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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Navy **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604755N: <i>Ship Self Def (Detect & Cntrl)</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	48.526	71.222	87.662	-	87.662	73.032	56.850	52.014	52.993	Continuing	Continuing
0166: <i>SPS Improvement Program</i>	4.708	3.871	-	-	-	-	-	-	-	0.000	8.579
2178: <i>QRCC</i>	35.754	64.360	81.106	-	81.106	60.922	50.497	48.118	49.054	Continuing	Continuing
3172: <i>Joint Non-Lethal Weapons</i>	8.064	1.334	5.379	-	5.379	10.906	5.134	2.657	2.676	Continuing	Continuing
3306: <i>Integrated Swimmer Defense (ISD)</i>	-	1.657	1.177	-	1.177	1.204	1.219	1.239	1.263	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element consolidates currently ongoing and planned programmatic efforts related to Detect & Control aspects of Ship Self Defense (SSD) to facilitate effective planning and management of these efforts and to exploit the synergistic relationship inherent in each. Analysis and demonstration have established that surface SSD based on single-sensor detection point-to-point control architecture performs marginally against current and projected Anti-Ship Cruise Missile (ASCM) threats. The supersonic seaskimming ASCM reduces the effective battle space to the horizon and the available reaction time-line to less than 30 seconds from first opportunity to detect until the ASCM impacts its target ship. Against such a threat, multi-sensor integration is required for effective detection, and parallel processing is essential to reduce reaction time to acceptable levels and to provide vital coordination/integration of hardkill and softkill assets. These SSD projects address and coordinate the detect and control functions necessary to meet the rigorous SSD requirements within a development structure dedicated to systems engineering.

DETECTION: Improvements in coordinated sensor performance to increase the probability of detecting low altitude, low observable targets are to be achieved through the synergism gained from the integration of dissimilar sensor sources. Multi-sensor integration is being addressed through the efforts of Quick Reaction Combat Capability (QRCC) (2178), while sensor improvements were addressed through the SPS Improvements (0166). These provide improvements to both active and passive detection.

CONTROL: Multi-sensor integration, parallel processing and the coordination of hardkill/softkill capabilities in an automated, doctrine-based response to the ASCM threats are the cornerstones of Ship Self Defense System (SSDS) being developed through QRCC (2178) efforts. In addition, that project provides for the central system engineering management of SSD developments, including efforts required to integrate SSDS with the Advanced Combat Direction System (ACDS) functionality for those ships having a CDS with the Open Architecture Computing Environment and with advanced sensor, weapon and C4I upgrades.

Shipboard Protection System (SPS) develops an integrated shipboard, suite of systems designed to detect, identify, and engage asymmetric surface threats.

Integrated Swimmer Defense (ISD) scope is to provide the Navy Expeditionary security forces with capabilities of a portable marine integrated swimmer defense system (ISDS) to engage combat swimmers/divers or unknown individuals underwater once they have been detected.

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Non-Lethal Weapons provides a long range laser warning and dazzle systems for use in the maritime environment. Optical warning and distraction has been identified by the services as a possible technology solution to mitigate and/or address several known joint non-lethal capability gaps.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	45.930	71.222	73.076	-	73.076
Current President's Budget	48.526	71.222	87.662	-	87.662
Total Adjustments	2.596	-	14.586	-	14.586
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	3.500	-			
• SBIR/STTR Transfer	-0.671	-			
• Program Adjustments	-	-	14.934	-	14.934
• Rate/Misc Adjustments	-	-	-0.348	-	-0.348
• Congressional General Reductions Adjustments	-0.233	-	-	-	-

Change Summary Explanation

\$3.5M was added in FY11 for the development of Non Lethal vessel-entanglement technologies.
 \$3.3M was added in FY13 for the integration and test of SSDS MK2 Link 16 interoperability improvements in support of critical Strike Group interoperability improvements under the AEGIS Wholeness Initiative.
 \$4.5M was added in FY13 for the development of Non Lethal Weapons.
 \$3.48M was removed in FY13 due to cancellation of the SPS program.
 \$10.8M was added in FY13 for SSDS MK2 MOD6C ACB12 Product Development for the development and integration of product line software components for the new CVN78 combat system interfaces. This also includes funds for development test and evaluation for ESSM Missile integration testing with SSDS MK2 MOD6C and Dual Band Radar.

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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 0604755N: <i>Ship Self Def (Detect & Cntrl)</i>	PROJECT 0166: <i>SPS Improvement Program</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
0166: <i>SPS Improvement Program</i>	4.708	3.871	-	-	-	-	-	-	-	0.000	8.579
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Shipboard Protection System (SPS) develops an integrated shipboard, suite of systems designed to detect, identify, and engage asymmetric surface threats. Capabilities include: Surface Surveillance System, MK 49 stabilized gun mounts and Non-Lethal weapons/devices. The surface surveillance system integrates EO/IR sensors, and radar into a common tactical surveillance system. Stabilized guns: provide integrated lethal engagement capability against asymmetric threats. Non-lethal weapons (NLW) assist in determining intent and target discrimination. SPS is to be fielded in blocks through evolutionary acquisition. The block approach facilitates the early delivery of enhanced situational awareness capability. Future blocks will introduce lethal and non-lethal effectors with total detect to engage capability integration. The SPS 'End State System' will provide Navy vessels with the ability, in foreign and domestic ports, to protect themselves from attacks by asymmetric surface threats. This ability requires that information necessary to seamlessly execute the detect-to-engage sequence be collected, processed, communicated, and acted upon before threats reach their objectives. Due to the requirement for 360 degree coverage for situational awareness and engagement, design variants are required to ensure coverage requirements are met for larger (CVN, LHA, LHD) as well as smaller (DDG, CG, LSD, LPD) platforms.

Note: Starting in FY13, the SPS program will be cancelled to support higher Departmental priorities.

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

	FY 2011	FY 2012	FY 2013
Title: SPS Improvement Program	4.708	3.871	-
Articles:	0	0	
FY 2011 Accomplishments: Shipboard Protection System - System design for other ship classes, integration with MK38 Mod 2 system.			
FY 2012 Plans: Shipboard Protection System - System design for other ship classes; developmental test events for previously designed systems.			
Accomplishments/Planned Programs Subtotals	4.708	3.871	-

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

Line Item	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
• OPN/8128: <i>SPS Program</i>	16.450	31.291	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	66.939

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D. Acquisition Strategy

Revised acquisition strategy is to orderly ramp down Shipboard Protection System (SPS) and initiate Task Force Defense efforts by FY13.

E. Performance Metrics

Successfully achieved Milestone C. Successfully conduct SPS Block 3 Release 2 Critical Design Review (CDR).

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604755N: <i>Ship Self Def (Detect & Cntrl)</i>	PROJECT 0166: <i>SPS Improvement Program</i>
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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
Hardware/Software Development (Crane)	WR	NSWC Crane:Crane IN	3.377	1.000	Nov 2011	-		-		-	0.000	4.377	
Hardware/Software Development (Dahlgren)	WR	NSWC Dahlgren:Dahlgren VA	5.443	1.000	Nov 2011	-		-		-	0.000	6.443	
Hardware/Software Development (NG)	Various	NORTHROP GRUMMAN:Not Specified	0.236	-		-		-		-	0.000	0.236	
Hardware/Software Development (NAVAIR)	WR	NAVAIR/KDH:Pax River MD	0.200	-		-		-		-	0.000	0.200	
Subtotal			9.256	2.000		-		-		-	0.000	11.256	

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 Services (CRANE)	WR	NSWC CRANE:Crane IN	2.326	0.400	Nov 2011	-		-		-	0.000	2.726	
Engineering Services (DAHLGREN)	WR	NSWC DAHLGREN:Dahlgren VA	2.121	0.411	Nov 2011	-		-		-	0.000	2.532	
Engineering Services (IWS)	C/FPIF	IWS PERISCOPE DETECT:Not Specified	4.193	-		-		-		-	0.000	4.193	
ILS FUNCTIONS	WR	NSWC DAHLGREN:Dahlgren VA	2.680	0.500	Nov 2011	-		-		-	0.000	3.180	
Subtotal			11.320	1.311		-		-		-	0.000	12.631	

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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 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			
T&E FUNCTIONS (COTF)	WR	COMOPTEVFOR:Norfolk VA	0.618	-		-		-		-	0.000	0.618	
T&E FUNCTIONS (Dahlgren)	WR	NSWC DAHLGREN:Dahlgren VA	1.498	0.250	Nov 2011	-		-		-	0.000	1.748	
T&E FUNCTIONS (Crane)	WR	NSWC CRANE:Crane IN	0.914	0.250	Nov 2011	-		-		-	0.000	1.164	
Subtotal			3.030	0.500		-		-		-	0.000	3.530	

Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 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			
MANAGEMENT SUPPORT	Various	VARIOUS:VARIOUS	0.275	-		-		-		-	0.000	0.275	
TRAVEL	Various	Not Specified:Not Specified	0.168	0.060	Nov 2011	-		-		-	0.000	0.228	
DAWDF	Various	Not Specified:Not Specified	0.008	-		-		-		-	0.000	0.008	
Subtotal			0.451	0.060		-		-		-	0.000	0.511	

	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		24.057	3.871	-	-	-	0.000	27.928

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Navy		DATE: February 2012
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	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Proj 0166																												
Program Phases: CG PLATFORM DEV																												
Program Phases: CVN PLATFORM DEV																												
Program Phases: LHD/LHA PLATFORM DEV																												
Test and Evaluation: Development Test: DT-C1 (DDG)																												
Test and Evaluation: Development Test: DT-C2 (L-class)																												
Test and Evaluation: Development Test: DT-C3 (CVN)																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Navy		DATE: February 2012
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 0166				
Program Phases: CG PLATFORM DEV	1	2012	4	2012
Program Phases: CVN PLATFORM DEV	1	2011	4	2011
Program Phases: LHD/LHA PLATFORM DEV	2	2012	4	2012
Test and Evaluation: Development Test: DT-C1 (DDG)	2	2011	3	2011
Test and Evaluation: Development Test: DT-C2 (L-class)	3	2012	4	2012
Test and Evaluation: Development Test: DT-C3 (CVN)	1	2012	2	2012

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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
2178: <i>QRCC</i>	35.754	64.360	81.106	-	81.106	60.922	50.497	48.118	49.054	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Quick Reaction Combat Capability (QRCC) project implements an evolutionary acquisition of improved ship self defense capabilities against Anti-Ship Cruise Missiles (ASCMs) for selected ships. The Ship Self Defense System (SSDS) is the integrating element of QRCC. The design integrates several existing stand-alone Anti-Air Warfare (AAW) systems that do not individually provide the complete detection, control, and engagement capabilities needed against low flying, high speed ASCMs with low radar cross sections. The SSDS integration concept fulfills the need for an automated detection, quick reaction and multi-target engagement capability emphasizing performance in the littoral environment. SSDS replaces manual control of several self-defense systems with a single integrated capability under the computer-aided control of ship operators. System design emphasizes use of non-developmental items, commercial standards, commercial processors, computer program reuse and open system architecture. SSDS is a physically distributed, open system architecture computer network consisting of commercially available or previously developed hardware. It includes the Navy's standard displays (AN/UYQ-70 and Common Display System) and command table for human-system interface, commercially based local area network access units and interface units, and commercially available fiber optic cabling.

SSDS MK1 integrates the SPS-49A(V)1 radar, SPS-67(V)1 radar, AN/SLQ-32A/B electronic warfare system, Combat Identification Friend or Foe-Self Defense (CIFF-SD), Rolling Airframe Missile (RAM) and Phalanx Close-In Weapon System and is installed on LSD41/49 class ships. SSDS MK1 successfully completed Operational Evaluation in June 1997. SSDS received Milestone III Approval for Full Rate Production (Mar 98) and authority to integrate with ACDS and Cooperative Engagement Capability (CEC) on CVN, LPD-17, LHD and LHA ship classes.

SSDS MK2 facilitates the incremental evolution and implementation of follow-on modifications. Development of SSDS MK2 leveraged critical experiments and re-use of technology and software from SSDS MK1. SSDS MK2 integrates other ship self defense elements, such as AN/SPQ-9B radar, NATO Sea-sparrow system, CEC and Tactical Data Links for joint interoperability. SSDS MK2 provides enhanced capabilities for Self Defense against air, and surface threats using both ownship and remote data to address AAW Capstone requirements. SSDS MK2 becomes the integrated, coherent real time Command and Control System for Aircraft Carriers and Amphibious ships. It will increase operational capabilities; improve combat readiness and Strike Group/Expeditionary Strike Group Interoperability; and promote standardization. It introduces new shipboard tactical displays and support equipment via Tech Insertion and warfighting capability improvements via Advanced Capability Builds (ACB). ACBs integrate advanced systems such as Dual Band Radar, Evolved Sea-Sparrow Missile (ESSM), RAM Block 2 missile, SLQ-32 SEWIP Block 2 and MH-60R Helicopter to implement the warfighting capability improvements.

In order to meet the Navy's warfighting capabilities and modernization concepts described in SEA POWER 21, Navy Open Architecture (OA) is being introduced in conjunction with SSDS P3I Commercial off the Shelf (COTS) Tech Refresh. This is the first step in unifying a set of war fighting functions into a single architecture shared among many ship classes. This principle of commonality is a major mechanism for cost control and avoidances in the Navy's future war fighting systems. Starting in 2008, SSDS MK 2 was rehosted existing tactical computer program applications to the Open Architecture Computing Environment (OACE) specifications/equipment suite concurrent with P3I COTS Tech Insertion (TI) cycles, prior to migration and integration with other OA applications for implementation on future

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APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	PE 0604755N: <i>Ship Self Def (Detect & Cntrl)</i>	2178: <i>QRCC</i>

new construction ships or during future ship modernization. Tech Insertion cycles and equipment tech refresh are driven by COTS obsolescence. In FY09, system development was initiated for SSDS MK1 Technology Refresh for the LSD 41/49 class ships. The effort will transition these ships to an SSDS MK OACE and SSDS MK 2 single source library. New system designation is SSDS MK2 Mod 5C. The system development effort encompasses tech insertion of new OA computing and display equipment (Common Processor System (CPS) and Common Display System (CDS)), modifications and additions to the SSDS MK 2 software for an upgraded interface with the Phalanx Closed-In-Weapon System (CIWS) Block 1B Baseline 2 and Battle Force Tactical Trainer (BFTT), and other unique LSD SSDS interfaces and functionality. The first LSD SSDS MK 2 Mod 5C is programmed for FY14 installation after land-based Combat System Integration and Certification Testing with IOC in FY15. In FY10, SSDS MK 2 system development commenced for the first phase of migration to the Navy OA objective functional architecture designated as SSDS MK 2 ACB-12/TI-12. ACB-12/TI-12 encompasses: implementation of common product line software components for System Track Management and Vehicle Control; integration of the product line System Track Management components and associated data model with other SSDS software components and Combat System interfaces (e.g. CEC, Dual Band Radar, ESSM and JUWL up-link, RAM Block 2 and CV-TSC); integration of new interfaces with SEWIP Block 2 ES, MH-60R and Global Command & Control System-Maritime (GCCS-M) via Consolidated-Afloat Network and Enterprise Services (CANES); integration of Common Processors System and Common Display System; and expansion of SSDS MK 2 Local Area Network (LAN) to OA Combat System LAN. ACB-12/TI-12 is planned for IOC in the CVN 78, CVN 72 in FY16, and Amphibious Assault Ships in FY17. In FY11-FY13, advanced planning, analysis, and requirements definition will be undertaken for SSDS MK 2 ACB-16/TI-16. ACB-16 warfighting improvement integration candidates include SEWIP Block 2 with automated radar designation decoy launch, CIWS and SPS-48G Sensor Integration, interoperability of IFF Mode 5/S and Joint Strike Fighter, advanced MH-60R integration, total ship training capability updates and GCCS-M Data Exchange via CANES. TI-16 will include COTS Hardware and Software Tech Insertion candidates for computing, display, network switching, interfaces and information assurance devices to support system and equipment modernization driven by COTS obsolescence. Funds were added in FY13 for the integration and test of SSDS MK2 Link16 interoperability improvements in support of critical Strike Group interoperability improvements under the AEGIS Wholeness Initiative.

Prepare and conduct comprehensive Combat System test for Combat System and SSDS MK 2 hardware/software upgrades for the CVN, LPD 17, LHD, LHA 6 and LSD ship classes. This includes Land Based testing at Wallops Island and At-Sea testing in the lead ships for specific ship class Combat System configuration and testing in the Self Defense Test Ship. The testing encompasses test preparation, integration, engineering and development tests, data collection and analysis, and resolution and verification of deficiency corrections. The SSDS MK 2 T&E support Combat System certification, the SSDS Test and Evaluation Master Plan (TEMP) and the Air Warfare Ship Self Defense CAPSTONE Enterprise TEMP.

The initial Development Test and Evaluation (DT&E) and Follow On Operational Test and Evaluation (FOT&E) for SSDS MK 2 was conducted with the CVN 76 SSDS MK 2 Mod 1 configuration in FY05. In FY07, the SSDS MK 2 FOT&E requirements were linked with the Air Warfare Ship Self Defense Enterprise T&E initiative to combine At-Sea Combat System element DT&E and OT&E requirements to synergize the resources required for testing in the SSDS MK 2 ships and the Self Defense Test Ship. The LPD-17 class SSDS MK 2 Mod 2 FOT&E was conducted in FY07/FY08 as part of the Enterprise T&E initiative. Live fire, Combat System end-to-end testing was conducted against Anti Ship Cruise Missile targets in the Self Defense Test Ship in FY07/08/09 in the CVN/LHD/LPD configurations. FOT&E of ESSM integration with SSDS MK 2 was initiated in the CVN class in FY08 and will extend through FY11. FOT&E for the CVN class SSDS MK 2 Mod 1B P3I OACE COTS Tech Insertion was conducted in FY09. Future FOT&E includes the LHA 6 SSDS MK 2 Mod 4B configuration with the RAM Block 2 missile, the LSD SSDS MK 2 Mod 5C configuration with the Phalanx CIWS 1B Baseline 2 system, and CVN 78 SSDS MK 2 Mod 6C configuration with the Dual Band Radar, SEWIP Block 2 ES, ESSM with JUWL up-link, and RAM Block 2.

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>Title: SSDS MK2 Development Test & Evaluation</p> <p align="right">Articles:</p> <p>FY 2011 Accomplishments: For CVN 71/LPD24/LHA 6 SSDS MK2 Mod 1B/2B/4B Configurations with RAM Block 2, ESSM integration and Linux OACE: - Initiated Land Based system integration and engineering test for CVN71/LPD24/LHA 6; - Completed Land Based system integration and engineering test for CVN71</p> <p>For LSD SSDS MK2 Mod 5C configuration with the Phalanx CIWS Block 1B Baseline 2, RAM Block 2 and CPS/CDS equipment: - Initiated Land Based system integration and engineering test for LSD 46.</p> <p>FY 2012 Plans: For CVN71/LPD24/LHA 6 SSDS MK2 Mod 1B/2B/4B Configurations with RAM Block 2 ESSM integration and Linux OACE: - Complete Land Based system integration and engineering test for LPD24; - Initiate Land Based DT for LHA 6;</p> <p>For LSD SSDS MK2 Mod 5C configuration with the Phalanx CIWS Block 1B Baseline 2, RAM Block 2 and CPS/CDS equipment: - Complete Land Based system integration and engineering test for LSD 46.</p> <p>For CVN78 SSDS MK2 Mod 6C configuration with Dual Band Radar, CEC, TPX-42, STM, RAM Block 2 and CPS/CDS and Combat System LAN - Complete Land Based system integration and engineering test for CVN78 SSDS MK2 Engineering Software Releases for DBR Common Array Power and Cooling System integration.</p> <p>FY 2013 Plans: For CVN71/LPD24/LHA 6 SSDS MK2 Mod 1B/2B/4B Configurations with RAM Block 2 integration and Linux OACE: - Complete Land Based system integration and engineering test for LHA 6; - Conduct Land Based DT for LHA 6; - Conduct Live Fire At Sea Testing for LHA 6 in the Self Defense Test Ship (SDTS).</p> <p>For LSD SSDS MK2 Mod 5C configuration with the Phalanx CIWS Block 1B Baseline 2, RAM Block 2 and CPS/CDS equipment: - Conduct Land Based DT for LSD 50.</p> <p>For CVN78 SSDS MK2 Mod 6C configuration with Dual Band Radar, CEC, TPX-42, STM, ESSM, RAM Block 2 and CPS/CDS and Combat System LAN</p>	<p>13.161</p> <p>0</p>	<p>17.341</p> <p>0</p>	<p>21.463</p> <p>0</p>

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
- Initiate Land Based system integration and engineering test for CVN78 SSDS MK2 Engineering Software Releases for DBR Track capability and Missile Integration Capabilities with ESSM and RAM Block 2. This includes missile integration testing of ESSM X-Band JUWL uplink/downlink with the SSDS MK2 MOD6C, Dual Band Radar, and MK-29 launcher.				
Title: SSDS MK2 Product Development-Advanced Capability Builds (ACB)/Technology Insertion		22.593	47.019	59.643
Articles:		0	0	0
FY 2011 Accomplishments: Perform SSDS MK 2 System Development including integration of government furnished hardware and software to provide Warfighting Capability Improvements via Advanced Capability Builds (ACB), and Open Architecture Computing Environment (OACE) improvements and COTS obsolescence refresh via Technology Insertional Refresh. Product development encompasses studies and analysis, modeling and simulation, system requirement engineering, critical experiments, hardware and software design, software code development, advanced production units, hardware/software integration, factory system integration testing, factory qualification testing, and system pre and post certification support during Combat System Integration Testing, Combat System Certification testing, and Development Test and Evaluation (land-based and at-sea). For LSD SSDS MK 2 Mod 5C Tech Insertion, complete software code development, advanced production units and, hardware/software integration. For CVN 78 SSDS MK 2 Mod 6C ACB-12/TI-12, complete hardware Preliminary Design Review (PDR), complete software System Specification Review (SSR) for phase 1 of software development for product line system track manager integration, DBR track integration and CPS, CDS and Combat System LAN. Initiated planning/analysis for ACB-16/TI-16 candidates for Warfighting Capability Improvements and Technology Insertion Refresh.				
FY 2012 Plans: Perform SSDS MK 2 System Development including integration of government furnished hardware and software to provide Warfighting Capability Improvements via Advanced Capability Builds (ACB), and Open Architecture Computing Environment (OACE) improvements and COTS obsolescence refresh via Technology Insertional Refresh. Product development encompasses studies and analysis, modeling and simulation, system requirement engineering, critical experiments, hardware and software design, software code development, advanced production units, hardware/software integration, factory system integration testing, factory qualification testing, and system pre and post certification support during Combat System Integration Testing, Combat System Certification testing, and Development Test and Evaluation, land-based and at-sea.				

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604755N: <i>Ship Self Def (Detect & Cntrl)</i>	PROJECT 2178: <i>QRCC</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
For LSD SSDS MK 2 Mod 5C Tech Insertion, complete Factory System Integration Test and Factory Qualification Testing and provide pre and post certification support during Combat System certification testing.				
For CVN 78 SSDS MK 2 Mod 6C, complete hardware CDR and software PDR and CDR for phase 1 of software development and SSR for second phase of software development for ESSM with JUWL up-link, SEWIP Block 2 ES and CV-TSC/MH-60R. Initiate development of operator and maintenance training courses for SSDS MK 2 Mod 6C/1C ACB-12/TI-12.				
For ACB-16/TI-16, define and generate documentation for Combat System requirements.				
FY 2013 Plans: Perform SSDS MK 2 System Development including integration of government furnished hardware and software to provide Warfighting Capability Improvements via Advanced Capability Builds (ACB), and Open Architecture Computing Environment (OACE) improvements and COTS obsolescence refresh via Technology Insertional Refresh. Product development encompasses studies and analysis, modeling and simulation, system requirement engineering, critical experiments, hardware and software design, software code development, advanced production units, hardware/software integration, factory system integration testing, factory qualification testing, and system pre and post certification support during Combat System Integration Testing, Combat System Certification testing, and Development Test and Evaluation, land-based and at-sea.				
For CVN 78 SSDS MK 2 Mod 6C, complete software code and unit test for phase 1 of software development for product line system track manager integration, DBR track integration and CPS, CDS and Combat System LAN; and complete software PDR and CDR for phase 2 for ESSM with JUWL up-link, SEWIP Block 2 ES and CV-TSC/MH-60R. Continue development of operator and maintenance training courses for SSDS MK 2 Mod 6C/1C ACB-12/TI-12. This includes the development and integration of product line software components (Product Line System Track Manager/Track Server) within SSDS MK2; the required modifications to existing SSDS MK2 software for implementation of the common software components, and supporting modifications for the new Combat System architecture and interfaces.				
Conduct software integration and test of SSDS MK2 Link 16 interoperability improvement in support of Strike Group interoperability improvements as part of the AEGIS Wholeness Initiative.				
For ACB-16/TI-16, define and generate documentation for SSDS MK2 system requirements for software and hardware.				
Accomplishments/Planned Programs Subtotals		35.754	64.360	81.106

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

Line Item	FY 2011	FY 2012	FY 2013	FY 2013	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Cost To	
			Base	OCO	Total					Complete	Total Cost
• OPN/5239: <i>SSDS</i>	43.239	54.324	55.371	0.000	55.371	53.207	69.080	77.522	64.234	Continuing	Continuing
• RDTEN/0603382N: <i>Advanced Combat System Technology</i>	1.613	1.418	1.506	0.000	1.506	1.571	1.733	1.762	1.793	Continuing	Continuing
• RDTEN/0603658N: <i>Cooperative Engagement</i>	57.198	54.783	56.512	0.000	56.512	71.776	64.469	86.867	77.385	Continuing	Continuing
• RDTEN/0603582N: <i>Combat System Integration</i>	33.323	34.123	56.551	0.000	56.551	36.592	32.827	33.569	34.157	Continuing	Continuing
• RDTEN/0604307N: <i>Surface Combatant Cmbt Sys Eng</i>	195.569	223.217	260.616	0.000	260.616	253.166	226.221	263.670	142.545	Continuing	Continuing

D. Acquisition Strategy

The first SSDS MK 2 system procurements took place under a Cost Plus Award Fee (CPAF) contract in FY99 for the CVN 76, LPD 17, LPD 18 and CVN 69. Follow-on equipment procurements for additional ships of the CVN, LPD and LHD classes were awarded on Firm Fixed Price (FFP) contracts. For those ships that will be receive P3I OACE COTS tech Refresh hardware suites, the initial system Tech Refresh Development occurred under a CPAF type contract, with ship COTS conversion equipment/kits procured on FFP contracts.

A new system engineering/design agent and Life Cycle Maintenance Cost Plus Fixed Fee (CPFF) contract was awarded in FY05 and a follow-on cost type contract (with incentives), N00024-08-C-5122, was awarded on 30 Sept 2008, to support SSDS MK 2 system/software maintenance and system upgrades through FY12 including the P3I COTS Tech Insertion cycles. The contract (N00024-08-C-5122) will be extended through FY17/FY18 timeframe for the completion of the development, test, certification of SSDS MK2 (ACB12/TI12) for CVN78, CVN72, and Amphibious Assault Ships. A follow on combat system engineering/SSDS design agent contract is planned for competitive award in FY 14 for the development of SSDS MK2 ACB16.

E. Performance Metrics

Requirement Documents

- Ship Self Defense System (SSDS) Operational Requirement Document (ORD) approved April 1995 and validated in 1997.
- SSDS MK2 KPPs were promulgated in OPNAV N76 letter SER N766/1S649367 of 18 Dec 01.
- * Subject: Ship Self Defense System (SSDS) Requirement Clarification of Key Performance Parameters (KPP) and Measures of Suitability.
- * Included the Interoperability KPP for CVN/LPD/LHD
- SSDS MK2 KPPs were clarified in OPNAV N86 letter SER N86F/7U178266 of 13 Nov 07.
- * Subject: Ship Self Defense System (SSDS) Requirement Clarification of Key Performance Parameters (KPPs) and Measures of Suitability and Effectiveness

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
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<p>* Included Force Protection and Survivability KPPs - Test and Evaluation Master Plan (TEMP No. 1400) For Ship Self Defense System (SSDS) Revision B, 5 Mar 2008.</p> <p>Background - SSDS MK1 OPEVAL was successfully completed June 1997 with a Milestone III approval in March 1998 - SSDS MK2 MOD 1 FOT&E was conducted on CVN 76 in 2005. All KPP thresholds were met. However, the system was assessed as not suitable and not effective by COMOPTEVFOR based on the identification of SSDS MK2 and Combat Systems deficiencies (24major, 37 minor deficiencies). - SSDS MK 2 Mod 2 FOT&E was conducted in LPD 17-19 in 2007/2008. All KPPs thresholds were met and the system was assessed OPERATIONALLY EFFECTIVE and OPERATIONALLY SUITABLE by COMOPTEVFOR in the 12 Feb 2010 report. 10 major and minor deficiencies were identified against SSDS MK 2. (Also, major Warfare effects deficiencies were identified against the LPD 17 class Combat System). - SSDS MK 2 Mod 3A FOT&E was conducted in LHD 8 in Feb 2010. All KPPs thresholds were met and the system was assessed OPERATIONALLY EFFECTIVE and OPERATIONALLY SUITABLE by COMOPTEVFOR in the 13 Dec 2010 report. 10 major deficiencies were identified against SSDS MK 2. (Also, major Warfare effects deficiencies were identified against the LHD 8 Combat System).</p> <p>Status CVN SSDS MK 2 Mod 1 - 18 of 24 major deficiencies have been fixed/improved and verified as corrected or awaiting verification by COMOPTEVFOR. The status of the remaining 6 major deficiencies is as follows: * 4 have been identified as future efforts * 2 are radar design limitations that would require major system redesign. LPD SSDS MK 2 Mod 2 - 3 of 10 major deficiencies have been fixed/improved and verified as corrected or awaiting verification by COMOPTEVFOR. The status of the remaining 7 major deficiencies is as follows: * 3 have been identified as future efforts * 3 are in analysis * 1 would require major system redesign LHD SSDS MK 2 Mod 3A - 1 of 10 major deficiencies has been fixed/improved and verified as corrected or awaiting verification by COMOPTEVFOR. The status of the remaining 9 major deficiencies is as follows: * 3 have been identified as future efforts * 6 are in analysis</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy **DATE:** February 2012

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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			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	Cost To Complete	Total Cost	
Sys Eng/Safety (Dahlgren)	WR	NSWC DD:Dahlgren, VA	47.795	4.073	Nov 2011	4.480	Oct 2012	-		4.480	Continuing	Continuing	Continuing
Systems Engineering (JHU)	SS/FP	JHU/APL:Laurel, MD	46.630	6.666	Apr 2012	7.333	Nov 2012	-		7.333	Continuing	Continuing	Continuing
Sys Eng/Training Dev (PHD)	WR	NSWC PHD:Pt Hueneme, CA	19.916	2.407	Nov 2011	0.450	Oct 2012	-		0.450	Continuing	Continuing	Continuing
Sys Eng/ILS (CDSA)	WR	CDSA DN:Dam Neck, VA	15.225	2.407	Nov 2011	1.554	Oct 2012	-		1.554	Continuing	Continuing	Continuing
Systems Engineering (IH)	WR	NSWC IH:Indian Head, MD	3.056	-		-		-		-	Continuing	Continuing	Continuing
Systems Eng/Dev/Integrate (5100)	SS/CPAF	Gen. Dyn. (5100):Fairfax, VA	2.000	-		0.834	Nov 2012	-		0.834	Continuing	Continuing	Continuing
Display Development Kits	SS/FP	Lockheed Martin:St Paul, MN	3.958	-		-		-		-	Continuing	Continuing	Continuing
Systems Eng/Dev/Integrate (5110)	SS/CPAF	RSC (5110):San Diego, CA	50.100	30.351	Nov 2011	42.050	Nov 2012	-		42.050	Continuing	Continuing	Continuing
Systems Eng/Dev/Integrate (5132)	SS/CPAF	RSC (5132):San Diego, CA	20.576	-		-		-		-	Continuing	Continuing	Continuing
Award Fees (5132)	SS/CPAF	RSC (5132):San Diego, CA	3.603	-		-		-		-	Continuing	Continuing	Continuing
Systems Eng/Dev/Integrate (5108)	SS/CPAF	RSC (5108):San Diego, CA	98.646	-		-		-		-	Continuing	Continuing	Continuing
Systems Eng/Dev/Integrate (5466)	SS/CPAF	RSC (5466):San Diego, CA	20.353	-		-		-		-	Continuing	Continuing	Continuing
Systems Eng/Dev/Integrate (5104)	SS/CPFF	RSC (5104):San Diego, CA	23.685	-		-		-		-	Continuing	Continuing	Continuing
Award Fees (5108)	SS/CPAF	RSC (5108):San Diego, CA	11.208	-		-		-		-	Continuing	Continuing	Continuing
Award Fees (5466)	SS/CPAF	RSC (5466):San Diego, CA	2.163	-		-		-		-	Continuing	Continuing	Continuing
Systems Eng/Dev/Integrate	SS/CPAF	RSC (5202):Portsmouth, RI	-	-		1.794	Nov 2012	-		1.794	Continuing	Continuing	Continuing
RisK Reduction/EMD	Various	Various:Various	76.366	-		-		-		-	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604755N: <i>Ship Self Def (Detect & Cntrl)</i>	PROJECT 2178: <i>QRCC</i>
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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
Misc.	Various	Various:Various	4.513	-		-		-		-	Continuing	Continuing	Continuing
Systems Engineering (Corona)	WR	NSWC Corona:Corona, CA	0.644	0.200	Jan 2012	0.247	Oct 2012	-		0.247	Continuing	Continuing	Continuing
Subtotal			450.437	46.104		58.742		-		58.742			

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
QA/RMA	WR	NSWC Corona:Corona, CA	9.954	-		-		-		-	Continuing	Continuing	Continuing
Subtotal			9.954	-		-		-		-			

Test and Evaluation (\$ 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
Development Test & Evaluation	WR	NWAS:China Lake, CA	-	-		1.150	Oct 2012	-		1.150	Continuing	Continuing	Continuing
Development Test & Evaluation (PHD)	WR	NSWC PHD:Port Hueneme, CA	74.294	6.517	Nov 2011	6.645	Oct 2012	-		6.645	Continuing	Continuing	Continuing
Development Test & Evaluation (DD)	WR	NSWC DD:Dahlgren, VA	5.760	0.205	Nov 2011	0.462	Oct 2012	-		0.462	Continuing	Continuing	Continuing
Development Test & Evaluation (SCSC-WI)	WR	SCSC-WI:Wallops Is, VA	39.772	5.944	Jan 2012	4.922	Oct 2012	-		4.922	Continuing	Continuing	Continuing
Development Test & Evaluation (JHU)	SS/FP	JHU/APL:Laurel, MD	15.122	1.100	Apr 2012	1.637	Nov 2012	-		1.637	Continuing	Continuing	Continuing
Development Test & Evaluation (Corona)	WR	NSWC Corona:Corona, CA	3.798	1.070	Jan 2012	1.061	Oct 2012	-		1.061	Continuing	Continuing	Continuing
Development Test & Evaluation (COTF)	WR	OPTEVFOR:Norfolk, VA	3.250	0.412	Feb 2012	0.310	Oct 2012	-		0.310	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604755N: <i>Ship Self Def (Detect & Cntrl)</i>	PROJECT 2178: <i>QRCC</i>
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Test and Evaluation (\$ 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
Development Test & Evaluation (5110)	SS/CPFF	RSC(5110):San Diego, CA	10.754	1.000	Nov 2011	0.562	Nov 2012	-		0.562	Continuing	Continuing	Continuing
Development Test & Evaluation (5466)	SS/CPFF	RSC(5432):Tucson, AZ	2.180	-		0.800	Nov 2012	-		0.800	Continuing	Continuing	Continuing
Development Test & Evaluation	SS/CPAF	RSC (5412):Portsmouth, RI	-	-		1.326	Nov 2012	-		1.326	Continuing	Continuing	Continuing
Development Test & Evaluation	SS/CPAF	RSC (5202):St. Pete, FL	-	-		0.900	Nov 2012	-		0.900	Continuing	Continuing	Continuing
Development Test & Evaluation (CDSA)	WR	CDSA DN:Dam Neck, VA	1.461	0.205	Nov 2011	0.786	Nov 2012	-		0.786	Continuing	Continuing	Continuing
Miscellaneous	Various	Various:Not Specified	5.546	-		-		-		-	Continuing	Continuing	Continuing
Subtotal			161.937	16.453		20.561		-		20.561			

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
Program Management Support	C/CPAF	Not Specified:Not Specified	19.856	1.803	Apr 2012	1.803	Nov 2012	-		1.803	Continuing	Continuing	Continuing
Subtotal			19.856	1.803		1.803		-		1.803			

Remarks
 Program Management Support accounts for three SEAPORT contracts, Alion (01D7013), NGIT (01D7026), and SAIC (04D4119), each funded less than 1.0M respectively, and therefore, account for the aggregate total specified for each fiscal year. These contracts provide services in the areas of financial management, configuration management, testing evaluation, and engineering support.

	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		642.184	64.360		81.106		-	81.106			

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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604755N: <i>Ship Self Def (Detect & Cntrl)</i>	PROJECT 2178: <i>QRCC</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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604755N: <i>Ship Self Def (Detect & Cntrl)</i>	PROJECT 2178: <i>QRCC</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2178				
SSDS MK 2 MOD 5C (LSD) - SYS ENG/DESIGN/CODE/APU/TEST	1	2011	2	2012
SSDS MK 2 MOD 5C (LSD) - FACTORY SYS INTEGRATION TEST (FSIT)	2	2012	3	2012
SSDS MK 2 MOD 5C (LSD) - FACTORY QUALIFICATION TEST (FQT)	3	2012	4	2012
SSDS MK 2 MOD 5C (LSD) - PRE&POST CERT SUPPORT	4	2012	4	2013
SSDS MK 2 MOD 5C (LSD) - T&E - SIT/ENG TEST/WSI2T AT WALLOPS	4	2011	4	2013
SSDS MK 2 MOD 5C (LSD) - T&E - LSD 50 DT/CSSQT	2	2015	3	2015
SSDS MK 2 MOD 5C (LSD) - T&E - LSD 52 DT/OT/CSSQT	3	2015	4	2015
SSDS MK2 MOD 6C - CVN 78 ACB12/TI12 - SYS ENG/SW/HW REQTS/DESIGN/CODE/APU/TEST	1	2011	1	2014
SSDS MK2 MOD 6C - CVN 78 ACB12/TI12 - SYS ENG/SW/HW REQTS/DESIGN/CODE/APU/TEST-HW PDR	2	2011	2	2011
SSDS MK2 MOD 6C - CVN 78 ACB12/TI12 - SYS ENG/SW/HW REQTS/DESIGN/CODE/APU/TEST-SSR 1	2	2011	2	2011
SSDS MK2 MOD 6C - CVN 78 ACB12/TI12 - SYS ENG/SW/HW REQTS/DESIGN/CODE/APU/TEST-HW CDR	2	2012	2	2012
SSDS MK2 MOD 6C - CVN 78 ACB12/TI12 - SYS ENG/SW/HW REQTS/DESIGN/CODE/APU/TEST-SW PDR 1	1	2012	1	2012
SSDS MK2 MOD 6C - CVN 78 ACB12/TI12 - SYS ENG/SW/HW REQTS/DESIGN/CODE/APU/TEST-SFR 2	2	2012	2	2012
SSDS MK2 MOD 6C - CVN 78 ACB12/TI12 - SYS ENG/SW/HW REQTS/DESIGN/CODE/APU/TEST-SSR 2	1	2013	1	2013
SSDS MK2 MOD 6C - CVN 78 ACB12/TI12 - SYS ENG/SW/HW REQTS/DESIGN/CODE/APU/TEST-SW CDR 1	3	2012	3	2012

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604755N: <i>Ship Self Def (Detect & Cntrl)</i>	PROJECT 2178: <i>QRCC</i>
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
SSDS MK2 MOD 6C - CVN 78 ACB12/TI12 - SYS ENG/SW/HW REQTS/DESIGN/ CODE/APU/TEST-SW PDR 2	1	2013	1	2013
SSDS MK2 MOD 6C - CVN 78 ACB12/TI12 - SYS ENG/SW/HW REQTS/DESIGN/ CODE/APU/TEST-SW CDR 2	2	2013	2	2013
SSDS MK2 MOD 6C - CVN 78 ACB12/TI12 - FACTORY SYS INTEGRATION TEST (FSIT 1)	2	2014	2	2014
SSDS MK2 MOD 6C - CVN 78 ACB12/TI12 - FACTORY QUALIFICATION TEST (FQT 1)	3	2014	3	2014
SSDS MK2 MOD 6C - CVN 78 ACB12/TI12 - PRE & POST CERT SUPPORT	3	2014	4	2017
SSDS MK2 MOD 6C - CVN 78 ACB12/TI12 - T&E -SIT/ENG TEST AT WALLOPS	4	2012	3	2014
SSDS MK2 MOD 6C - CVN 78 ACB12/TI12 - T&E - ET/DT/OA-III K AT WALLOPS	4	2014	4	2016
SSDS MK2 MOD 6C - CVN 78 ACB12/TI12 - T&E-DT/ENG TEST/WSI2T #1 AT WALLOPS	1	2015	2	2015
SSDS MK2 MOD 1C - CVN 68 ACB12/TI12 - FACTORY SYS INTEGRATION TEST (FSIT 2)	2	2015	2	2015
SSDS MK2 MOD 1C - CVN 68 ACB12/TI12 - FACTORY QUALIFICATION TEST (FQT 2)	3	2015	3	2015
SSDS MK2 MOD 6C - CVN 78 ACB12/TI12 - T&E-DT/ENG TEST/WSI2T #2 AT WALLOPS	1	2016	2	2016
SSDS MK2 MOD 6C - CVN 78 ACB12/TI12 - T&E-DT III K (ON CVN78)	1	2016	2	2016
Amphibious Ships SSDS MK2 ACB12/TI12 - FACTORY SYS INTEGRATION TEST (FSIT 3)	2	2016	2	2016
Amphibious Ships SSDS MK2 ACB12/TI12 - FACTORY QUALIFICATION TEST (FQT 3)	3	2016	3	2016
SDTS-SSDS MK 2 MOD 6C T&E-DT/OT ET 09	3	2016	2	2017
SSDS MK2 MOD 6C - CVN 78 ACB12/TI12 - T&E-DT III K ET 10/CSSQT (ON CVN78)	1	2017	1	2017
SSDS MK2 MOD 6C - CVN 78 ACB12/TI12 - T&E-DT/ENG TEST/WSI2T #3 AT WALLOPS	1	2017	3	2017

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604755N: <i>Ship Self Def (Detect & Cntrl)</i>	PROJECT 2178: <i>QRCC</i>
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
SSDS MK2 MOD 6C - CVN 78 ACB12/TI12 - T&E-DT/OT-III K / ET 10 (ON CVN78)	4	2017	4	2017
SSDS MK 2 MOD 1E-CVN/Amphib ACB16/TI16 -PLANNING /ANALYSIS	3	2011	4	2011
SSDS MK 2 MOD 1E-CVN/Amphib ACB16TI16 - SYS ENG/CS REQTS	1	2012	4	2012
SSDS MK 2 MOD 1E-CVN/Amphib ACB16TI16 - SSDS SW/HW REQTS	1	2013	4	2013
SSDS MK 2 P3I OACE MOD 1B 8.06 (CVN 75/71/76) T&E-SIT/ENG TEST/WSI2T AT WI	1	2011	4	2011
SSDS MK 2 P3I OACE MOD 2B 8.06 (LPD 20/24/25) T&E-SIT/ENG TEST/WSI2T AT WI	2	2011	4	2012
SSDS MK 2 P3I OACE MOD 4B 8.06 (LHA 6) T&E-SIT /ENT TEST/DT/WSI2T AT WI	4	2011	4	2013
SSDS MK 2 P3I OACE MOD 4B 8.06 (LHA 6) T&E-DT/OT-III I /ET06/ CSSQT	2	2015	3	2015
SDTS-SSDS MK 2 MOD 1B T&E-DT/OT ET 03	4	2011	4	2011
SDTS-SSDS MK 2 MOD 4B T&E-DT/OT ET 05 Phase 1	1	2013	2	2013
SDTS-SSDS MK 2 MOD 4B T&E-DT/OT ET 05 Phase 2	3	2015	3	2015

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604755N: <i>Ship Self Def (Detect & Cntrl)</i>	PROJECT 3172: <i>Joint Non-Lethal Weapons</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
3172: <i>Joint Non-Lethal Weapons</i>	8.064	1.334	5.379	-	5.379	10.906	5.134	2.657	2.676	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note
Funding for Integrated Swimmer Defense (ISD) moved to project 3306 starting in FY12.

A. Mission Description and Budget Item Justification

The scope of this project is to provide the fleet Expeditionary (specifically the Maritime Expeditionary Security Force) units with the capability of a portable maritime system to engage contacts of interest once they have been detected. Long Range Ocular Interruption (LROI) consists of efforts to develop and demonstrate a long range laser warning and dazzle system for use in maritime environment. The device is designed to issue clear and unambiguous optically dazzling warnings at long ranges (in excess of 1000m) to personnel, vehicles, vessels, (and potentially aircraft) approaching Navy, Coast Guard, or Army ships, ground assets, and critical maritime infrastructure.

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

	FY 2011	FY 2012	FY 2013
Title: Non-Lethal Weapons Development	2.064	0.409	3.979
Articles:	0	0	0
FY 2011 Accomplishments: Supported completion of Increment I CPD, Increment I MS C and Full-Rate Production (FRP development). Supported Analysis of Alternatives (AoA).			
FY 2012 Plans: Support program planning for technology investment resulting from the Analysis of Alternatives (AoA). Develop non-lethal, vessel-entanglement technologies to stop small and medium sized vessels in response to CENTCOM JUONS CC-0371. Effort will involve design and fabrication of launchers and payloads (i.e. nets used for entanglement of vessels' propellers).			
FY 2013 Plans: Support design refinement for the Long Range Ocular Interrupter (LROI) and other systems resulting from the Analysis of Alternatives (AoA).			
Title: Non-Lethal Weapons Testing	6.000	0.925	1.400
Articles:	0	0	0
FY 2011 Accomplishments:			

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604755N: <i>Ship Self Def (Detect & Cntrl)</i>	PROJECT 3172: <i>Joint Non-Lethal Weapons</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Completed update of User Operational Evaluation Systems (UOES)2 system to the first Increment I. Accomplished developmental testing. FY 2012 Plans: Complete development of Request For Proposal (RFP) package to support system production Post Milestone C. Also plan to test non-lethal, vessel-entanglement technologies on various representative vessels. FY 2013 Plans: Test Long Range Ocular Interrupter (LROI) components and other Non-lethal capabilities resulting from Analysis of Alternatives (AoA).			
Accomplishments/Planned Programs Subtotals	8.064	1.334	5.379

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPN/8128: <i>NCW Forces Active</i>	0.000	0.000	1.844	0.000	1.844	4.338	1.922	5.504	6.921	Continuing	Continuing

D. Acquisition Strategy

The acquisition strategy includes the assessment of mature technologies, strategies and potential system capabilities matched against identified capability gaps that can be used in a flexible response posture. Selected capabilities will be based on AoA and best material approach to meet expeditionary and afloat force protection requirements. Technology development will occur in FY12-13 culminating in an Engineering and Manufacturing Development (EMD) phase commencing in FY14. Successful capabilities will require cross-integration onto existing Navy platforms and ensure compatibility/interoperability within the expeditionary context. Multiple solutions could be output based on overall satisfaction of technical and operational requirements, acquisition life cycle costs, and forecasted procurement quantity needs.

Received \$3.5M via Omnibus ATR in late FY11. Funds are required to develop Naval Forces CENTCOM non-lethal technologies designed to stop small and medium sized vessels via entanglement of the propeller in response to JUONS CC-0371.

E. Performance Metrics

Complete material solution analysis and technical development strategy. Conduct Capability Development Document (CDD) process.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604755N: <i>Ship Self Def (Detect & Cntrl)</i>	PROJECT 3172: <i>Joint Non-Lethal Weapons</i>
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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
System Engineering	WR	NSWC Dahlgren:Dahlgren VA	5.956	0.500	Feb 2012	2.479	Feb 2013	-		2.479	Continuing	Continuing	Continuing
System Engineering	WR	NSWC Port Hueneme:Port Hueneme CA	0.400	0.254	Feb 2012	0.400	Feb 2013	-		0.400	Continuing	Continuing	Continuing
System Engineering	WR	NSWC Crane:Crane IN	0.400	0.180	Feb 2012	0.900	Feb 2013	-		0.900	Continuing	Continuing	Continuing
Subtotal			6.756	0.934		3.779		-		3.779			

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
Program Management	WR	NUWC Newport:Newport, RI	2.857	-		-		-		-	Continuing	Continuing	Continuing
Engineering Services (NSWC)	WR	NSWC Panama City:Panama City, FL	1.200	-		-		-		-	0.000	1.200	
Subtotal			4.057	-		-		-		-			

Test and Evaluation (\$ 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
Test and Evaluation	WR	NSWC Carderock:Bethesda MD	0.300	-		-		-		-	0.000	0.300	
Test and Evaluation	MIPR	Military Sealift Command:Washington DC	2.200	-		-		-		-	0.000	2.200	
Test and Evaluation	WR	COMOPTEVFOR:Norfolk VA	3.325	0.100	Feb 2012	1.000	Feb 2013	-		1.000	Continuing	Continuing	Continuing
Subtotal			5.825	0.100		1.000		-		1.000			

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604755N: <i>Ship Self Def (Detect & Cntrl)</i>	PROJECT 3172: <i>Joint Non-Lethal Weapons</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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604755N: <i>Ship Self Def (Detect & Cntrl)</i>	PROJECT 3172: <i>Joint Non-Lethal Weapons</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3172				
Acquisition Milestones: CDD	2	2013	2	2013
Acquisition Milestones: Milestone B	3	2013	3	2013
Acquisition Milestones: CPD	2	2016	2	2016
System Development: Technology Development	4	2011	4	2013
System Development: Expeditionary EDM Development	1	2014	4	2016
System Development: Ship EDM Development	3	2015	4	2016

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604755N: <i>Ship Self Def (Detect & Cntrl)</i>	PROJECT 3306: <i>Integrated Swimmer Defense (ISD)</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
3306: <i>Integrated Swimmer Defense (ISD)</i>	-	1.657	1.177	-	1.177	1.204	1.219	1.239	1.263	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

Funding moved from project 3172 starting in FY12.

A. Mission Description and Budget Item Justification

The scope of this project is to provide the fleet Expeditionary (specifically the Maritime Expeditionary Security Force) units with the capability of a portable maritime Integrated Swimmer Defense (ISD) system to engage combat swimmers/divers or unknown individuals underwater once they have been detected. The ISD program combines the detection and engagement operations in order to complete the swimmer defense picture for the fleet. The objective of the integrated swimmer defense system (ISD) is the development and deployment of an integrated system capable of being deployed by the expeditionary harbor security units (primarily the Maritime Expeditionary Security Force). ISD will be designed to detect, track, classify, warn, deter and neutralize divers' and swimmers' threats. ISD is important to protecting high value assets within harbors from the increasing threat of waterborne terrorist or combatant attacks.

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

	FY 2011	FY 2012	FY 2013
Title: Integrated Swimmer Defense	-	1.657	1.177
Articles:		0	0
FY 2012 Plans: Development of project documentation (CONOPS and CPD). Supports preparation for Milestone C decision.			
FY 2013 Plans: Continue development of project documentation (CONOPS and CPD). Implement additional development efforts for LRIP.			
Accomplishments/Planned Programs Subtotals	-	1.657	1.177

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

Line Item	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
• OPN/8128: <i>NCW Forces Active</i>	0.000	0.000	0.000	0.000	0.000	3.920	5.700	5.920	5.920	Continuing	Continuing

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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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604755N: <i>Ship Self Def (Detect & Cntrl)</i>	PROJECT 3306: <i>Integrated Swimmer Defense (ISD)</i>

D. Acquisition Strategy

The acquisition strategy includes the integration of swimmer/diver detection sensors and using software to fuse the sensor track data thereby creating an end to end combat system capability for swimmer/diver defense. The ISD program of record system configuration will be produced through an Acquisition Category (ACAT) program to procure component systems needed to bring the performance of the UOES prototypes up to the full production requirements.

E. Performance Metrics

User Operational Evaluation Systems (UOES) will culminate defined set of system capabilities and limitations. Define level specifications and technical data packages.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604755N: <i>Ship Self Def (Detect & Cntrl)</i>	PROJECT 3306: <i>Integrated Swimmer Defense (ISD)</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			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	Cost To Complete	Total Cost	
Hardware/Software Development	WR	NSWC:TBD	-	0.200	Feb 2012	0.300	Feb 2013	-		0.300	Continuing	Continuing	Continuing
Hardware/Software Development - FNC	WR	NUWC Newport:Newport RI	-	0.100	Feb 2012	-		-		-	Continuing	Continuing	Continuing
Hardware/Software Development - FNC Detection and Targeting	WR	NUWC Newport:Newport RI	-	0.125	Feb 2012	-		-		-	Continuing	Continuing	Continuing
Subtotal			-	0.425		0.300		-		0.300			

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			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	Cost To Complete	Total Cost	
Engineering Services	WR	NSWC:TBD	-	0.679	Feb 2012	0.295	Feb 2013	-		0.295	Continuing	Continuing	Continuing
Subtotal			-	0.679		0.295		-		0.295			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			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	Cost To Complete	Total Cost	
Test and Evaluation	WR	NSWC:TBD	-	0.290	Feb 2012	0.300	Feb 2013	-		0.300	Continuing	Continuing	Continuing
Subtotal			-	0.290		0.300		-		0.300			

Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			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	Cost To Complete	Total Cost	
Program Management	WR	NSWC:TBD	-	0.263	Feb 2012	0.282	Feb 2013	-		0.282	Continuing	Continuing	Continuing
Subtotal			-	0.263		0.282		-		0.282			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy							DATE: February 2012				
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>			R-1 ITEM NOMENCLATURE PE 0604755N: <i>Ship Self Def (Detect & Cntrl)</i>				PROJECT 3306: <i>Integrated Swimmer Defense (ISD)</i>				
	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	-	1.657		1.177		-		1.177			

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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604755N: <i>Ship Self Def (Detect & Cntrl)</i>	PROJECT 3306: <i>Integrated Swimmer Defense (ISD)</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 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604755N: <i>Ship Self Def (Detect & Cntrl)</i>	PROJECT 3306: <i>Integrated Swimmer Defense (ISD)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3306				
Acquisition Milestones: Increment I CPD	4	2011	4	2011
Acquisition Milestones: Increment I IOC	3	2013	3	2013
Acquisition Milestones: Increment I MS C/FRPDR	4	2012	4	2012
Acquisition Milestones: Increment I FOC	4	2015	4	2015
Acquisition Milestones: Increment I IOT&E	2	2013	2	2013
Test and Evaluation: Increment I EDM Testing	1	2011	3	2011
Program Phases: Increment 1 Production	3	2013	4	2015
Program Phases: Increment 1 Operations and Support	3	2013	4	2016