	0.000	75.447	79.605	88.408	82.919	62.874	Continuing Continuing

D. Acquisition Strategy
 Program Milestones (MS):
 Outboard Electronics (OE)-538: 4th Quarter (QTR) FY12 Milestone C (MS C); 1st QTR FY14 Full Rate Production (FRP) Decision Review.
 Advanced High Data Rate (AdvHDR): 2nd QTR FY14 MS B.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604503N: <i>SSN-688 & Trident Modernization</i>	PROJECT 0742: <i>Sub Integrated Ant System</i>
Submarine Communications Buoy (SCB): MS B 1st QTR FY16.		
Test and Evaluation (T&E) Milestones: OE-538: 2nd QTR FY12 Developmental Test (DT) for MS C; 3rd QTR FY12 Operational Assessment (OA) for MS C; 3rd QTR FY13 DT for FRP; 4th QTR FY13 Operational Test for FRP. Contract Milestones: Submarine Communications Buoy (SCB): Contract Award 4th QTR FY16.		
E. Performance Metrics		
FY12 OE-538: Complete the manufacturing of the Engineering Development Model. Perform a DT and OA.		
FY12 Submarine High Data Rate (SubHDR): Complete Underwater Explosion (UNDEX) development. Complete research and analysis on performance reliability components.		
FY12 AdvHDR: Continue risk mitigation demonstrations and technology maturation efforts towards technology readiness assessments in preparation of Milestone B.		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604503N: <i>SSN-688 & Trident Modernization</i>	PROJECT 0742: <i>Sub Integrated Ant System</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 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
Digital Interface Dev (Submarine High Data Rate - SubHDR)	C/CPAF	Raytheon:Marlboro, MA	3.545	-		-		-		-	0.000	3.545	3.545
Digital Dev (SubHDR)	C/CPAF	Raytheon:Marlboro, MA	8.182	-		-		-		-	0.000	8.182	8.182
Hardware Dev (SubHDR)	WR	NUWC:Newport, RI	2.888	-		-		-		-	Continuing	Continuing	Continuing
Hardware Dev (SubHDR SHF/FOT)	C/CPAF	Raytheon:Marlboro, MA	14.632	-		-		-		-	0.000	14.632	14.632
Hardware Dev (Antenna Trans Eng)	C/CPAF	Sippican:Marion, MA	2.207	-		-		-		-	0.000	2.207	2.207
Hardware Dev (Communications at Speed and Depth - CSD)	C/CPAF	Apogen:San Diego, CA	2.800	-		-		-		-	0.000	2.800	2.800
Systems/Hardware Dev (CSD)	C/CPAF	Various:Various	39.353	1.970	Nov 2010	0.025	Nov 2011	-		0.025	Continuing	Continuing	Continuing
Systems/Hardware Dev (Submarine Communications Buoy - SCB)	TBD	TBD:TBD	-	-		1.900	Nov 2011	-		1.900	Continuing	Continuing	Continuing
Hardware Dev (Outboard Electronics (OE)-538)	C/CPAF	Submarine Antenna Joint Venture:MA and NH	9.245	8.319	Oct 2010	1.241	Jan 2012	-		1.241	Continuing	Continuing	Continuing
Systems Engineering (OE-538)	WR	NUWC:Newport, RI	3.499	1.250	Oct 2010	1.310	Jan 2012	-		1.310	Continuing	Continuing	Continuing
Systems Engineering (SubHDR)	C/CPFF	Raytheon:Marlboro, MA	6.316	-		-		-		-	0.000	6.316	6.316
System Engineering (SubHDR)	WR	NUWC:Newport, RI	15.607	0.200	Dec 2010	0.354	Jan 2012	-		0.354	Continuing	Continuing	Continuing
Systems Engineering (Advanced High Data Rate - AdvHDR)	WR	NUWC:Newport, RI	8.480	2.298	Nov 2010	2.239	Nov 2011	-		2.239	Continuing	Continuing	Continuing
System Engineering (Antenna Trans Eng)	WR	NUWC:Newport, RI	17.967	1.837	Nov 2010	1.673	Nov 2011	-		1.673	Continuing	Continuing	Continuing
System Engineering (Antenna Trans Eng)	Various	NUWC:Newport, RI	8.895	2.029	Nov 2010	1.681	Nov 2011	-		1.681	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604503N: <i>SSN-688 & Trident Modernization</i>	PROJECT 0742: <i>Sub Integrated Ant System</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 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
System Engineering (CSD)	Various	Various:Various	4.328	0.300	May 2011	-		-		-	Continuing	Continuing	Continuing
System Engineering (CSD)	WR	SSC PAC:San Diego, CA	3.048	-		-		-		-	Continuing	Continuing	Continuing
Systems Engineering (SCB)	TBD	UNKNOWN:UNKNOWN	-	-		0.500	Nov 2011	-		0.500	0.000	0.500	
Systems Engineering (CSD)	WR	NUWC:Newport, RI	16.820	1.701	May 2011	0.025	Nov 2011	-		0.025	Continuing	Continuing	Continuing
UNDEX Kit Development (SubHDR)	C/CPAF	Raytheon:Marlboro, MA	5.475	-		-		-		-	0.000	5.475	5.475
Technology Maturation/ Demonstrations Dev (Advanced High Data Rate - AdvHDR)	C/CPAF	NUWC:Newport, RI	6.121	1.550	Jan 2011	1.771	Dec 2011	-		1.771	Continuing	Continuing	Continuing
Research and Analysis Reliability Dev (Submarine High Data Rate - SubHDR)	WR	NUWC:Newport, RI	0.618	0.711	Jan 2011	0.620	Jan 2012	-		0.620	Continuing	Continuing	Continuing
Systems Engineering (AdvHDR)	Various	NUWC:Newport, RI	2.626	0.766	Nov 2010	1.345	Nov 2011	-		1.345	Continuing	Continuing	Continuing
Research and Analysis Reliability Dev (Submarine High Data Rate - SubHDR)	C/CPAF	UNKNOWN:UNKNOWN	-	-		2.198	Feb 2012	-		2.198	0.000	2.198	
Subtotal			182.652	22.931		16.882		-		16.882			

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 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
Integrated Logistics Support (AdvHDR)	Various	TCl:San Diego, CA	0.654	0.249	Nov 2010	0.284	Nov 2011	-		0.284	Continuing	Continuing	Continuing
Integrated Logistics Support (Antenna Trans Eng)	Various	TCl:San Diego, CA	0.050	-		-		-		-	0.000	0.050	0.050
Integrated Logistics Support (Outboard Electronics - OE-538)	Various	TCl:San Diego, CA	0.820	0.850	Oct 2010	0.875	Jan 2012	-		0.875	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604503N: <i>SSN-688 & Trident Modernization</i>	PROJECT 0742: <i>Sub Integrated Ant System</i>
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Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 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
Integrated Logistics Support (Communications at Speed and Depth - CSD)	Various	TCI:San Diego, CA	0.283	-		-		-		-	Continuing	Continuing	Continuing
Integrated Logistics Support (Submarine Communication Buoy - SCB)	TBD	UNKNOWN:UNKNOWN	-	-		0.100	Nov 2011	-		0.100	0.000	0.100	
Acquisition Documentation (Various)	Various	Ansol:San Diego, CA	0.932	0.200	Oct 2010	-		-		-	Continuing	Continuing	Continuing
Subtotal			2.739	1.299		1.259		-		1.259			

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 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
Test & Evaluation (Communication at Speed and Depth - CSD)	WR	COTF:Norfolk, VA	0.437	0.200	May 2011	-		-		-	Continuing	Continuing	Continuing
Test & Evaluation (Outboard Electronics (OE)-538)	WR	COTF:Norfolk, VA	0.299	0.125	Oct 2010	0.178	Jan 2012	-		0.178	Continuing	Continuing	Continuing
Test & Evaluation (Submarine High Data Rate - SubHDR)	WR	NUWC:Newport, RI	0.483	0.120	Dec 2010	-		-		-	Continuing	Continuing	Continuing
Developmental/Operational T&E (Advanced High Data Rate - AdvHDR)	WR	COTF:Norfolk, VA	0.015	0.050	Nov 2010	0.049	Nov 2011	-		0.049	Continuing	Continuing	Continuing
Developmental/Operational T&E (AdvHDR)	WR	NUWC:Newport, RI	0.350	0.255	Nov 2010	0.470	Nov 2011	-		0.470	Continuing	Continuing	Continuing
Developmental/Operational T&E (OE-538)	WR	NUWC:Newport, RI	0.266	0.350	Oct 2010	0.425	Jan 2012	-		0.425	Continuing	Continuing	Continuing
Test & Evaluation (CSD)	WR	SSC PAC:San Diego, CA	2.268	0.229	May 2011	-		-		-	Continuing	Continuing	Continuing
Test & Evaluation (SCB)	TBD	UNKNOWN:UNKNOWN	-	-		0.214	Nov 2011	-		0.214	0.000	0.214	
Subtotal			4.118	1.329		1.336		-		1.336			

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604503N: <i>SSN-688 & Trident Modernization</i>	PROJECT 0742: <i>Sub Integrated Ant System</i>

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604503N: <i>SSN-688 & Trident Modernization</i>	PROJECT 0742: <i>Sub Integrated Ant System</i>

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604503N: <i>SSN-688 & Trident Modernization</i>	PROJECT 0742: <i>Sub Integrated Ant System</i>

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604503N: <i>SSN-688 & Trident Modernization</i>	PROJECT 0742: <i>Sub Integrated Ant System</i>

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604503N: <i>SSN-688 & Trident Modernization</i>	PROJECT 0742: <i>Sub Integrated Ant System</i>

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604503N: <i>SSN-688 & Trident Modernization</i>	PROJECT 0742: <i>Sub Integrated Ant System</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 0742				
Submarine High Data Rate (SubHDR) Under Water Explosion (UNDEX) Development	1	2010	2	2012
SubHDR Research & Analysis for Performance Reliability	1	2010	1	2012
SubHDR Performance Reliability Component Development/Test	2	2012	4	2016
SubHDR Production Representatvie Engineering Development Model (EDM) Deliveries	2	2012	2	2012
SubHDR Follow-on Terminal/Super High Frequency (FOT/SHF) Production Deliveries	3	2010	3	2010
SubHDR Global Broadcast Service (GBS) Procurement Contract Award	3	2010	3	2010
SubHDR GBS Production Deliveries	2	2011	2	2011
SubHDR GBS/SHF Procurement Contract Option Award	2	2012	2	2012
SubHDR GBS/SHF Production Deliveries	1	2010	2	2013
SubHDR Radome Procurement Contract Option Awards	2	2012	2	2016
SubHDR Radome Production Deliveries	2	2013	2	2016
Advanced High Data Rate (AdvHDR) Technology Development	1	2010	2	2014
AdvHDR Milestone B Decision (MS B)	2	2014	2	2014
AdvHDR Capabilities Development Document (CDD)	1	2010	1	2013
AdvHDR Analysis of Alternative (AOA) for Optical Laser Communications (OLC)	1	2016	4	2016
AdvHDR Demonstration (DEMO)	1	2010	2	2014
AdvHDR Technology Maturation	1	2010	1	2014
Communications at Speed and Depth (CSD) Technology Development Increment 1	1	2010	2	2010
CSD Critical Design Review (CDR) Increment 1	3	2010	3	2010
CSD Test Readiness Review Increment 1	4	2010	4	2010
CSD System Verification Review (SVR) Increment 1	3	2011	3	2011

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604503N: <i>SSN-688 & Trident Modernization</i>	PROJECT 0742: <i>Sub Integrated Ant System</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
CSD Engineering Development Model (EDM) Increment 1 Development Contract	1	2010	1	2012
Communications at Speed and Depth (CSD) Engineering Development Model (EDM) Deliveries Increment 1	4	2011	4	2011
Submarine Communications Buoy (SCB) Milestone B	1	2016	1	2016
SCB Contract Award	4	2016	4	2016
SCB Analysis of Alternatives	2	2012	2	2012
SCB Capabilities Development Document (CDD)	3	2013	3	2014
SCB Technology Demonstrations (Project arrangement with United Kingdom (UK))	1	2012	4	2016
Outboard Electronics (OE)-538 Milestone C (MS C) Decision	4	2012	4	2012
OE-538 Full Rate Production Decision Review (FRP DR)	1	2014	1	2014
OE-538 Initial Operational Capability (IOC)	2	2014	2	2014
OE-538 Capability Production Document (CPD)	2	2010	1	2012
OE-538 Preliminary Design Review (PDR)	1	2011	1	2011
OE-538 Critical Design Review (CDR)	3	2011	3	2011
OE-538 System Development	1	2010	4	2012
OE-538 Engineering Development Model Development	1	2010	1	2012
OE-538 Eng Dev Model (EDM) - Deliveries	1	2012	3	2012
OE-538 Developmental Test (DT) for Milestone C (MS C)	2	2012	2	2012
OE-538 Operational Assessment (OA)	3	2012	3	2012
OE-538 Developmental Test (DT) for Full Rate Production (FRP)	3	2013	3	2013
OE-538 Operational Test (OT)	4	2013	4	2013
OE-538 Low-Rate Initial Production (LRIP) Contract Option	1	2013	1	2013
OE-538 Low-Rate Initial Production (LRIP) Deliveries	3	2013	4	2013
OE-538 Full Rate Production (FRP) Contract Options Year 1	2	2014	2	2014

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604503N: <i>SSN-688 & Trident Modernization</i>	PROJECT 0742: <i>Sub Integrated Ant System</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
OE-538 Full Rate Production (FRP) Contract Options Year 2	2	2015	2	2015
OE-538 Full Rate Production (FRP) Contract Options Year 3	2	2016	2	2016
OE-538 Full Rate Production (FRP) Deliveries 1	4	2014	4	2015
OE-538 Full Rate Production (FRP) Deliveries 2	4	2015	4	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604503N: <i>SSN-688 & Trident Modernization</i>	PROJECT 0775: <i>Submarine Supt Equip Prog</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
0775: <i>Submarine Supt Equip Prog</i>	1.430	-	1.271	-	1.271	1.300	1.330	1.372	1.407	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This program develops and improves techniques, components, equipment, and systems that will increase submarine operational effectiveness, safety of ship, and survivability in the increasingly dense and sophisticated electromagnetic environment caused by the proliferation of complex radar, communications, and navigation equipment of potential adversaries. Improvements are necessary for Submarine Electronic Warfare Support (ES) systems to be operationally effective in the following mission areas: Joint Littoral Warfare; Joint Surveillance, Space and Electronic Warfare and Intelligence Collection; Maritime Protection; Information Operations, Special Operations Force (SOF) Support; and Joint Strike. Efforts include: (1) Integration of the technology developed and transitioned from the Advanced Submarine Support Equipment Program (ASSEP), project F0770 into the tactical ES system; (2) Resolution of software trouble reports during technology updates, from fleet feedback reports, and Submarine Warfare Federated Tactical System (SWFTS)/Non Propulsion Electronic System (NPES) Tactical Local Area Network (TACLAN) migrations; (3) Integration, test, and installation of COTS technology for system enhancements.

The Electronic Warfare Support (ES) Development Projects include the development of: Low Probability of Intercept (LPI) Direction Finding (DF), Distant ES Support and Remote Log-In, Specific Emitter Identification (SEI) Improvements, ES Vulnerability Tool, Integrated ES and ECS Radio Frequency Distribution Unit (RFDU), Capability and Technical Initiatives, and next generation processes and radar wideband miniaturization.

RDTE Funding line supports the entire AN/BLQ-10 ES procurement program. Average FY OPN and SCN hardware procurement yearly funds are \$100M.

Submarine Support Equipment Program was transferred from a Military Intelligence Program, Program Element (PE) 0304503N in Fiscal Year 2012 back to PE 06034503N.

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

	FY 2010	FY 2011	FY 2012
Title: Submarine Support Equipment Program	1.430	-	1.271
Articles:	0		0
FY 2010 Accomplishments:			
Completed Test of LPI Receiver. Developed remote maintenance, processor improvements, and Advanced EW tuners. Researched and resolved AN/BLQ-10 SPRs. NPES and SWFTS software baseline changes. Identified, collected and quantified Technology Insertion next generation processor candidates for enhancement of the AN/BLQ-10 System.			
FY 2012 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604503N: <i>SSN-688 & Trident Modernization</i>	PROJECT 0775: <i>Submarine Supt Equip Prog</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Research capabilities for upgrades to AN/BLQ-10 baseline. Test and integrate insertions into NPES and SWFTS software baseline.			
Accomplishments/Planned Programs Subtotals	1.430	-	1.271

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

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• SCN/201300: <i>VIRGINIA Class Submarine</i>	23.060	0.000	100.793	0.000	100.793	50.695	72.095	69.035	87.176	0.000	402.854
• OPN/083100: <i>Submarine Support Equipment Program</i>	72.572	0.000	48.406	0.000	48.406	49.453	50.225	51.375	52.560	0.000	324.591
• RDT&E/0603562N: <i>Submarine Tactical Warfare System</i>	1.019	0.000	1.500	0.000	1.500	1.300	1.500	1.500	1.500	0.000	8.319

D. Acquisition Strategy
AN/BLQ-10 (V) ES System - Procurements are executed/managed in accordance with the Acquisition Strategy Report (Rev 6) for AN/BLQ-10(V) ES System dtd 12/14/09 and the Acquisition Plan (Rev 8) for AN/BLQ-10(V) ES System dtd 12/15/09.

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 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604503N: <i>SSN-688 & Trident Modernization</i>	PROJECT 0775: <i>Submarine Supt Equip Prog</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
AN/BLQ-10 ES Product Development	C/FP	Various Contractors:Not Specified	2.867	-		0.130	Mar 2012	-		0.130	0.000	2.997	
Systems Engineering & Test Support	WR	NUWC,;Newport, RI	2.192	-		0.881	Oct 2011	-		0.881	0.000	3.073	
Systems Engineering & Test Support	C/CPAF	TBD*:Not Specified	0.369	-		0.225	Mar 2012	-		0.225	0.000	0.594	
Subtotal			5.428	-		1.236		-		1.236	0.000	6.664	

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Engineering Technical Support	C/CPAF	AT&T GSI:VA	1.131	-	Mar 2011	-		-		-	0.000	1.131	
Subtotal			1.131	-		-		-		-	0.000	1.131	

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Travel	WR	NAVSEA:WNY	0.347	-		0.005	Mar 2012	-		0.005	0.000	0.352	
SBIR Assessment	Reqn	Not Specified:Not Specified	0.285	-		0.030	Feb 2012	-		0.030	0.000	0.315	
Labor (Research Personnel)	Reqn	Not Specified:Not Specified	0.122	-		-		-		-	0.000	0.122	
Subtotal			0.754	-		0.035		-		0.035	0.000	0.789	

			Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			7.313	-		1.271		-		1.271	0.000	8.584	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604503N: <i>SSN-688 & Trident Modernization</i>	PROJECT 0775: <i>Submarine Supt Equip Prog</i>
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	Total Prior Years Cost	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
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Remarks
*FY11 Systems Engineering and Test Support contract to be competitively awarded.

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604503N: <i>SSN-688 & Trident Modernization</i>	PROJECT 0775: <i>Submarine Supt Equip Prog</i>

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604503N: <i>SSN-688 & Trident Modernization</i>	PROJECT 0775: <i>Submarine Supt Equip Prog</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 0775				
AN/BLQ-10 Baseline Changes, SPR Resolution, and Software Enhancement 1	2	2010	2	2010
Capability Insertions (Pulse Digitizer Upgrade, Processor Upgrade, Muliti Static Passive Ranging/Signature Reduction) 1	3	2010	3	2010
Technical Insertions (Next Generation Processor, RADAR Wide Band Miniturization, Advanced EW Tuners) 1	4	2010	4	2010
AN/BLQ-10 Baseline Changes, SPR Resolution, and Software Enhancement 2	2	2012	2	2016
Capability Insertions (Pulse Digitizer Upgrade, Processor Upgrade, Muliti Static Passive Ranging/Signature Reduction) 2	3	2012	3	2016
Technical Insertions (Next Generation Processor, RADAR Wide Band Miniturization, Advanced EW Tuners) 2	2	2012	3	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604503N: <i>SSN-688 & Trident Modernization</i>	PROJECT 1411: <i>Sub Tact Comm System</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
1411: <i>Sub Tact Comm System</i>	20.889	17.761	11.860	-	11.860	9.161	14.311	10.091	11.697	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Common Submarine Radio Room (CSRR) transforms LOS ANGELES, OHIO and SEAWOLF Class radio rooms from suites of class-specific, closed system equipment to a common design which incorporates Open System Architecture communications equipment. CSRR will leverage VIRGINIA Class Exterior Communication System (ECS) design, utilize VIRGINIA Class ECS Control and Management software, apply a systems approach to design and implementation of Joint Maritime Communication System, and maximize use of Commercial Off-The-Shelf (COTS) products and emerging technologies. The Submarine Tactical Communications System project (1411) provides submarines with communications systems designed to: (a) enhance data throughput through automation and integrated network management; (b) convert to ForceNet and tactical data networks, (c) provide submarine Internet Protocol (IP) connectivity; (d) be interoperable with other joint United States and combined allied military networks; and (e) improve reliability, maintainability, and availability. This is accomplished by providing the submarine with a properly integrated mix of fully interoperable Navy standard and COTS communication equipment covering a wide range of frequencies and modes. The Common Submarine Radio Room (CSRR) integrates COTS and Government Off-The-Shelf components into a single radio room configuration for all classes of submarines. CSRR leverages and continues the development of VIRGINIA Class Exterior Communications System which includes Open Systems Architecture design. The project utilizes land-based integration test facilities to integrate C4I program of record components into the open architecture prior to fleet implementation on all submarine platforms. This project funds the development of a replacement Simulation/Stimulation suite to support testing and training requirements. The project includes system engineering efforts associated with demonstration of new technology which will allow submarines to connect to the global information grid and participate in strike group, as well as joint operations. The new technology will ensure the submarine's continued ability to participate in network-centric warfare and exploit its inherent stealth capabilities in support of the joint and combined fight to achieve total battlespace dominance.

JUSTIFICATION FOR BUDGET ACTIVITY:

This program is funded under ENGINEERING and MANUFACTURING DEVELOPMENT because it encompasses development and demonstration of new end-items prior to production approval decision.

Funding in FY12 is to complete CSRR modernization Increment 1 Version 3 for SEAWOLF, VIRGINIA and Ship Submersible Guided Nuclear (SSGN) class submarines. Complete upgrade of control & management software to include Increment 1 Version 3 capabilities and provide platform specific builds. Commence CSRR modernization Increment 1 Version 3 for Ship Submersible Ballistic Nuclear (SSBN) class submarines.

Per Acquisition Decision Memorandum signed by Assistant Secretary of Navy for Research, Development & Acquisition dated 15 July 2008 approval to consolidate Increments 1 and 2 to a single Increment 1 with multiple block upgrades (Versions).

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

	FY 2010	FY 2011	FY 2012
Title: Common Submarine Radio Room (CSRR)	20.889	17.761	11.860

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604503N: <i>SSN-688 & Trident Modernization</i>	PROJECT 1411: <i>Sub Tact Comm System</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Articles:	0	0	0
<p><i>FY 2010 Accomplishments:</i> Completed Multi-Purpose Reconfigurable Training System (MRTS) software upgrade for Increment 1 Ver 1 and Ver 2 CSRR baselines. Commenced MRTS software upgrade for Increment 1 Ver 3. Continue implementation of security upgrades to meet Information Assurance, Information Security and multiple levels of certification requirements for General Service and Sensitive Compartmented Information on all CSRR platforms. Completed systems engineering/design development and testing for CSRR Increment 1 Ver 2 for VIRGINIA FLT 1&2 and SEAWOLF platforms. Continued systems engineering development efforts for CSRR modernization Increment 1 Ver 3 for LOS ANGELES class submarines. Commenced systems engineering development efforts supporting CSRR modernization Increment 1 Ver 3 for SEAWOLF, VIRGINIA and Ship Submersible Guided Nuclear (SSGN) class submarines. Commenced upgrade of Control and Management software to include Increment 1 Ver 3 capabilities. Conducted Developmental Testing and Follow-On Test and Evaluation on the CSRR Increment 1 Ver 2 baseline.</p> <p><i>FY 2011 Plans:</i> Continue MRTS software upgrade for Increment 1 Ver 3 CSRR baseline. Continue implementation of security upgrades and meet Information Assurance, Information Security and multiple levels of certification requirements for General Service and Sensitive Compartmented Information for all CSRR platforms. Complete upgrade of CSRR Increment 1 Ver 2 for VIRGINIA FLT 1&2 and SEAWOLF control and management software. Complete systems engineering development for CSRR modernization Increment 1 Ver 3 LA class submarines. Continue CSRR modernization Increment 1 Version 3 for SEAWOLF, VIRGINIA and SSGN class submarines. Continue upgrade of Control and Management software to include Increment 1 Ver 3 capabilities.</p> <p><i>FY 2012 Plans:</i> Continue MRTS software upgrade for Increment 1 Ver 3 CSRR baseline. Continue implementation of security upgrades and meet Information Assurance, Information Security and multiple levels of certification requirements for General Service and Sensitive Compartmented Information for all CSRR platforms. Complete CSRR modernization Increment 1 Version 3 for SEAWOLF, VIRGINIA and SSGN class submarines. Support Operational Testing of the CSRR Increment 1 Version 3 baseline. Commence CSRR modernization Increment 1 Version 3 for SSBN class submarines. Complete upgrade of Control and Management software to include Increment 1 Version 3 capabilities and provide platform specific builds.</p>			
Accomplishments/Planned Programs Subtotals	20.889	17.761	11.860

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604503N: <i>SSN-688 & Trident Modernization</i>	PROJECT 1411: <i>Sub Tact Comm System</i>

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

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>			<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u>	
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	<u>Total Cost</u>
• 313000: <i>Submarine Communications</i>	48.579	59.013	75.447	0.000	75.447	79.605	88.048	82.919	62.874	Continuing	Continuing

D. Acquisition Strategy

CSRR transforms LOS ANGELES, OHIO and SEAWOLF Class radio rooms from suites of class-specific, closed system equipment to a common design which incorporates Open System Architecture communications equipment. CSRR will leverage VIRGINIA Class Exterior Communication System (ECS) design, utilize VIRGINIA Class ECS Control and Management software, apply a systems approach to design and implementation of Joint Maritime Communication System, and maximize use of Commercial Off-The-Shelf products and emerging technologies. Program Milestones: Increment 1 Ver 2 Developmental Test (DT) & Evaluation scheduled 3Q FY10, Follow-on Test & Evaluation (FOT&E) 1Q FY11 on a Ship Submersible Guided Nuclear (SSGN) platform. Increment 1 Ver 3 DT 3Q FY12, FOT&E 4Q FY12.

E. Performance Metrics

FY10 - FY12 CSRR reduces the overall cost for implementation of Command, Control, Communications Computer, Intelligence (C4I) Programs of Record (POR) components into the submarine external communication system by implementing block upgrades and reducing the integration/installation costs. The amount of RDTE funding is dependent on the number of baselines being integrated and tested in any given year.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604503N: <i>SSN-688 & Trident Modernization</i>	PROJECT 1411: <i>Sub Tact Comm System</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 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
Hardware Development	C/CPFF	SSC PAC:San Diego, CA	2.776	-		-		-		-	0.000	2.776	2.776
Hardware Development	C/CPFF	Various:Various	0.211	-		0.219	Nov 2011	-		0.219	Continuing	Continuing	Continuing
Multi-Crypto System (MCS) Development	Various	Motorola:Scottsdale, Arizona	10.214	-		-		-		-	0.000	10.214	10.214
Software Development	Various	SSC PAC:San Diego, CA	2.068	-		-		-		-	0.000	2.068	2.068
Software Development	WR	NUWC:Newport, RI	5.498	-		0.354	Nov 2011	-		0.354	Continuing	Continuing	Continuing
Multi-Purpose Reconfigurable Training System (MRTS) Development	C/CPFF	NAVAIR:Orlando, FL	11.065	2.772	Jan 2011	0.969	Jan 2012	-		0.969	Continuing	Continuing	Continuing
Systems Engineering	Various	NUWC:Newport, RI	29.454	4.103	Dec 2010	2.916	Nov 2011	-		2.916	Continuing	Continuing	Continuing
Systems Eng/Design 688 Class	Various	NUWC:Newport, RI	6.422	0.662	Dec 2010	-		-		-	Continuing	Continuing	Continuing
Site Platform Integration/Certification	Various	NUWC:Newport, RI	11.683	0.434	Dec 2010	0.434	Nov 2011	-		0.434	Continuing	Continuing	Continuing
Broadcast Control Authority/Operational Control (BCA/OPCON) architecture	WR	NUWC:Newport, RI	3.683	-		-		-		-	0.000	3.683	3.683
Software Development (CSRR)	C/CPAF	Lockheed Martin:Eagan, MN	26.780	4.198	Jan 2011	3.253	Dec 2011	-		3.253	0.000	34.231	
Subtotal			109.854	12.169		8.145		-		8.145			

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 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
Integrated Logistics Support	WR	NUWC:Newport, RI	2.569	0.502	Dec 2010	0.330	Dec 2011	-		0.330	Continuing	Continuing	Continuing
Software Engineering	WR	SSC PAC:San Diego, CA	2.346	0.623	Dec 2010	0.239	Nov 2011	-		0.239	Continuing	Continuing	Continuing
	Various		14.454	3.674	Dec 2010	1.123	Nov 2011	-		1.123	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604503N: <i>SSN-688 & Trident Modernization</i>	PROJECT 1411: <i>Sub Tact Comm System</i>
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Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 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
Information Security/ Information Assurance (INFOSEC/IA) Certification		SSC PAC/SSC LANT:San Diego, CA/ Charleston, SC											
Subtotal			19.369	4.799		1.692		-		1.692			

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 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
Developmental/Operational Test and Evaluation (T&E)	Various	Various:Various	9.283	-		1.406	Dec 2011	-		1.406	Continuing	Continuing	Continuing
Subtotal			9.283	-		1.406		-		1.406			

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 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
Program Management Support	Various	Various:Various	9.097	0.793	Dec 2010	0.617	Nov 2011	-		0.617	Continuing	Continuing	Continuing
Acquisition Workforce	Various	Various:Various	0.077	-		-		-		-	0.000	0.077	0.077
Subtotal			9.174	0.793		0.617		-		0.617			

			Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			147.680	17.761		11.860		-		11.860			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604503N: <i>SSN-688 & Trident Modernization</i>	PROJECT 1411: <i>Sub Tact Comm System</i>

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604503N: <i>SSN-688 & Trident Modernization</i>	PROJECT 1411: <i>Sub Tact Comm System</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 1411				
Interim Fielding Decision (Increment 1 Version (Ver) 2)	4	2010	4	2010
Fielding Decision (Increment 1 Version (Ver) 2)	2	2011	2	2011
Interim Fielding Decision (Increment 1 Version 3)	2	2012	2	2012
Fielding Decision (Increment 1 Ver 3)	1	2013	1	2013
Technical Reviews (Increment 1 Ver 3 Critical Design Review (CDR))	2	2011	2	2011
Technical Reviews (Increment 1 Ver 4 Preliminary Design Review (PDR))	2	2014	2	2014
Technical Reviews (Increment 1 Ver 4 CDR)	3	2015	3	2015
Technology Demonstration (Increment 1 Ver 3)	1	2010	2	2014
Technology Demonstration (Increment 1 Ver 4)	2	2014	4	2016
Contracts (Software---Lockheed Martin)	1	2010	4	2012
Contracts (Software---Lockheed Martin Follow-On)	1	2013	4	2016
Developmental Testing (DT) (Increment 1 Ver 2)	3	2010	3	2010
Operational Testing (OT) (Increment 1 Ver 2)	1	2011	2	2011
DT (Increment 1 Ver 3)	3	2012	3	2012
OT (Increment 1 Ver 3)	4	2012	4	2012
Full Rate Production (FRP) Deliveries	1	2010	1	2010
Procurement (Increment 1 Modernization Kits)	2	2010	2	2016
Installation (Increment 1 Modernization Kits)	2	2010	2	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604503N: <i>SSN-688 & Trident Modernization</i>	PROJECT 9999: <i>Congressional Adds</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
9999: <i>Congressional Adds</i>	4.584	-	-	-	-	-	-	-	-	0.000	4.584
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Continue research, development, and testing for several future arrays including the Vector Sensor Towed Array (VSTA), Sparsely Populated Volmetric Array (SPVA), and Multi-Function Towed Array (MFTA) to reduce array damage and enhance hull surveillance and detection.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2010	FY 2011
Congressional Add: Improved Submarine Towed Array Systems	1.593	-
FY 2010 Accomplishments: Conduct research, development, and testing for several future arrays including the Vector Sensor Towed Array (VSTA), Sparsely Populated Volmetric Array (SPVA), and Multi-Function Towed Array (MFTA) to reduce array damage and enhance hull surveillance and detection.		
Congressional Add: AN/BLQ 10A(V) WIDEBAND SIGNAL PROCESSOR	2.991	-
FY 2010 Accomplishments: N/A		
Congressional Adds Subtotals	4.584	-

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

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

Congressional add.