Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*				R-1 ITEM NOMENCLATURE PE 0603725N: *Facilities Improvement*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	9.715	3.746	3.754	-	3.754	3.792	3.882	3.962	4.032	Continuing	Continuing
0995: *Naval Facilities System*	1.664	1.784	1.772	-	1.772	1.793	1.838	1.876	1.909	Continuing	Continuing
3155: *Force Protection Ashore*	1.997	1.962	1.982	-	1.982	1.999	2.044	2.086	2.123	Continuing	Continuing
9999: *Congressional Adds*	6.054	-	-	-	-	-	-	-	-	0.000	6.054

A. Mission Description and Budget Item Justification

This program provides for capabilities to a) overcome performance limitations and reduce the life cycle cost of shore facilities, and b) provide protection against terrorist attacks for shore installations and their operations. The program focuses on technical and operational issues of specific Navy interest, where there are no unbiased test validated Commercial Off the Shelf (COTS) solutions available, and where timely capabilities may not materialize without specific demonstration or validation by the Navy. Additionally, the program completes the development of technologies originating from Navy, DOD and other sources of Science and Technology programs, including the National Science Foundation (NSF), the National Institute of Standards and Technology (NIST) and Department of Energy (DOE). Validated technologies are implemented in the Navy's Military Construction (MILCON) and Facilities, Sustainment Restoration and Modernization (FSRM) program, and Antiterrorism and Force Protection (ATFP) Other Procurement, Navy (OP,N) program.

Project 0995 addresses the following Navy facilities requirements during FY 2010 through FY 2016: Advance Technology for Waterfront Facilities Repair and Enhancements, Facilities Technologies to Reduce the Cost of Facilities Sustainment, Restoration and Modernization for reducing the total ownership cost (TOC) of future and existing Facilities. This project is consistent with recommendation of two National Academy of Sciences Reports: "The Role of Federal Agencies in Fostering New Technology and Innovation in Building" and "Federal Policies to Foster Innovation and Improvement in Constructed Facilities."

Started in FY2006 the Force Protection Ashore Project 3155 addresses selective topics in modeling, and material technologies to reduce the vulnerability of installations; and reduce the acquisition and operating costs of protective technologies. The demonstrations and validations provide the independent, technical and operational test data for the development of competitive performance specifications to acquire the required capabilities. The ATFP project is coordinated with other DOD programs.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0603725N: *Facilities Improvement*

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	10.039	3.746	3.820	-	3.820
Current President's Budget	9.715	3.746	3.754	-	3.754
Total Adjustments	-0.324	-	-0.066	-	-0.066
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.304	-			
• Section 219 Reprogramming	-0.021	-	-	-	-
• Rate/Misc Adjustments	-	-	-0.066	-	-0.066
• Congressional General Reductions Adjustments	0.001	-	-	-	-

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2010	FY 2011
Project: 9999: *Congressional Adds*		
Congressional Add: *Photovoltaic Rooftop Systems for Military Housing*	1.195	-
Congressional Add: *Permanent Magnet Linear Generator Power Buoy Syste*	1.912	-
Congressional Add: *Hydrokinetic Power Generator*	1.593	-
Congressional Add: *Regenerative Fule Cell Back-up Power*	1.354	-
Congressional Add Subtotals for Project: 9999	6.054	-
Congressional Add Totals for all Projects	6.054	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603725N: *Facilities Improvement*	PROJECT 0995: *Naval Facilities System*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
0995: *Naval Facilities System*	1.664	1.784	1.772	-	1.772	1.793	1.838	1.876	1.909	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This program provides the Navy with new engineering capabilities that are required to overcome specific performance limitations of Naval shore facilities while reducing the cost of sustaining the Naval shore infrastructure. The program focuses available RDT&E resources on satisfying facility requirements where the Navy is a major stakeholder or where there are no test validated Commercial Off the Shelf (COTS) solutions available, and a timely solution will not emerge without a Navy sponsored demonstration and validation. The program completes the development and validation of facility technologies originating in Navy science and technology programs, plus a variety of other sources which includes the National Science Foundation (NSF) and the National Institute of Standards and Technology (NIST). Validated technologies are implemented in the Navy's Military Construction (MILCON) and Facilities Sustainment Restoration and Modernization Programs (FSRP). Project 0995 is addressing three Navy facilities requirements: waterfront facilities repair and upgrade, technologies to reduce the cost of facilities, Sustainment, Restoration and Modernization (FSRM); and Modular Hybrid Pier.

Waterfront facilities repair and upgrade:
About 75% of the Navy's waterfront facilities are over 45 years old. They were designed for a service life of 25 years and to satisfy the mission requirements existing at that time. The over aged reinforced concrete requires costly and repetitive repairs. In addition, to accomplish more pier side ship maintenance and thus reduce dry dock costs, these piers must be strengthened to support concentrated crane loads up to 140 tons when piers were originally designed for no concentrated loads. At the time piers were designed to service one, possibly two particular ship classes, berthing flexibility is now limited by mooring and utility arrangements. This sub-project addresses new materials design methods, and retrofit methods to extend the service life of existing waterfront facilities by an additional 15 or more years. The project also addresses updating the mission based service, environmental, and protection loading requirements imposed by changes in platforms, operations and threats. Other initiatives include: enhanced facilities management processes, using building information modeling (BIM) technology and waterfront utilities service enhancements using models to achieve flexible berthing arrangements consistent with current and future platform mooring configurations and hotel service requirements. Using this new technology at a cost of $1-2M for repairs and upgrades per pier will result in $50M in cost avoidance for demolition and replacement.

Technologies to reduce the cost of FSRM:
SRM issues of high operational significance are addressed on a priority basis. The costs to correct these critical facility deficiencies are over $3.1B as reported in the FY 2000 Annual Inspection Summary (AIS). Current Navy FSRM funding levels are insufficient to prevent the continued growth of the backlog of mission and safety critical maintenance and repairs. This effort will demonstrate and validate the cost and reliability of advanced technologies in order to assure their acceptance and implementation in traditionally conservative public works and construction industries. The effort will accelerate the validation, commercialization, and wide-spread implementation of the facility technologies urgently required to reduce the cost of correcting the deficiencies in the Navy's FSRM backlog. Estimated returns on these investments are better than 60 to 1.

Modular Hybrid Pier (MHP):

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0603725N: *Facilities Improvement*	**PROJECT** 0995: *Naval Facilities System*

MHP started in FY2002. The Navy is faced with the necessity of recapitalizing a large portion of its waterfront infrastructure over the next several decades. The MHP initiative develops and validates innovative material and design technologies for a mission-flexible waterfront infrastructure characterized by significantly reducing total ownership cost and increasing mission flexibility. The MHP sub-project provides improved technology for new piers to include emerging innovative structural and materials technologies, particularly those that will transition from the Navy's applied research and advanced development program, providing enhanced-capabilities. Anticipated benefits include a less maintenance and repair costs and use of advanced materials and high performance lightweight concrete producing structures that have twice the economic service life of the conventional piers. Modular design will enable off-site fabrication in pre-cast plants that will shorten the duration of construction and lower the cost relative to conventional on-site demolition followed by on site/on base construction. Plant fabrication will vastly improve quality and result in repair-free durability because of superior performance concrete with post-tensioning technologies. The modular concept will facilitate change-out of components for modifications to increase capacity to adapt to future ship designs. Mobility due to barge configuration will enable relocatability of structural platform modules through flotation is a significant new capability option which will save money and provides new military worth/planning and deployment options. An economic analysis has shown that a modular hybrid (deployable) pier will have a Net Present Value (NPV) cost that is $15M less over its service life than that for a conventional pier constructed of ordinary reinforced concrete. The knowledge from this pier project will enable other concrete facility options that are fabricated offsite and relocatable for adjustment to basing changes. The technology of concrete and reinforcement and corrosion proofing will have wide spread applicability to all concrete construction. The 35% design package to include criteria, design drawings, cost estimate and mooring station design will be completed in FY2010. Remaining work includes seismic analysis and mooring station design for locations other than San Diego, CA, and transition into a MILCON budget exhibit 1391.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: Naval Facilities System	1.664	1.784	1.772
Articles:	0	0	0
FY 2010 Accomplishments: Waterfront Facilities Repair & Upgrade: Updated seismic design criteria for UFC 4-152-01 incorporated new analysis methods and developed and populated the first phase of an unclassified 3D ship model repository to improve fleet support. Facilities, Sustainment, Restoration & Modernization: Initiated field validation testing and performance monitoring of pavement installed in vertical take-off and landing (VTOL) pads for resistance to high temperature/erosion effects of engine exhaust of joint strike fighter (JSF), F-35B. [Transition from Enterprise and Platform Enabler (FNC-EPE), PE 0602236N]. Initiated demonstration and validation of the following Corrosion, Protection, and Control (CPC) projects: accelerated weathering of organic materials, electrochemical chloride extraction of reinforced concrete during repair of waterfront structures materials, and enhanced guidelines for marine concrete repairs. Completed sustainable engineering and maintenance study Phase 1 and began Phase 2. Sustainable study provided for input into design and construction criteria as well as best proactive documents. Assess cooling options for airframe maintenance in shore based hangars. Modular Hybrid Pier:			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603725N: *Facilities Improvement*	PROJECT 0995: *Naval Facilities System*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Completed 35% Design; cost estimate, mooring station design, and criteria to support MILCON budget exhibit 1391 for development. Also began seismic analysis and effects research.			
FY 2011 Plans: Waterfront Facilities Repair & Upgrade: Support and manage the advanced base mooring system small business innovative research (SBIR) project and the dry-dock seismic analysis standard procedure as a pilot for the analysis of 26 additional Navy dry-docks requiring analysis to meet requirements. Provide for the standardization, utilization and sustainment of facilities data sets from facility design to facility demolition consistent with Building Information Management (BIM) and Modeling processes and establish data interoperability with business processes in the Capital Improvements Business Line (CIBL) to ensure that efficiencies are realized. Facilities, Sustainment, Restoration & Modernization: Continue validation testing/performance monitoring of vertical take-off and landing (VTOL) pads for JSF (F-35B). Test and evaluate performance of alternative materials, and surfacing concepts and methods. Conduct field (validation) testing of high temperature resistant pavement joint sealants. Continue corrosion prevention and control projects and sustainability engineering and maintenance research. Evaluate possible solutions and develop associated design and construction criteria to support the transition of new technologies associated with weapons system introduction into the shore facilities infrastructure. Focus in this area is to address lowest Total Ownership Cost (TOC), sustainable operations and capturing best practice technologies to facilitate successful operations of the weapons platforms and existing infrastructures. Investigate solutions for contingency operations and post-disaster situations for Naval Installations with improved assessment, data collection, diagnostics and communications to assure faster and more efficient/effective response. Continue to leverage BIM best practices for reduction of TOC on shore infrastructure. Modular Hybrid Pier: Complete transition of MHP 35% technology design into MCON budget exhibit 1391 P-440 and complete mooring station design for multiple dynamic locations.			
FY 2012 Plans: Waterfront Facilities Repair & Upgrade: Continue support and manage the Advanced Base Mooring system SBIR project and the dry-dock seismic analysis standard procedure as a pilot for the analysis of 26 additional Navy dry-docks requiring analysis to meet NAVSEA requirements. Provide for the standardization, utilization and sustainment of facilities data sets from facility design to facility demolition consistent with Building Information Management and Modeling processes and establish data interoperability with business processes in the			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603725N: *Facilities Improvement*	PROJECT 0995: *Naval Facilities System*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
CIBL to ensure that efficiencies are realized between NAVFAC Business Lines in support of the Fleet, CNIC and other NAVFAC Supported Commanders. Facilities, Sustainment, Restoration & Modernization: Continue validation testing/performance monitoring of vertical take-off and landing (VTOL) pads for JSF (F-35B). Test and evaluate performance of alternative materials, and surfacing concepts and methods. Conduct field (validation) testing of high temperature resistant pavement joint sealants. Continue Corrosion Prevention & Control projects and Sustainability Engineering and Maintenance Research. Continue evaluation of solutions to develop associated design and construction criteria to support the transition of new technologies associated with weapons system introduction into the shore facilities infrastructure. Continue investigations into support for contingency operations and post-disaster situations with improved assessment, data collection, diagnostics and communications to assure faster and more efficient/effective response. Continue to leverage BIM best practices for reduction of TOC on shore infrastructure. Modular Hybrid Pier: Project complete in FY2011. No further funding to be applied.			
Accomplishments/Planned Programs Subtotals	1.664	1.784	1.772

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

The Projects identified in this budget have been carefully selected to respond to both the facilities support for new Weapons Systems Acquisition Category Programs and to address TOC considerations of an evolving and aging infrastructure. Each project has been assessed to ensure that it is addressing legitimate risks and requirements of the shore establishment. The results of these projects will be the development of design and construction criteria and or components that directly impact the shore facilities and the weapons systems supported.

E. Performance Metrics

Quarterly Program Reviews to include funds status, schedule review, assessment of plan to actual, and review of accomplishments and issues to date.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603725N: *Facilities Improvement*	PROJECT 0995: *Naval Facilities System*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Waterfront Facilities Repair & Upgrade	WR	NFESC:Pt Hueneme, CA	2.050	0.475	Mar 2011	0.441	Sep 2012	-		0.441	Continuing	Continuing	Continuing
Facilities, Sustainment, Restoration and Modernization Tech	WR	NFESC:Pt Hueneme, CA	4.889	1.184	Mar 2011	1.331	Sep 2012	-		1.331	Continuing	Continuing	Continuing
Modular Hybrid Pier (CA)	WR	NFESC:Pt Hueneme, CA	3.890	0.125	Mar 2011	-		-		-	0.000	4.015	
Modular Hybrid Pier (WA)	WR	BergerAbam:Seattle, WA	1.463	-		-		-		-	0.000	1.463	
		Subtotal	12.292	1.784		1.772		-		1.772			

Remarks

Remarks:

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	12.292	1.784		1.772		-		1.772			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0603725N: *Facilities Improvement*	**PROJECT** 0995: *Naval Facilities System*

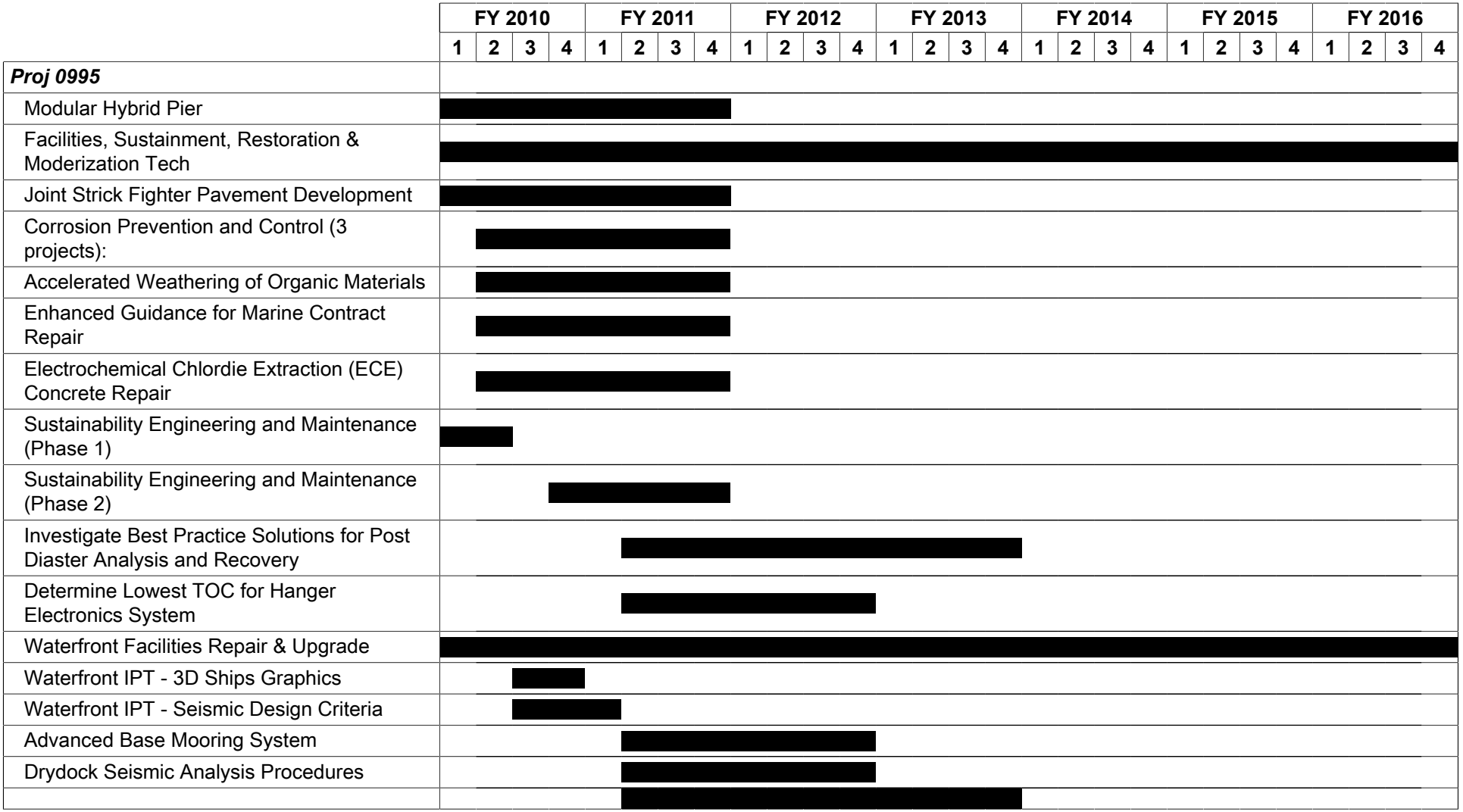

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603725N: *Facilities Improvement*	PROJECT 0995: *Naval Facilities System*

	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	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
Determine Reduction in TOC for Waterfront Facilities via Information Management Policies and Processes																												

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0603725N: *Facilities Improvement*	**PROJECT** 0995: *Naval Facilities System*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 0995				
Modular Hybrid Pier	1	2010	4	2011
Facilities, Sustainment, Restoration & Moderization Tech	1	2010	4	2016
Joint Strick Fighter Pavement Development	1	2010	4	2011
Corrosion Prevention and Control (3 projects):	2	2010	4	2011
Accelerated Weathering of Organic Materials	2	2010	4	2011
Enhanced Guidance for Marine Contract Repair	2	2010	4	2011
Electrochemical Chlordie Extraction (ECE) Concrete Repair	2	2010	4	2011
Sustainability Engineering and Maintenance (Phase 1)	1	2010	2	2010
Sustainability Engineering and Maintenance (Phase 2)	4	2010	4	2011
Investigate Best Practice Solutions for Post Diaster Analysis and Recovery	2	2011	4	2013
Determine Lowest TOC for Hanger Electronics System	2	2011	4	2012
Waterfront Facilities Repair & Upgrade	1	2010	4	2016
Waterfront IPT - 3D Ships Graphics	3	2010	4	2010
Waterfront IPT - Seismic Design Criteria	3	2010	1	2011
Advanced Base Mooring System	2	2011	4	2012
Drydock Seismic Analysis Procedures	2	2011	4	2012
Determine Reduction in TOC for Waterfront Facilities via Information Management Policies and Processes	2	2011	4	2013

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603725N: *Facilities Improvement*	PROJECT 3155: *Force Protection Ashore*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
3155: *Force Protection Ashore*	1.997	1.962	1.982	-	1.982	1.999	2.044	2.086	2.123	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Protection of the Navy Installations against terrorist activities requires development and deployment of advanced technology for force protection capabilities. This antiterrorism and force protection ashore project will develop, demonstrate and validate technologies for the following: access control and perimeter denial; waterside protection against craft and swimmer intrusion; secure and efficient operations centers and emergency centers (including human and information support systems); construction integrated surveillance sensors and robotic systems for intruder detection; material systems to improve utilities security and recovery; and material concepts. Program currently being evaluated are the inclement weather sensors for detecting intruders, intelligent video (VEW Maritime) in waterside security systems and over-the-water analytics, Command, Control, and Communication (C3) capabilities for emergency operations, and identifying and interdicting malevolent threats - watercraft, swimmers, divers, unmanned underwater vessels (UUVs) to reduce injury and death to the war fighter. Through demonstration and validation of risk modeling and simulation models, the potential of emerging technologies will be evaluated and installation security strategies that reduce manpower and other costs will be formulated. Installation protection concepts against attacks from the air will be identified and jointly demonstrated. These demonstrations and validations derive from advanced technology from science and technology programs of government academia and industry. The technology produces data for performance specifications for competitive procurement. All work will be coordinated with other programs and through industry forums as appropriate.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: Force Protection Ashore	1.997	1.962	1.982
Articles:	0	0	0
FY 2010 Accomplishments: Continued advanced prototype development and demonstrations for ATFP applications at naval installations as follows: - Completed the development and demonstration of inclement weather sensors for detecting intruders at installation perimeter. - Continued integration and evaluation of Intelligent Video (VEW Maritime) in waterside security systems. - Initiated integration of counter surveillance and malevolent intent detection capabilities in existing surveillance systems at Naval Installations. - Initiated demonstration and validation of identifying and interdicting malevolent waterside threats approaching Navy piers and ships. - Initiated advanced command, control, and communication (C3) capabilities for emergency operations and response at Naval Installations.			
FY 2011 Plans: Continue, complete, and initiate advanced prototype development and demonstrations as follows:			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603725N: *Facilities Improvement*	PROJECT 3155: *Force Protection Ashore*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
- Complete the demonstration and validation of inclement weather sensors for detecting intruders at installation perimeter and develop requirements for perimeter security procurements. - Complete the integration, demonstration, and validation of VEW Maritime over-the-water analytics into ATFP waterside security systems. - Continue integration and demonstration of counter surveillance and malevolent intent detection capabilities in existing surveillance systems at Naval Installations. - Continue demonstration and validation of identifying and interdicting malevolent threats - watercraft, swimmers, divers, unmanned underwater vessels (UUVs). - Continue advanced emergency operations C3 development and demonstration of mobile operators and interoperability for Joint Basing and Navy Installation locations. - Initiate automated assessment and course of action planning capability for sensor integration. ***FY 2012 Plans:*** Continue, complete, and initiate advanced prototype development and demonstrations as follows: - Complete demonstration and validation of counter surveillance and malevolent intent detection in existing ATFP surveillance systems, including WiFi integration. - Complete advanced C3 development and demonstration for mobile operators and system interoperability at ATFP installations. - Continue demonstration and validation of waterside identification and interdiction capabilities for swimmers, divers, and watercraft. - Continue advanced development and demonstration of automated assessment and COA generation for sensor integration. - Complete integration and demonstration of counter surveillance and malevolent intent detection capabilities in existing surveillance systems at Naval Installations.			
Accomplishments/Planned Programs Subtotals	1.997	1.962	1.982

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

Demonstration and validation is conducted for maximum transfer and interaction with industry such as to influence the industry COTS with the results of this demonstration and prototype validation. Acquisition is based on performance specifications enabled by this project.

E. Performance Metrics

Quarterly Program Reviews to include funds status, schedule review and assessment of plan to actual.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603725N: *Facilities Improvement*	PROJECT 3155: *Force Protection Ashore*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Force Protection Ashore (CA)	WR	NFESC:Pt Hueneme, CA	1.610	-		-		-		-	0.000	1.610	
Force Protection Ashore (Crane)	WR	NSWC Dahlgren:Panama City, Crane	2.581	-		-		-		-	0.000	2.581	
Force Protection Ashore (VA)	WR	ONR:Arlington, VA	0.300	-		-		-		-	0.000	0.300	
Waterside Intelligent: Operational Test & Evaluation	WR	SPAWAR:San Diego, CA	-	0.205	Nov 2010	-		-		-	Continuing	Continuing	Continuing
Waterside Intelligent Video: Percurement Specifiction	WR	SPAWAR:San Diego, CA	-	0.060	Nov 2010	-		-		-	Continuing	Continuing	Continuing
Waterbourne Vessel Microwave Interdiction: Technology Assessment	WR	SPAWAR:San Diego, CA	-	0.105	Oct 2010	-		-		-	Continuing	Continuing	Continuing
Waterbourne Vessel Michrowave Interdidtion: Concept of Employment	WR	SPAWAR:San Diego, CA	-	0.105	Oct 2010	-		-		-	Continuing	Continuing	Continuing
Waterbourne Vessel Michrowave Interdidtion: Spiral Development (LPN)	WR	SPAWAR:San Diego, CA	-	0.105	Oct 2010	0.216	Oct 2011	-		0.216	Continuing	Continuing	Continuing
Waterbourne Vessel Michrowave Interdidtion: Spiral Development (TF&I9)	WR	SPAWAR:San Diego, CA	-	0.105	Oct 2010	0.227	Oct 2011	-		0.227	Continuing	Continuing	Continuing
Joint Interoperability and Advanced Emergency Mobile Comm: Spiral Development (TF&I9)	WR	SPAWAR:San Diego, CA	-	0.205	Oct 2010	-		-		-	Continuing	Continuing	Continuing
Joint Interoperability and Advanced Emergency Mobile Comm: Deevelopmental Test & Evaluation	WR	SPAWAR:San Diego, CA	-	0.205	Oct 2010	-		-		-	Continuing	Continuing	Continuing
Joint Interoperability and Advanced Emergency Mobile Comm: Oerational Test & Evaluation	WR	SPAWAR:San Diego, CA	-	-		0.216	Oct 2011	-		0.216	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603725N: *Facilities Improvement*	PROJECT 3155: *Force Protection Ashore*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Swimmer/Divr Inerdiction: Technology Assessment	WR	SPAWAR:San Diego, CA	-	0.195	Oct 2010	-		-		-	Continuing	Continuing	Continuing
Swimmer/Divr Inerdiction: Concept of Employment	WR	SPAWAR:San Diego, CA	-	0.205	Oct 2010	-		-		-	Continuing	Continuing	Continuing
Swimmer/Divr Inerdiction: Spiral Development (LPN)	WR	SPAWAR:San Diego, CA	-	0.205	Oct 2010	-		-		-	Continuing	Continuing	Continuing
Swimmer/Divr Inerdiction: Spiral Development (TF&I9)	WR	SPAWAR:San Diego, CA	-	-		0.210	Oct 2011	-		0.210	Continuing	Continuing	Continuing
Swimmer/Divr Inerdiction: Developmental Test & Evaluation	WR	SPAWAR:San Diego, CA	-	-		0.227	Oct 2011	-		0.227	Continuing	Continuing	Continuing
Swimmer/Divr Inerdiction: Operational Test & Evaluation	WR	SPAWAR:San Diego, CA	-	-		0.227	Oct 2011	-		0.227	Continuing	Continuing	Continuing
Swimmer/Divr Inerdiction: Procurement Specification	WR	SPAWAR:San Diego, CA	-	-		0.085	Oct 2011	-		0.085	Continuing	Continuing	Continuing
Surveilance/Counter-Surveilance: Procurement Specification	WR	NSWC:Panama City, FL	-	-		0.050	Oct 2011	-		0.050	Continuing	Continuing	Continuing
Automated Sensor Assessment and Course of Action: Technology Assessment	WR	SPAWAR:San Diego, CA	-	0.105	Oct 2010	-		-		-	Continuing	Continuing	Continuing
Automated Sensor Assessment and Course of Action: Concept of Employment	WR	SPAWAR:San Diego, CA	-	0.105	Oct 2010	-		-		-	Continuing	Continuing	Continuing
Automated Sensor Assessment and Course of Action:Spiral Development (LPN)	WR	SPAWAR:San Diego, CA	-	-		0.227	Oct 2011	-		0.227	Continuing	Continuing	Continuing
Automated Sensor Assessment and Course of Action: Spiral Develpment (TF&I9)	WR	SPAWAR:San Diego, CA	-	-		0.217	Oct 2011	-		0.217	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603725N: *Facilities Improvement*	PROJECT 3155: *Force Protection Ashore*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Inclement Weather Sensor System (mid range IR):Procurement Specification	WR	NSWC:Panama City, FL	-	0.052	Nov 2010	-		-		-	Continuing	Continuing	Continuing
		Subtotal	4.491	1.962		1.902		-		1.902			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Waterbourne Vessel Microwave Interdiction: Government Engineering Suport	WR	SPAWAR:San Diego, CA	-	-		0.040	Oct 2011	-		0.040	0.000	0.040	
Joint Interoperability and Advanced Emergency Mobile Comm: Government Engineering Support	WR	SPAWAR:San Diego, CA	-	-		0.040	Oct 2011	-		0.040	0.000	0.040	
		Subtotal	-	-		0.080		-		0.080	0.000	0.080	

	Total Prior Years Cost	FY 2011 Cost	FY 2011	FY 2012 Base Cost	FY 2012 Base	FY 2012 OCO Cost	FY 2012 OCO	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	4.491	1.962		1.982		-		1.982			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0603725N: *Facilities Improvement*	**PROJECT** 3155: *Force Protection Ashore*

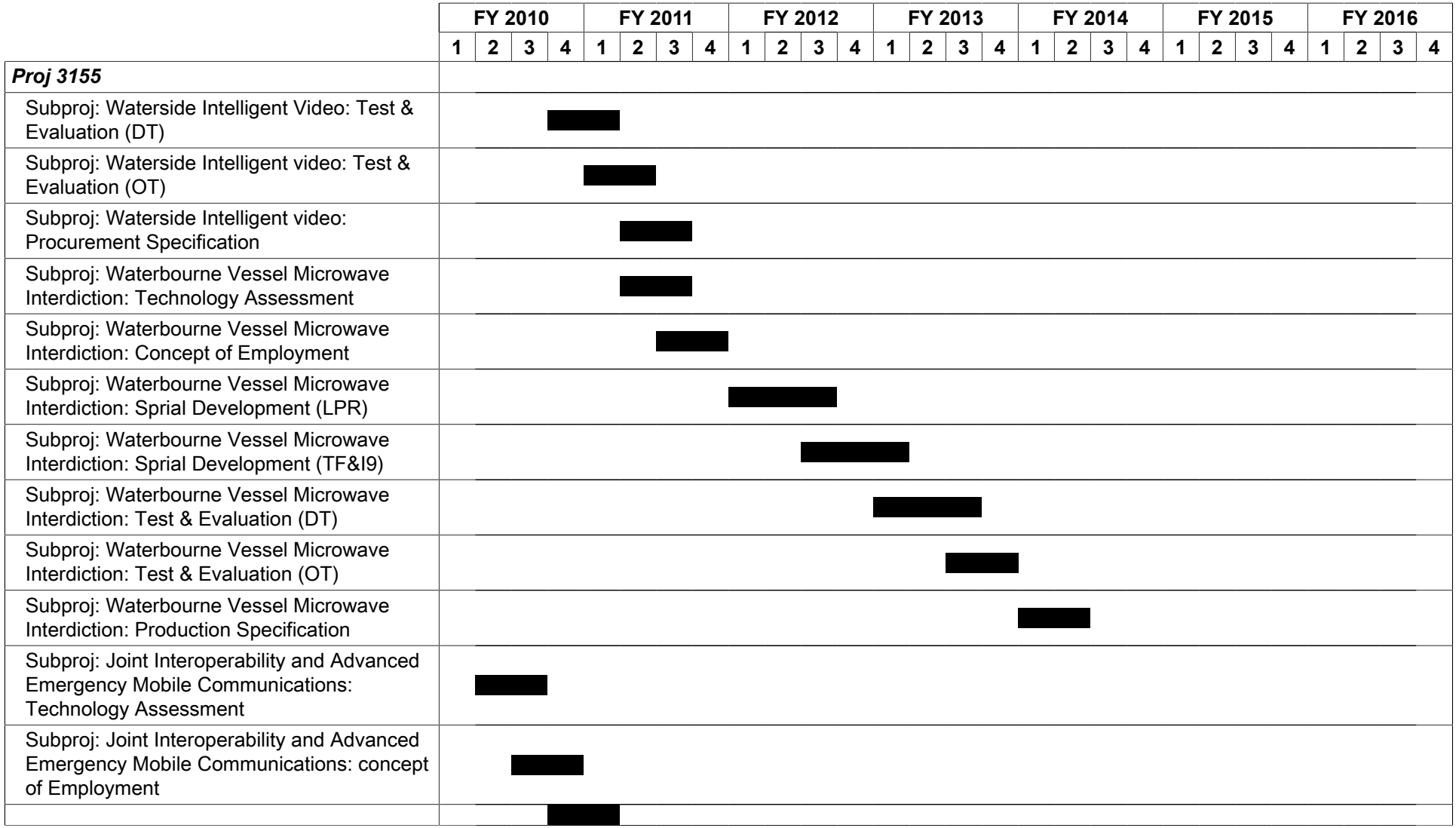

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603725N: *Facilities Improvement*	PROJECT 3155: *Force Protection Ashore*

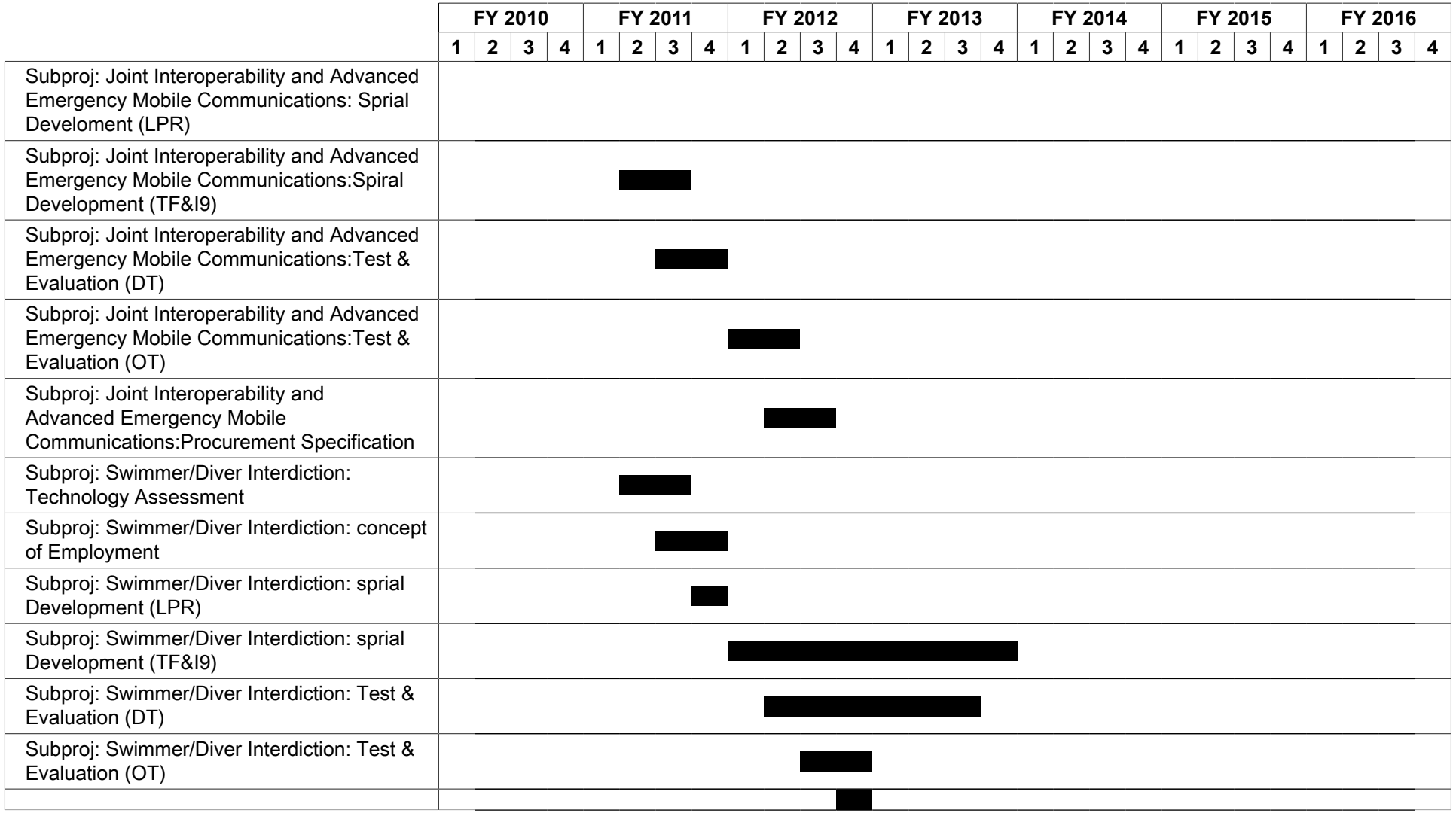

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0603725N: *Facilities Improvement*	**PROJECT** 3155: *Force Protection Ashore*

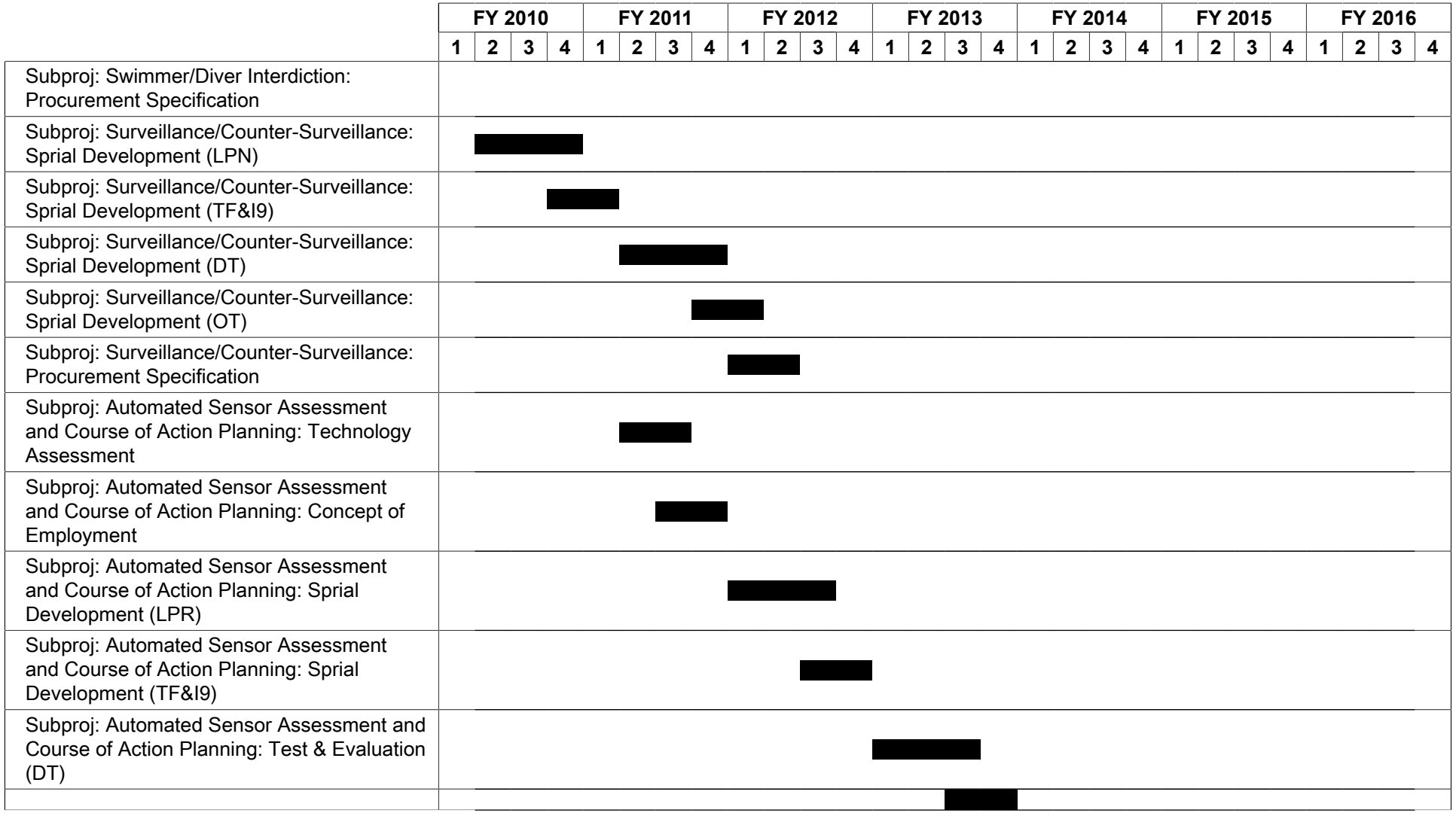

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603725N: *Facilities Improvement*	PROJECT 3155: *Force Protection Ashore*

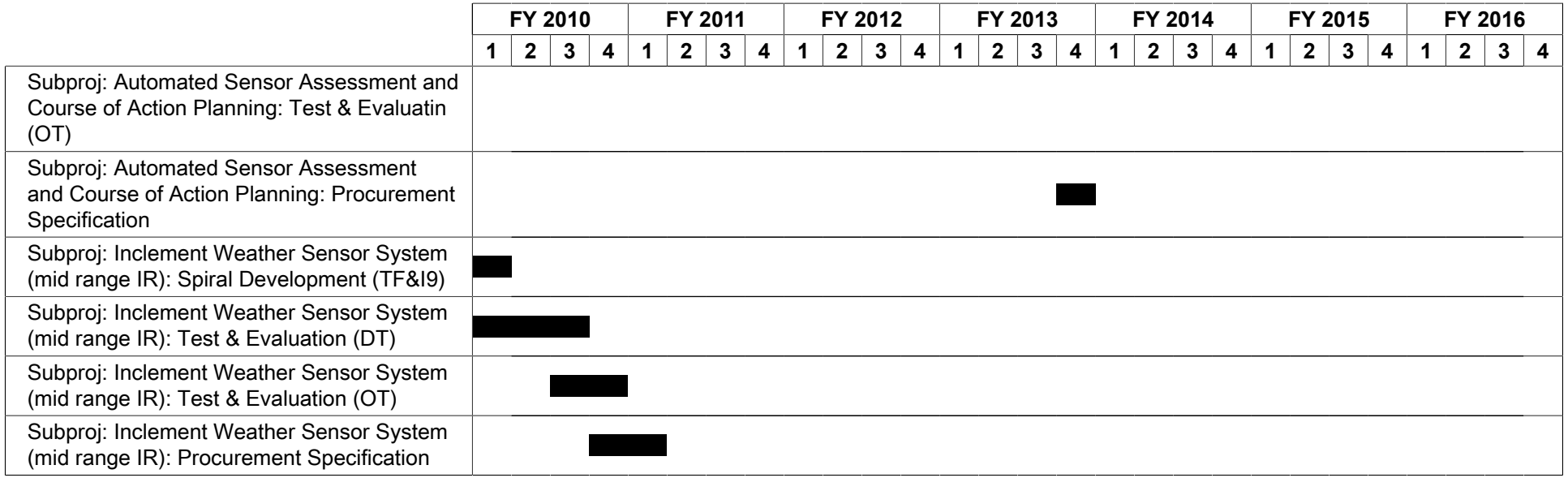

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603725N: *Facilities Improvement*	PROJECT 3155: *Force Protection Ashore*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3155				
Subproj: Waterside Intelligent Video: Test & Evaluation (DT)	4	2010	1	2011
Subproj: Waterside Intelligent video: Test & Evaluation (OT)	1	2011	2	2011
Subproj: Waterside Intelligent video: Procurement Specification	2	2011	3	2011
Subproj: Waterbourne Vessel Microwave Interdiction: Technology Assessment	2	2011	3	2011
Subproj: Waterbourne Vessel Microwave Interdiction: Concept of Employment	3	2011	4	2011
Subproj: Waterbourne Vessel Microwave Interdiction: Sprial Development (LPR)	1	2012	3	2012
Subproj: Waterbourne Vessel Microwave Interdiction: Sprial Development (TF&I9)	3	2012	1	2013
Subproj: Waterbourne Vessel Microwave Interdiction: Test & Evaluation (DT)	1	2013	3	2013
Subproj: Waterbourne Vessel Microwave Interdiction: Test & Evaluation (OT)	3	2013	4	2013
Subproj: Waterbourne Vessel Microwave Interdiction: Production Specification	1	2014	2	2014
Subproj: Joint Interoperability and Advanced Emergency Mobile Communications: Technology Assessment	2	2010	3	2010
Subproj: Joint Interoperability and Advanced Emergency Mobile Communications: concept of Employment	3	2010	4	2010
Subproj: Joint Interoperability and Advanced Emergency Mobile Communications: Sprial Develoment (LPR)	4	2010	1	2011
Subproj: Joint Interoperability and Advanced Emergency Mobile Communications:Spiral Development (TF&I9)	2	2011	3	2011
Subproj: Joint Interoperability and Advanced Emergency Mobile Communications:Test & Evaluation (DT)	3	2011	4	2011
Subproj: Joint Interoperability and Advanced Emergency Mobile Communications:Test & Evaluation (OT)	1	2012	2	2012
	2	2012	3	2012

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0603725N: *Facilities Improvement*	**PROJECT** 3155: *Force Protection Ashore*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Subproj: Joint Interoperability and Advanced Emergency Mobile Communications:Procurement Specification				
Subproj: Swimmer/Diver Interdiction: Technology Assessment	2	2011	3	2011
Subproj: Swimmer/Diver Interdiction: concept of Employment	3	2011	4	2011
Subproj: Swimmer/Diver Interdiction: sprial Development (LPR)	4	2011	4	2011
Subproj: Swimmer/Diver Interdiction: sprial Development (TF&I9)	1	2012	4	2013
Subproj: Swimmer/Diver Interdiction: Test & Evaluation (DT)	2	2012	3	2013
Subproj: Swimmer/Diver Interdiction: Test & Evaluation (OT)	3	2012	4	2012
Subproj: Swimmer/Diver Interdiction: Procurement Specification	4	2012	4	2012
Subproj: Surveillance/Counter-Surveillance: Sprial Development (LPN)	2	2010	4	2010
Subproj: Surveillance/Counter-Surveillance: Sprial Development (TF&I9)	4	2010	1	2011
Subproj: Surveillance/Counter-Surveillance: Sprial Development (DT)	2	2011	4	2011
Subproj: Surveillance/Counter-Surveillance: Sprial Development (OT)	4	2011	1	2012
Subproj: Surveillance/Counter-Surveillance: Procurement Specification	1	2012	2	2012
Subproj: Automated Sensor Assessment and Course of Action Planning: Technology Assessment	2	2011	3	2011
Subproj: Automated Sensor Assessment and Course of Action Planning: Concept of Employment	3	2011	4	2011
Subproj: Automated Sensor Assessment and Course of Action Planning: Sprial Development (LPR)	1	2012	3	2012
Subproj: Automated Sensor Assessment and Course of Action Planning: Sprial Development (TF&I9)	3	2012	4	2012
Subproj: Automated Sensor Assessment and Course of Action Planning: Test & Evaluation (DT)	1	2013	3	2013
Subproj: Automated Sensor Assessment and Course of Action Planning: Test & Evaluatin (OT)	3	2013	4	2013

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0603725N: *Facilities Improvement*	**PROJECT** 3155: *Force Protection Ashore*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Subproj: Automated Sensor Assessment and Course of Action Planning: Procurement Specification	4	2013	4	2013
Subproj: Inclement Weather Sensor System (mid range IR): Spiral Development (TF&I9)	1	2010	1	2010
Subproj: Inclement Weather Sensor System (mid range IR): Test & Evaluation (DT)	1	2010	3	2010
Subproj: Inclement Weather Sensor System (mid range IR): Test & Evaluation (OT)	3	2010	4	2010
Subproj: Inclement Weather Sensor System (mid range IR): Procurement Specification	4	2010	1	2011

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603725N: *Facilities Improvement*	PROJECT 9999: *Congressional Adds*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
9999: *Congressional Adds*	6.054	-	-	-	-	-	-	-	-	0.000	6.054
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Congressional Interest Items

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011
Congressional Add: Photovoltaic Rooftop Systems for Military Housing ***FY 2010 Accomplishments:*** New Congressional Add started in FY 2010 (funds received 3rd QTR): Funds have been issued ($125K) for background research on the state of the technology, research being pursued by industry and academia, and identifying Department of Navy needs to establish a statement of work to expend the balance of funds.	1.195	-
Congressional Add: Permanent Magnet Linear Generator Power Buoy Syste ***FY 2010 Accomplishments:*** The program will involve numerical and physical modeling to facilitate scaling the Phase I PMLG buoy design from 5kW to full capacity, estimated at between 100 kW and 250 kW. This effort will perform the remaining hydrodynamic modeling, identify the preferred direct drive rotary system, create a functional conceptual design, perform key experimental testing in Oregon State University wave and electric motor research laboratories, complete a preliminary design and design review, and establish the plan for a full scale design and build including cost and energy production estimates. These project and research steps are sequentially accomplished and are necessary to ensure a plan with flexibility and integrity toward identifying a cost effective and survivable wave energy conversion device. Through the sequential development of numerical modeling and experimental tests, the most feasible direct drive rotary power take-off system design concept will be identified. This will then become the subject of a preliminary full-scale design. The preliminary design will be used for system evaluation, energy production estimates, cost estimates, and a preliminary design review. This project will provide the information necessary for the determination of commercial feasibility before proceeding to a complete system design and full scale ocean testing.	1.912	-
Congressional Add: Hydrokinetic Power Generator ***FY 2010 Accomplishments:*** Conduct a technical, operational, environmental and business study to determine the feasibility of generating power at a suitable location in Puget Sound using the Kinetic Hydropower Turbine System, from which power can be transmitted to a local commercial power grid or to a naval base(s) grid.	1.593	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603725N: *Facilities Improvement*	PROJECT 9999: *Congressional Adds*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011
The study, including the explorations for data will address: 1) the presence of suitably strong tidal currents to generate electricity with the kinetic turbines; 2) proximity of such sites to ports and other infrastructure to facilitate cost effective construction and operational sustainment; 3) proximity to electrical power grids/interconnections for distribution; 4) adequate avoidance considerations for navigational channels. The study will conclusively identify all issues to enable effective discussions for agreements among Navy and Industry parties for the project continuation with design, fabrication, installation and demonstration of power generation, transmission, and cost effective power generation-grid operations and business activities to serve the Navy needs. Initiate critical design and tests of long lead components concurrently with the feasibility engineering and business study.		
Congressional Add: Regenerative Fule Cell Back-up Power ***FY 2010 Accomplishments:*** Investigate material issues, hydrogen storage issues, and improved fuel cells to allow and fabrication of a regenerative Proton Exchange Membrane (PEM) fuel power system suitable for tactical applications.	1.354	-
Congressional Adds Subtotals	6.054	-

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

Quarterly program reviews to include funds status, schedule review, assessment of plan to actual and review of accomplishments and issued to date.