CLASSIFICATION:	UNCLASSIFIED						
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION						DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**			R-1 ITEM NOMENCLATURE **0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)**				
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Total PE Cost	34.564	44.854	35.459				
0166 / SPS Improvement Program	1.912	1.705	5.497				
2178 / QRCC	25.946	30.451	25.664				
3172 / Joint Non-Lethal Weapons	4.188	3.722	4.298				
9999 / Congressional Add	2.518	8.976	0.000				

A. MISSION DESCRIPTION:

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 is 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 are 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 response to the ASCM threat 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 (CDS) for those ships having a CDS. 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 to engage combat swimmer/divers or unknown individuals underwater once they have been detected. FY08 Congressional Adds: 9C23A - Expeditionary Swimmer Defense and 9C22A - Autonomous Unmanned Surface Vessel.

CLASSIFICATION:	UNCLASSIFIED	
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)		DATE May 2009
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	R-1 ITEM NOMENCLATURE **0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)**	

B. PROGRAM CHANGE SUMMARY:

Funding:	FY 2008	FY 2009	FY 2010
FY09 President's Budget	34.941	35.999	26.584
FY10 President's Budget	34.564	44.854	35.459
Total Adjustments	-0.377	8.855	8.875
(U) Summary of Adjustments			
Congressional Rescissions	0.000	0.000	0.000
Congressional Adjustments	0.000	8.878	0.000
SBIR/STTR/FTT Assessment	-0.337	0.000	0.000
Program Adjustments	0.000	0.000	9.294
Rate/Misc Adjustments	-0.040	-0.023	-0.419
Total	-0.377	8.855	8.875

CLASSIFICATION:	UNCLASSIFIED						
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)**				PROJECT NUMBER AND NAME **0166/SPS Improvement Program**		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	1.912	1.705	5.497				
RDT&E Articles Qty	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.

CLASSIFICATION:	UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION		DATE May 2009
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)**	PROJECT NUMBER AND NAME **0166/SPS Improvement Program**

B. ACCOMPLISHMENTS/PLANNED PROGRAM:

	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	1.912	1.705	5.497
RDT&E Articles Quantity	0	0	0

FY08/09 - Shipboard Protection System - System design, development, integrate, analyze and evaluate the SPS system.

FY10 - Shipboard Protection System - System design for other ship classes, integration with MK38 Mod 2 system.

C. OTHER PROGRAM FUNDING SUMMARY:

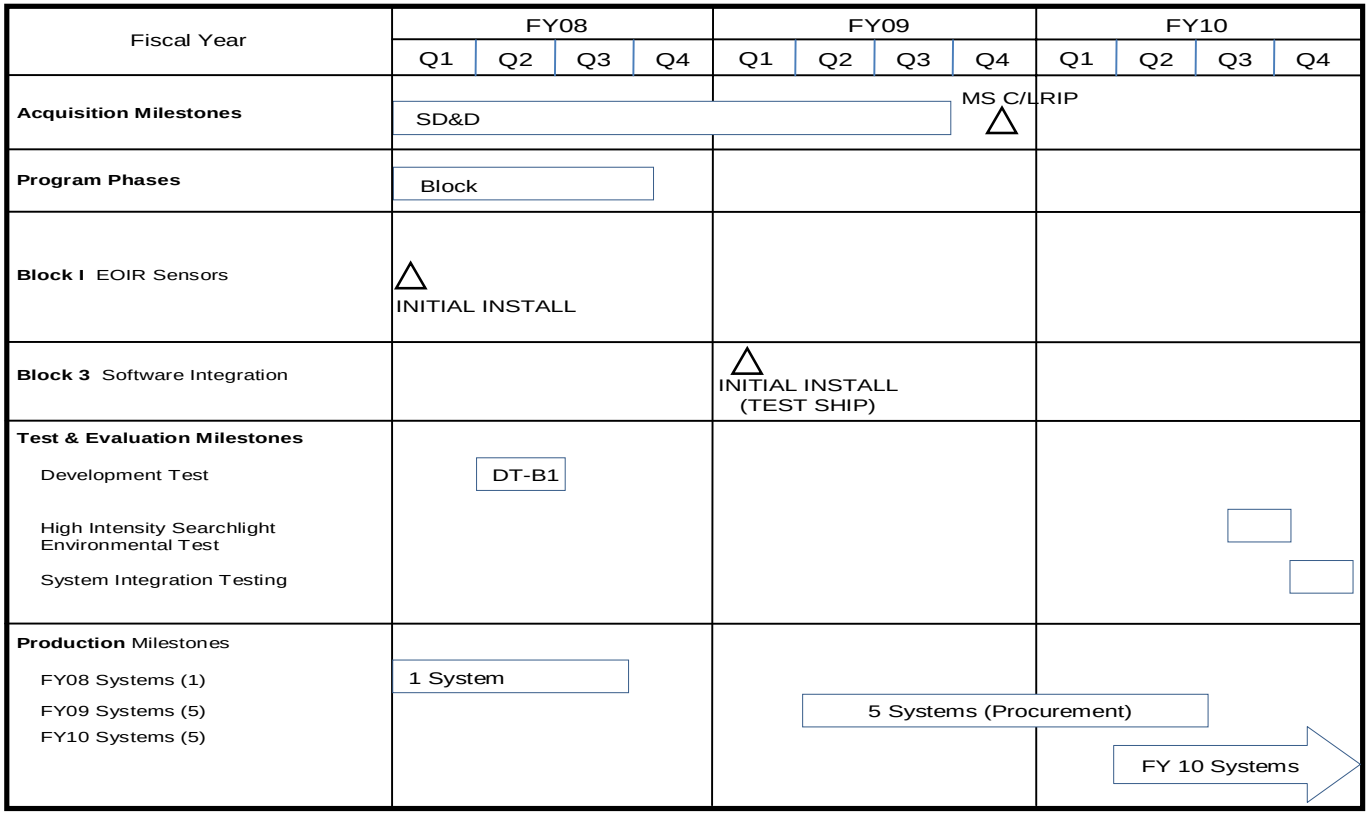
Line Item No. and Name	FY 2008	FY 2009	FY 2010
OPN LINE 812800 (SPS Program)	4.252	17.609	19.275

D. ACQUISITION STRATEGY:

Revised acquisition strategy is to provide capability to the fleet in blocks. (Block 1 - Enhanced Situational Awareness and Block 3 - Total System Integration including Lethal and Non-Lethal Engagement). All work is being led and performed by the Warfare Centers.

CLASSIFICATION:		UNCLASSIFIED								
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS							DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**		PROGRAM ELEMENT NUMBER AND NAME **0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)**			PROJECT NUMBER AND NAME **0166/SPS Improvement Program**					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost ($000)	FY 2009 Cost ($000)	FY 2009 Award Date	FY 2010 Cost ($000)	FY 2010 Award Date			
Hardware/Software Development	WR	NSWC Crane	1.100	0.277	NOV-08	1.000	NOV-09			
Hardware/Software Development	WR	NSWC Dahlgren	3.117	0.326	NOV-08	1.000	NOV-09			
Hardware/Software Development	FFP	NORTHROP GRUMMAN	0.236	0.000		0.000				
Hardware/Software Development	WR	NAVAIR/KDH	0.200	0.000		0.000				
Subtotal Product Development			**4.653**	**0.603**		**2.000**				
Remarks:										
Engineering Services	WR	NSWC CRANE	0.737	0.070	NOV-08	1.000	NOV-09			
Engineering Services	WR	NSWC DAHLGREN	0.358	0.098	NOV-08	1.000	NOV-09			
Engineering Services	XFER	IWS PERISCOPE DETECT	4.193	0.000		0.000				
ILS FUNCTIONS	WR	NSWC DAHLGREN	0.680	0.000		1.000	NOV-09			
Subtotal Support Costs			**5.968**	**0.168**		**3.000**				
Remarks:										
T&E FUNCTIONS	WR	COMOPTEVFOR	0.018	0.600	NOV-08	0.000				
T&E FUNCTIONS	WR	NSWC DAHLGREN	0.738	0.260	NOV-08	0.250	NOV-09			
T&E FUNCTIONS	WR	NSWC CRANE	0.440	0.000		0.247	NOV-09			
Subtotal Test and Evaluation			**1.196**	**0.860**		**0.497**				
Remarks:										
MANAGEMENT SUPPORT	VARIOUS	VARIOUS	0.250	0.049	NOV-08	0.000				
TRAVEL			0.143	0.025	NOV-08	0.000				
Subtotal Management Services			**0.393**	**0.074**		**0.000**				
Remarks:										
Total Cost			**12.210**	**1.705**		**5.497**				

CLASSIFICATION:	UNCLASSIFIED	
EXHIBIT R-4, SCHEDULE PROFILE		DATE May 2009
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)**	PROJECT NUMBER AND NAME **0166/SPS Improvement Program**



CLASSIFICATION:	UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)**			PROJECT NUMBER AND NAME **0166/SPS Improvement Program**			
Schedule Profile	FY 2008	FY 2009	FY 2010				
PCA		3RD QTR					
SD&D	1ST - 4TH QTR	1ST - 3RD QTR					
DT-B1	2ND QTR						
OT		3RD QTR					
MILESTONE C/FRP		4TH QTR					
IOC		4TH QTR					
DT-B3/B4		2ND - 4TH QTR					

CLASSIFICATION:	UNCLASSIFIED						
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)**				PROJECT NUMBER AND NAME **2178/QRCC**		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	25.946	30.451	25.664				
RDT&E Articles Qty	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 AN/UYQ-70 standard display and command table for human-system interface, commercially available local area network access units and circuit cards, 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 countermeasures system, Combat Identification, Friend or Foe-Self Defense (CIFF-SD), Rolling Airframe Missile 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 CV(N), 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 is in development and 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 also introduces new shipboard tactical displays and support equipment, and integrates advanced systems such as Evolved NATO Sea-sparrow missile system and SLQ-32 SEWIP.

In order to meet the Navy's warfighting capabilities and modernization concepts described in SEA POWER 21, Navy Open Architecture (NOA) is being introduced in conjunction with SSDS P3I COTS Tech Refresh. This is the first step in unifying a set of warfighting 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 warfighting systems. SSDS MK 2 would rehost existing tactical computer program applications to the Open Architecture Computing Environment (OACE) specifications/ equipment suite concurrent with P3I Commercial off the Shelf (COTS) Tech Refresh cycles,

prior to full migration and integration with other OA applications for implementation on future classes of ships. Tech Refresh cycles are driven by COTS obsolescence.

Follow on Operational Test and Evaluation of SSDS MK 2 has been conducted on the CVN Class and is being conducted on the LPD Class SSDS Combat Systems in FY07/08. Follow on Operational Test and Evaluation of the ESSM Integration with SSDS MK 2 is also being conducted on the CVN Class in FY08. Live Fire, Combat System end-to-end testing is being conducted on the Self Defense Test Ship in FY07/08. The SSDS MK 2 Self Defense Combat System is being tested on the Self Defense Test Ship against Anti Ship Cruise Missile threats in the LPD 17 and CVN/LHD Class configurations to support this effort. These tests will serve as a transition phase to the Ship Self Defense Capstone Air Warfare T&E Enterprise. Additional Self Defense Test Ship Live Fire tests against Anti Ship Cruise Missile threats are planned in FY10 in the CVN/ESSM and LHA 6 configurations, per the Ship Self Defense Capstone Air Warfare T&E Enterprise and DOT&E direction. Follow on Operational Test and Evaluation of SSDS Mk 2 will also be conducted on the LHD 7/8 in FY09 and CVN Class (P3I) COTS Tech Refresh in FY09. These tests will provide T&E data for the evaluation of the P3I COTS Tech Refresh Open Architecture Migration and Probability of Raid Annihilation (PRA) calculations.

CLASSIFICATION:	UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION		DATE May 2009
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)**	PROJECT NUMBER AND NAME **2178/QRCC**

B. ACCOMPLISHMENTS/PLANNED PROGRAM:

	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	12.946	16.451	12.174
RDT&E Articles Quantity	0	0	0

Prepare and conduct comprehensive Land Based combat system tests on SSDS MK 2 and SSDS MK 1 & SSDS MK2 P3I COTs Tech Refresh OACE(Open Architecture Computing Environment) configurations at Wallops Island for CVN, LPD 17, LHD 7/8, LHA 6 ship classes, including test preparation, integration, engineering and development tests, data collection and analysis, correction and verification of deficiencies in FY08 through FY10 in support of SSDS Combat System Certification, SSDS TEMP and Ship Self Defense Air Warfare Capstone Enterprise TEMP at-sea test events.

Prepare, conduct and analyze At-Sea combat system tests for SSDS MK2 in LPD 17 and live fire testing on the Self Defense Test Ship in FY08. Prepare, conduct and analyze At-Sea combat system tests in support of the Ship Self Defense Air Warfare Capstone Enterprise for the ESSM integration in FY08/09, SSDS MK 2 P3I COTs Tech Refresh OACE integration in FY09/10, SSDS MK2 LHD 7/8 configuration in FY08/09/10, LHA 6 configuration and LHA 6 live fire testing on the Self Defense Test Ship in FY10, CVN 78 live fire testing on Self Defense Test Ship, Design Agent test, analyze, and fix for the computer software program in support of testing and Operation of the Ship Self Defense Facility Wallops Island will also be accomplish to support the test events.

	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	13.000	14.000	13.490
RDT&E Articles Quantity	0	0	0

Conduct System Engineering, Design, Development, Software Rehost, Hardware/Software integration and Factory and Environmental Qualification testing of P3I COTs Tech Refresh for SSDS MK 1 and SSDS MK2 Tech Refresh cycles. The FY08 through FY10 Tech Refresh cycle for SSDS MK 1 and SSDS MK 2 upgrades to MOD 1C/2C/3C/5C configurations includes the OACE and the first major refresh of SSDS MK 1 (designated as MOD 5C) migration to OACE. After FQT/EQT completion, system will be delivered for Test and Evaluation. FY10 includes systems engineering for the integration of specific MH-60R Helicopter capabilities.

C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. and Name	FY 2008	FY 2009	FY 2010
OPN 5239 SSDS	29.032	46.549	34.079
PE 0603382N / 0324 (Advanced Combat System Technology)	7.307	4.329	1.677
PE 0603658N / 2039 (Cooperative Engagement Capibility (CEC))	31.060	38.212	56.586
PE 0604307N / 1447 (Aegis Surf Combatant Combat Sys Imp)	148.332	187.905	178.457
PE 0603582N / 0164 (Common Network Interface (CNI))	50.773	64.172	22.558

CLASSIFICATION:	UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)		DATE May 2009
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)**	PROJECT NUMBER AND NAME **2178/QRCC**

D. ACQUISITION STRATEGY:

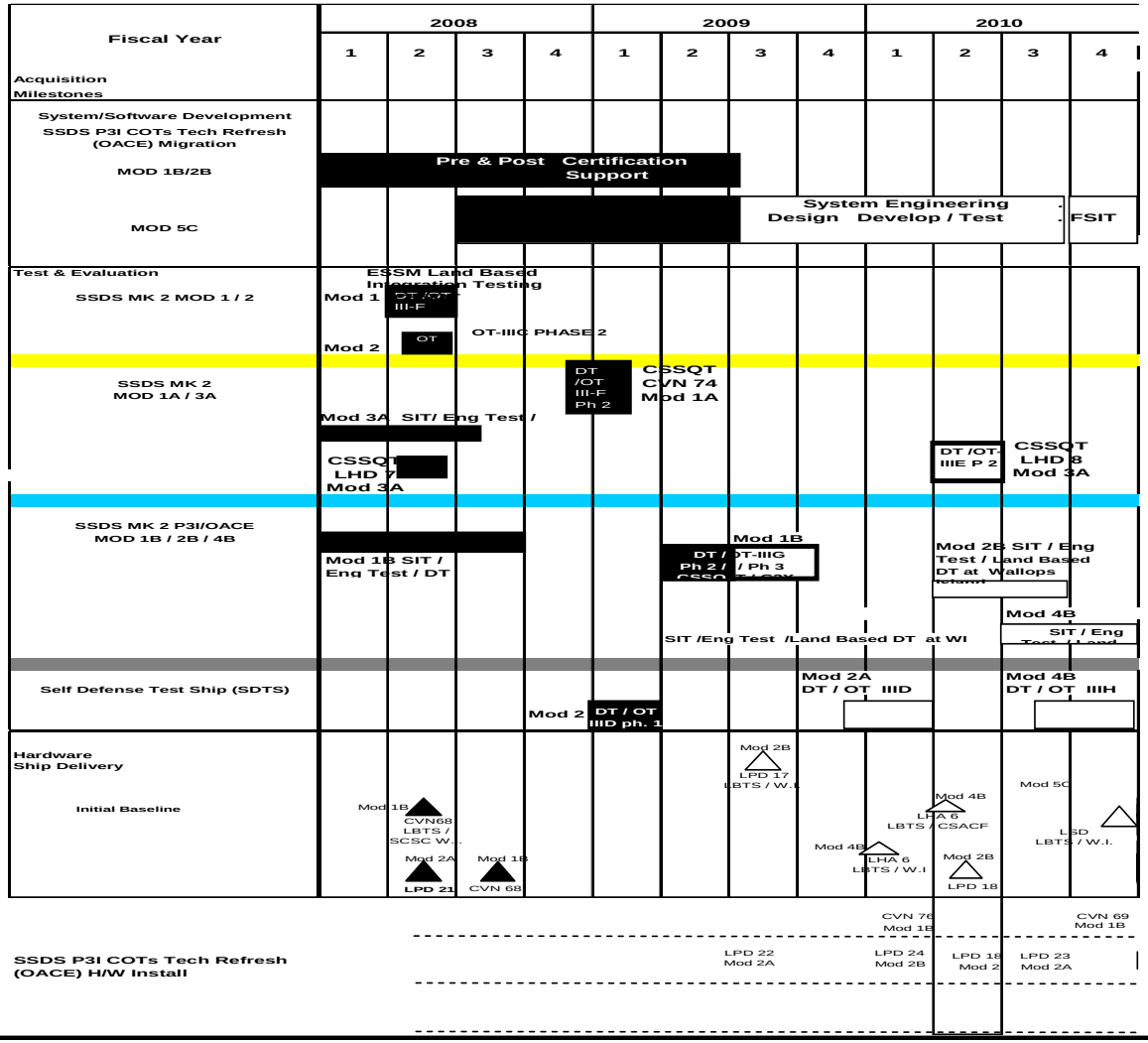
The first SSDS MK 2 system procurements took place under a Cost Plus Award Fee contract in FY99 for the CVN 76, LPD 17, LPD 18 and CVN 69. Follow-on procurements for additional ships of the CV(N), LPD and LHD classes are awarded on FFP contracts with the exception of those ships that will be receiving P3I COTS tech Refresh hardware suites, where the initial system Tech Refresh Development will occur under a CPFF type contract with ship COTS conversion equipment/kits procured on FFP contracts.

A new design agent and Life Cycle Maintenance CPFF contract was awarded in FY05 and a follow-on contract will be awarded in FY09, to support future SSDS MK 2 system/software maintenance and system upgrades including the P3I COTS Tech Refresh cycles.

CLASSIFICATION:		UNCLASSIFIED								
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS							DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**		PROGRAM ELEMENT NUMBER AND NAME **0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)**			PROJECT NUMBER AND NAME **2178/QRCC**					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost ($000)	FY 2009 Cost ($000)	FY 2009 Award Date	FY 2010 Cost ($000)	FY 2010 Award Date			
Systems Engineering	WR/WX	NSWC DD-Dalhgren, VA	42.231	1.052	OCT-08	0.900	OCT-09			
Systems Engineering	SS/FP	JHU/APL - Laurel MD	39.648	2.500	OCT-08	1.800	OCT-09			
Systems Engineering	WR/WX	NSWC PHD Pt Hueneme CA	18.903	0.000		0.000				
Systems Engineering	WR/WX	CDSA DN Dam Neck VA	10.681	0.950	OCT-08	0.800	OCT-09			
Systems Engineering	WR/WX	NSWC IH-Indian Head, MD	3.056	0.000		0.000				
Display Development Kits	SS/FP	Lockheed Martin St Paul MN	3.958	0.400	OCT-08	0.000				
Systems Eng/Dev/Integrate	SS/CPFF	RSC (5110) San Diego CA	19.437	8.397	OCT-08	7.402	OCT-09			
Systems Eng/Dev/Integrate	SS/CPFF	RSC (TBD) San Diego CA	0.000	0.000		0.000				
Systems Eng/Dev/Integrate	SS/CPAF	RSC (5132) San Diego CA	20.576	0.000		0.000				
Award Fees	SS/CPAF	RSC (5132) San Diego CA	3.603	0.000		0.000				
Systems Eng/Dev/Integrate	SS/CPAF	RSC (5108) San Diego CA	98.130	0.000		0.000				
Systems Eng/Dev/Integrate	SS/CPAF	RSC (5466) San Diego CA	20.353	0.000		0.000				
Systems Eng/Dev/Integrate	SS/CPFF	RSC (5104) San Diego CA	23.685	0.000		0.000				
Award Fees	SS/CPAF	RSC (5108) San Diego CA	11.208	0.000		0.000				
Award Fees	SS/CPAF	RSC (5466) San Diego CA	2.163	0.000		0.000				
RisK Reduction/EMD	Various	Various	76.366	0.000		0.000				
Misc.	Various	Various	2.806	0.000		1.050	OCT-09			
Subtotal Product Development			**396.804**	**13.299**		**11.952**				
Remarks:										
QA/RMA	WR/WX	NWAS Corona	9.954	0.000		0.000				
Subtotal Support Costs			**9.954**	**0.000**		**0.000**				
Remarks:										
Development Test & Evaluation	WR/WX	NSWC PHD Pt Hueneme CA	59.796	7.652	OCT-08	4.903	OCT-09			
Development Test & Evaluation	WR/WX	NSWC DD-Dalhgren, VA	4.733	0.270	OCT-08	0.195	OCT-09			
Development Test & Evaluation	WR/WX	NSWC DD-Wallops Is, VA	30.416	2.700	OCT-08	3.245	OCT-09			
Development Test & Evaluation	SS/FP	JHU/APL - Laurel MD	11.062	2.400	OCT-08	1.568	OCT-09			
Development Test & Evaluation	WR/WX	NSWC Corona - Corona, CA	1.388	0.235	OCT-08	0.620	OCT-09			

CLASSIFICATION:		UNCLASSIFIED								
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS							DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**		PROGRAM ELEMENT NUMBER AND NAME **0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)**			PROJECT NUMBER AND NAME **2178/QRCC**					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost ($000)	FY 2009 Cost ($000)	FY 2009 Award Date	FY 2010 Cost ($000)	FY 2010 Award Date			
Development Test & Evaluation	WR/WX	OPTEVFOR - Norfolk, VA	2.156	0.270	OCT-08	0.389	OCT-09			
Development Test & Evaluation	SS/CPFF	RSC(5110)-San Diego, CA	7.355	1.525	OCT-08	1.059	OCT-09			
Development Test & Evaluation	SS/CPFF	RSC(5466)-Tucson, AZ	2.180	0.000		0.000				
Development Test & Evaluation	WR/WX	CDSA DN Dam Neck VA	0.905	0.600	OCT-08	0.195	OCT-09			
Miscellaneous	Various	Various	5.546	0.000		0.000				
Subtotal Test and Evaluation			**125.537**	**15.652**		**12.174**				
Remarks:										
Program Management Support			15.795	1.500	OCT-08	1.538	OCT-09			
Subtotal Management Services			**15.795**	**1.500**		**1.538**				
Remarks:										
Total Cost			**548.090**	**30.451**		**25.664**				

CLASSIFICATION:	UNCLASSIFIED	
EXHIBIT R-4, SCHEDULE PROFILE		DATE May 2009
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)**	PROJECT NUMBER AND NAME **2178/QRCC**



CLASSIFICATION:	UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)**			PROJECT NUMBER AND NAME **2178/QRCC**			
Schedule Profile	FY 2008	FY 2009	FY 2010				
SSDS MK2 MOD 1 / MOD 2							
- SEA BASED DT / OT	1Q-2Q						
- CSSQT	2Q	1Q					
SSDS MK 2 MOD 1A / 3A							
- SYSTEM INTEGRATION / ENG TESTING	1Q-3Q						
- LAND BASED DT	1Q-3Q						
- SEA BASED DT / OT			1Q-2Q				
- CSSQT	2Q & 4Q		1Q				
SSDS MK1/MK2 MOD 1B/2B/4B TECH REFRESH DEV							
- PRE POST CERTIFICATION SUPPORT							
- SYSTEM INTEGRATION / ENG TESTING	1Q-3Q	1Q&3Q-4Q	1Q-3Q				
- LAND BASED DT			3Q-4Q				
- SEA BASED DT / OT		2Q-4Q	1Q-4Q				
- CSSQT		2Q					
SSDS MK1/MK2 MOD 1C/2C/3C/5C TECH REFRESH							
- SYSTEM ENGINEERING DESIGN/DEV/TEST	3Q-4Q	1Q-4Q					
- SRR		3Q					
- PDR		4Q					
- CRITICAL DESIGN REVIEW			1Q				
- FACTORY SYSTEM INTEGRATION TEST			1Q-3Q				
- FACTORY QUALIFICATION TEST			4Q				
SDTS							
- LAND BASED DT		2Q-4Q	1Q-2Q				
- SEA BASED DT / OT	4Q		3Q-4Q				

CLASSIFICATION:	UNCLASSIFIED						
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)**				PROJECT NUMBER AND NAME **3172/Joint Non-Lethal Weapons**		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	4.188	3.722	4.298				
RDT&E Articles Qty	0	0	0				

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 combatants' attacks.

CLASSIFICATION:	UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION		DATE May 2009
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)**	PROJECT NUMBER AND NAME **3172/Joint Non-Lethal Weapons**

B. ACCOMPLISHMENTS/PLANNED PROGRAM:

	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	3.721	2.719	1.300
RDT&E Articles Quantity	1	1	0

FY08/09 - Resources support the design, development, analysis, and evaluation of an expeditionary integrated swimmer defense capability. Utilizes an User Operational Evaluation System approach to refine requirements for transition to the ISD program of record.

FY10 - Supports incorporation of evaluation feedback into the supporting DODAF architecture of the ISD CPD. Supports preparation for the ISD Milestone C decision. These funds also initiate the transition development work from several Future Naval Capabilities (FNC) projects geared toward increment II of ISD.

	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.467	1.003	2.998
RDT&E Articles Quantity	0	0	0

FY08/09 - Supports the testing of swimmer detection and engagement technologies. These resources integrate the detection and engagement systems into a comprehensive capability and sustainment of the two UOES prototype systems.

FY10 - Resources facilitate the program management and acquisition support effort needed for the ISD capability to achieve Milestone C and its production decision. During this period the final selected swimmer engagement system will be tested/certified and the full ISD system Development Testing (DT), facilities testing, and Operational Testing (OT) will be conducted.

C. OTHER PROGRAM FUNDING SUMMARY:

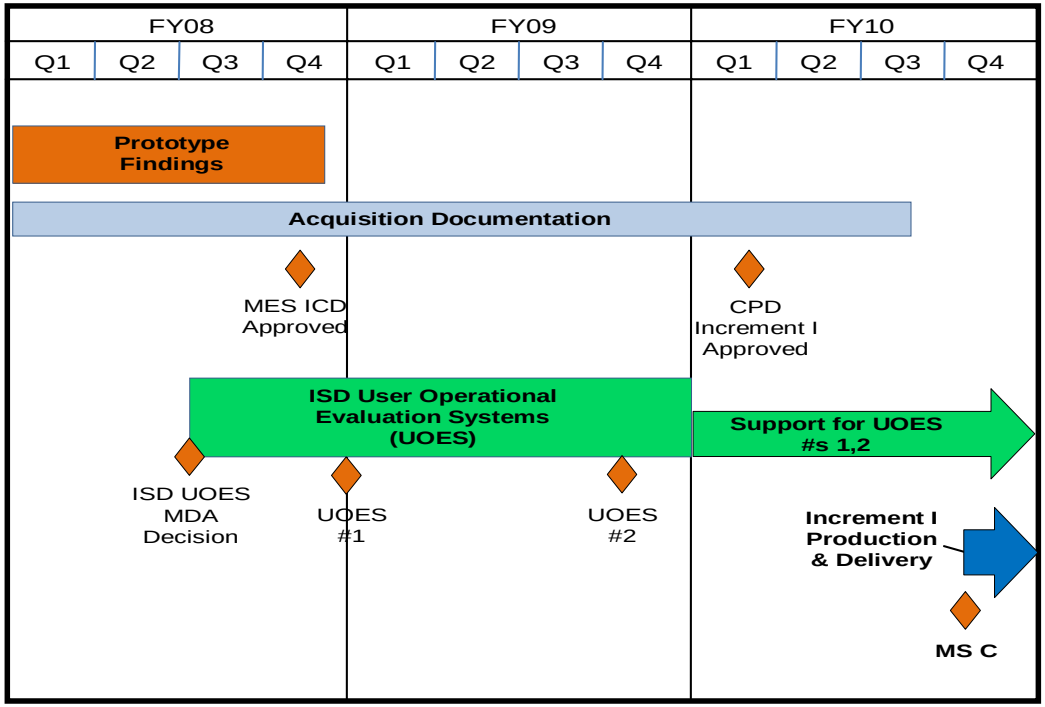
None

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. A Navy technical team will complete the concept refinement and technology development phase through the release of User Operational Evaluation Systems (UOES) and they will partner with industry for each UOES. In order to further refine the ISD requirements for a validated ISD Capability Production Document, two ISD User Operational Evaluation Systems (UOES) will be developed and evaluated. UOES 1 will be developed during FY-08 and will be delivered to designated MESF units in September 2008. A mature near production ready UOES 2 will be delivered in September 2009. The ISD program of record system configuration will be produced through an Acquisition Category (ACAT) program commencing in FY10 to procure component systems needed to bring the performance of the UOES prototypes up to the full production requirements.

CLASSIFICATION:		UNCLASSIFIED								
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS							DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**		PROGRAM ELEMENT NUMBER AND NAME **0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)**			PROJECT NUMBER AND NAME **3172/Joint Non-Lethal Weapons**					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost ($000)	FY 2009 Cost ($000)	FY 2009 Award Date	FY 2010 Cost ($000)	FY 2010 Award Date			
Hardware/Software Development - ISD	WR	NUWC Newport	1.628	2.450	FEB-09	0.500	FEB-10			
Hardware/Software Development - FNC Low Cost Swimmer Detection	WR	NUWC Newport	0.000	0.000		0.100	FEB-10			
Hardware/Software Development - FNC Terminal Swimmer Detection and Targeting	WR	NUWC Newport	0.000	0.000		0.050	FEB-10			
Subtotal Product Development			**1.628**	**2.450**		**0.650**				
Remarks: Resources utilized to produce the two ISD UOES prototypes. The ONR FNC Low Cost Swimmer Detection project will provide an active detection capability against underwater asymmetric threats to deployed naval forces and ships. There is the potential to augment the active detection capability with a passive fiber optic sensor that may have utility as a barrier and/or a means to support target ID. The ONR FNC Terminal Swimmer Detection and Targeting will provide a combat ID capability against underwater asymmetric threats to naval installations and forward deployed ships. Both of these FNC projects are prospective elements of the ISD increment II capability.										
Engineering Services	WR	NUWC Newport	0.828	0.807	FEB-09	0.598	FEB-10			
Engineering Services	WR	NSWC Panama City	1.200	0.000		0.000				
Subtotal Support Costs			**2.028**	**0.807**		**0.598**				
Remarks: Systems Engineering effort to design the baseline ISD capability.										
Test and Evaluation	WR	NUWC Newport	0.160	0.265	FEB-09	1.500	FEB-10			
Subtotal Test and Evaluation			**0.160**	**0.265**		**1.500**				
Remarks: Resources support developmental and operational testing as well as interoperability certification testing.										
Program Management	WR	NUWC Newport	0.200	0.200	FEB-09	1.550	FEB-10			
Program Management	WR	CECOM	0.172	0.000		0.000				
Subtotal Management Services			**0.372**	**0.200**		**1.550**				
Remarks:										
Total Cost			**4.188**	**3.722**		**4.298**				

CLASSIFICATION:	UNCLASSIFIED	
EXHIBIT R-4, SCHEDULE PROFILE		DATE May 2009
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)**	PROJECT NUMBER AND NAME **3172/Joint Non-Lethal Weapons**



CLASSIFICATION:	UNCLASSIFIED						
EXHIBIT R-4a, SCHEDULE DETAIL					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)**			PROJECT NUMBER AND NAME **3172/Joint Non-Lethal Weapons**			
Schedule Profile	FY 2008	FY 2009	FY 2010				
Increment I CR/TD Phase User Operational Eval Systems (UOES)	2ND QTR						
ISD INCREMENT I CPD			1ST QTR				
INCREMENT I - MS C			4TH QTR				
DT/OT			3RD QTR				
ISD INCREMENT I IOC							
ISD INCREMENT II CDD							
ISD INCREMENT II MS B SD&D							
INCREMENT II - MS C							
INCREMENT I FRP DR			4TH QTR				
INCREMENT II - IOC							

CLASSIFICATION:	UNCLASSIFIED		
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 5**	PROGRAM ELEMENT NUMBER AND NAME **0604755N/SHIP SELF DEFENSE (DETECT & CONTROL)**	PROJECT NUMBER AND NAME **9999/Congressional Add**	

B. ACCOMPLISHMENTS/PLANNED PROGRAM:

	FY 2008	FY 2009	FY 2010	
9C22A - Autonomous Unmanned Surface Vessel	0.968	1.197	0.000	
RDT&E Articles Quantity	0	0	0	

Autonomous Unmanned Surface Vessel (AUSV) supports the U.S. Navy's Anti-Terrorism Force Protection (ATFP) as well as Homeland Defense missions. The AUSV can protect commercial harbors, coastal facilities such as commercial and military airports and nuclear power plants, inland waterways and large lakes. The vessel will utilize a variety of advanced sensing and perimeter monitoring equipment for surveillance and detection of Targets of Interest (TI).

	FY 2008	FY 2009	FY 2010	
9C23A - Expeditionary Swimmer Defense	1.550	2.393	0.000	
RDT&E Articles Quantity	0	0	0	

Expeditionary Swimmer Defense Systems consists of an instrumented physical barrier that deters swimmers and divers from attempting to prohibited areas, and detects and localizes attempted intrusions.

	FY 2008	FY 2009	FY 2010	
9D90A - Persistent Surveillance Wave Power-Buoy System	0.000	2.993	0.000	
RDT&E Articles Quantity	0	0	0	

Persistent Surveillance Wave Power-Buoy System is to create a buoy platform that generates sustainable power sufficient to energize a variety of sensors and communications elements to enhance the littoral security mission (Littoral Power Buoy - LPB).

	FY 2008	FY 2009	FY 2010	
9D91A - Cyber Security	0.000	2.393	0.000	
RDT&E Articles Quantity	0	0	0	

Cyber Security is for development, procurement, and certification of Information Assurance systems as part of ACDS/SSDS upgrade kits to replace and/or augment the obsolescent equipment in CVN and