Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*					R-1 Program Element (Number/Name) PE 0603725N *I Facilities Improvement*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	11.569	2.893	2.588	5.226	-	5.226	5.171	3.403	3.270	3.335	Continuing	Continuing
0995: *Naval Facilities System*	9.949	1.328	0.816	1.154	-	1.154	1.992	1.969	1.913	1.951	Continuing	Continuing
3155: *Force Protection Ashore*	1.620	1.565	1.286	0.575	-	0.575	1.183	1.434	1.357	1.384	Continuing	Continuing
3347: *Navy Expeditionary Energy Development*	0.000	-	0.486	3.497	-	3.497	1.996	-	-	-	-	5.979

A. Mission Description and Budget Item Justification

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 2014 through FY 2020: 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 and addressing natural and catastrophic risk of critical Naval Waterfront Facilities. This project is consistent with recommendations 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.

Project 3347: The Development of advanced Environmental Control Unit (ECU) for expeditionary force camp shelters project is a transition of a DOE FY12-14 funded project and is a continuation in technology development, and was transitioned to NAVFAC starting FY 2015.

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy					Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*			R-1 Program Element (Number/Name) PE 0603725N *I Facilities Improvement*		
B. Program Change Summary ($ in Millions)	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**
Previous President's Budget	3.019	2.588	5.754	-	5.754
Current President's Budget	2.893	2.588	5.226	-	5.226
Total Adjustments	-0.126	-	-0.528	-	-0.528
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.126	-			
• Rate/Misc Adjustments	-	-	-0.528	-	-0.528

Change Summary Explanation

The FY 2016 funding request was reduced by $0.5 million to account for the availability of prior year execution balances.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0603725N / *Facilities Improvement*				Project (Number/Name) 0995 / *Naval Facilities System*			
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
0995: *Naval Facilities System*	9.949	1.328	0.816	1.154	-	1.154	1.992	1.969	1.913	1.951	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

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 tested 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 (FSRM). The Duncan Hunter National Defense Authorization Act of 2009 laid down very specific guidelines for the correction of corrosion deficiencies in DoD shore facilities which is estimated to be $1.9B (DOD Annual Cost of Corrosion for the Department of Defense Facilities and Infrastructure July 2010).

Project 0995 addresses two Navy facilities requirements: 1) waterfront facilities repair, upgrade and service life extension; and, 2) validation testing/performance monitoring of critical facilities (such as dry docks, piers, runways, magazines, etc.), testing and evaluation of the performance of alternative materials, and surfacing concepts, and, methods and corrosion technologies to reduce the cost of Sustainment, Restoration and Modernization (SRM).

Waterfront facilities, repair, upgrade and service life extension:
An urgent requirement exists for early identification of strategies and solution recommendations for seismic risk at Naval Facilities, and especially nuclear capable waterfront facilities. Recent Pacific Rim earthquakes have heightened anxiety levels on perceived huge risks to Navy waterfront facilities in the region. The sub-project will provide analysis and solution recommendations for facilities impacted by seismic risk. 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 which was to satisfy the mission requirements existing at that time. The over aged reinforced concrete requires costly and repetitive repairs. Besides providing 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 not designed for concentrated loads. Piers were previously designed to service one or possibly two particular ship classes. Berthing flexibility is now limited by mooring and utility arrangements. This sub-project addresses new material design methods, and retrofit methods which extends 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: leveraging Building Information Modeling (BIM) technology to provide for enhanced facilities management processes and waterfront utilities service enhancements using models to achieve flexible berthing arrangements consistent with current and future platform mooring configurations and hotel service requirements including Facilities and Infrastructure Integrated Product Support for Acquisition Category (ACAT) Programs.

Technologies to reduce the cost of Sustainment, Restoration and Modernization (SRM):
Technologies to reduce the cost of SRM issues of high operational significance are addressed on a priority basis. The Navy portion of corrosion deficiencies at DoD shore facilities is estimated to be $433M (DOD Annual Cost of Corrosion for the Department of Defense Facilities and Infrastructure July 2010). This effort will

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603725N / *Facilities Improvement*	**Project (Number/Name)** 0995 / *Naval Facilities System*

demonstrate and validate the cost and reliability of advanced corrosion technologies in order to assure their acceptance and implementation in traditionally conservative public works and construction industries. These facility corrosion technologies will accelerate the validation commercialization, and wide-spread implementation required to reduce the cost of correcting, the deficiencies in the Navy SRM backlog. The sub-projects include the continuing effort to validate, test and conduct performance monitoring of enhanced facility designs and coatings for facilities and equipment.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Waterfront facilities, repair, upgrade and service life extension:	0.224	0.270	0.300	-	0.300
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Waterfront facilities, repair, upgrade and service life extension: Continued analysis and solution of CVN capable dry-dock and waterfront seismic analysis and standard seismic risk mitigation procedures. Continued synthetic line evaluation for ship fendering. Continued development of durable concrete repairs to waterfront structures. Continued development, validation and preparation of specifications for durable green concrete. Completed development of spot treatment protocol and transitioned via training and guidance. Completed assessment of corrosion for the floating double deck pier. ***FY 2015 Plans:*** Continue waterfront seismic analysis and standard seismic risk mitigation procedures for other dry docks and critical waterfront structures. Continue synthetic line evaluation for ship fendering. Complete development of durable green concrete and initiate transition criteria for integration into unified facilities criteria. Initiate identification and validation of operational and maintenance issues of waterfront facilities associated with supporting the Navy's new class of ships and submarines, including the Ohio Class Replacement Submarine. ***FY 2016 Base Plans:*** Plans are to complete waterfront seismic analysis and standard seismic risk mitigation procedures for a CVN/Ship in dry-dock. Continue to identify and validate operational and maintenance issues of waterfront facilities associated with supporting the Navy's new class of ships and submarines, including the Ohio Class Replacement Submarine. ***FY 2016 OCO Plans:*** N/A					
Title: Sustainment, Restoration & Modernization:	1.104	0.546	0.854	-	0.854
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Sustainment, Restoration & Modernization: Continue Corrosion Prevention & Control projects, emphasizing sustainable design and improved lifecycle cost reductions. Initiated high temperature pavement design mix					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603725N / *Facilities Improvement*	**Project (Number/Name)** 0995 / *Naval Facilities System*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
optimization to improve, cost, performance, and integration with other new aviation platforms such as the MV-22. Initiated seismic analysis of Earth Covered Magazines (ECM). Initiated blast test of reinforced concrete structure. Initiated planning and development for Modular Storage Magazine Locking Device System, Engineered coatings for fasteners, and Blast resistant connections for Magazines. ***FY 2015 Plans:*** FY15 funds will be used to continue projects from FY14 as follows: Continue Corrosion Prevention & Control projects, emphasizing sustainable design and improved lifecycle cost reductions. Continue high temperature pavement design mix optimization to improve cost, performance, and integration with other new aviation platforms such as the MV-22. Continue seismic analysis of Earth Covered Magazines (ECM). Complete testing of locking device System for Modular Storage Magazine. Continue improved concrete construction and crack repair technologies utilizing affordable and green aggregate constituents. ***FY 2016 Base Plans:*** The projects continued from FY15 are: Continue Corrosion Prevention & Control projects, emphasizing sustainable design and improved lifecycle cost reductions. Complete high temperature pavement design mix optimization to improve cost, performance, and integration with other new aviation platforms. Complete seismic analysis of Earth Covered Magazines (ECM). Continue Corrosion Prevention & Control projects, emphasizing sustainable design and improved lifecycle cost reductions. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	1.328	0.816	1.154	-	1.154

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The Projects identified in this budget have been carefully selected to respond to both the facilities support for new Acquisition Category Programs, to address TOC considerations of an evolving and aging infrastructure, and to facilitate rational risk based decisions and solutions to protect and decrease risk levels for Department of the Navy-critical infrastructure and facilities. 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.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603725N / *Facilities Improvement*	**Project (Number/Name)** 0995 / *Naval Facilities System*

E. Performance Metrics

Quarterly Program Reviews are conducted with the major performers to include funds status discussion, schedule review, assessment of plan to actual to meet benchmarks at midyear and end-of-year for PY1 and CY, and review of accomplishments and issues to date.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603725N / *Facilities Improvement*	**Project (Number/Name)** 0995 / *Naval Facilities System*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Continue Waterfront Facilities, Repair, Upgrade and Services Life Extension	Various	NAVFAC EXWC : Pt Hueneme, CA	1.988	0.224	Dec 2013	0.270	Dec 2014	0.300	Dec 2015	-		0.300	Continuing	Continuing	Continuing
Continue Sustainment, Restoration and Modernization	Various	NAVFAC EXWC : Pt Hueneme, CA	2.483	1.104	Dec 2013	0.546	Dec 2014	0.854	Dec 2015	-		0.854	Continuing	Continuing	Continuing
Modular Hybrid Pier	WR	NAVFAC EXWC : Pt Hueneme, CA	5.478	-		-		-		-		-	-	5.478	-
		Subtotal	9.949	1.328		0.816		1.154		-		1.154	-	-	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	9.949	1.328		0.816		1.154		-		1.154	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603725N / *Facilities Improvement*	**Project (Number/Name)** 0995 / *Naval Facilities System*

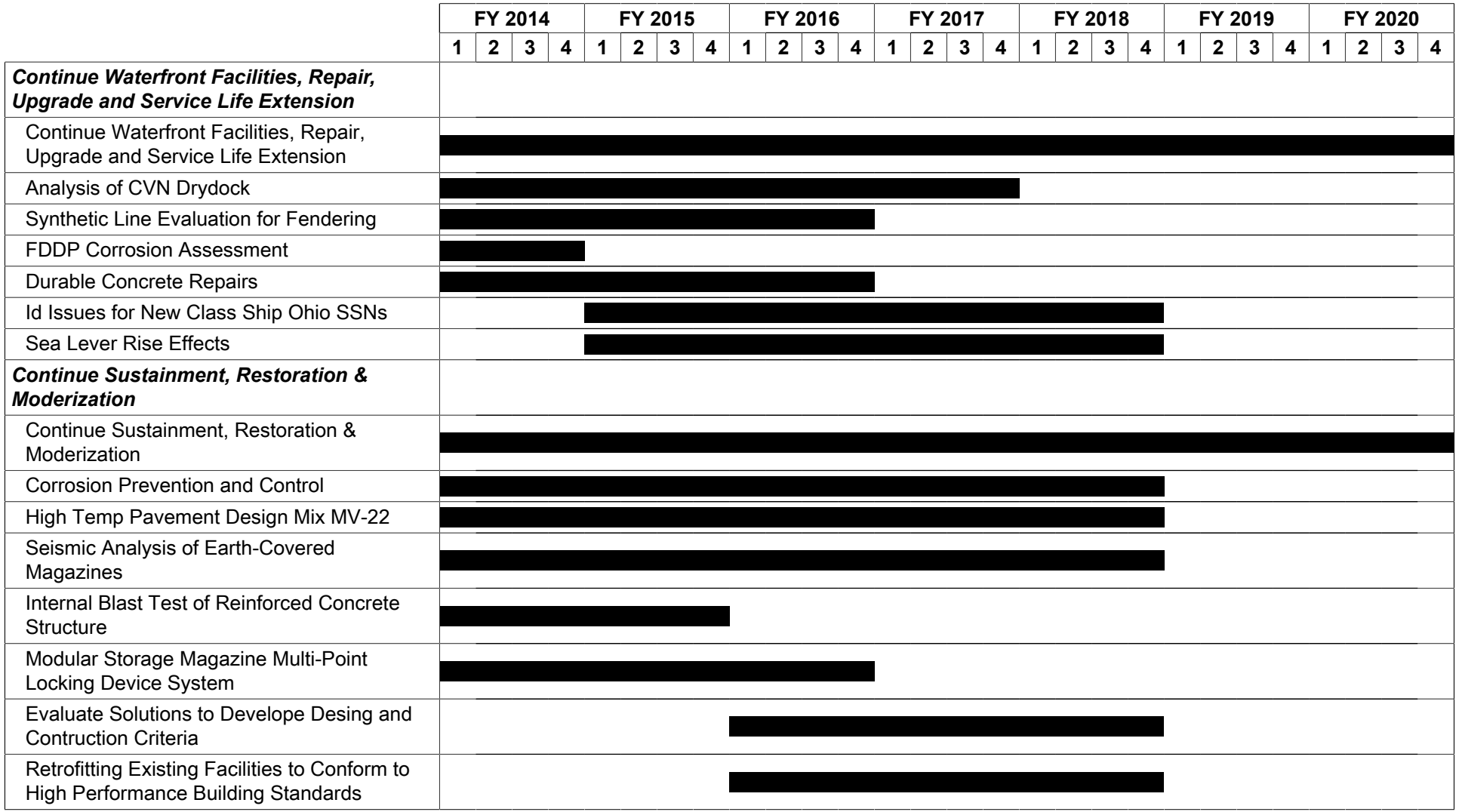

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603725N / *Facilities Improvement*	**Project (Number/Name)** 0995 / *Naval Facilities System*

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Develope Design Criteria for Closed Piers and Wharves									[redacted]																			

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603725N / *Facilities Improvement*	**Project (Number/Name)** 0995 / *Naval Facilities System*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Continue Waterfront Facilities, Repair, Upgrade and Service Life Extension				
Continue Waterfront Facilities, Repair, Upgrade and Service Life Extension	1	2014	4	2020
Analysis of CVN Drydock	1	2014	4	2017
Synthetic Line Evaluation for Fendering	1	2014	4	2016
FDDP Corrosion Assessment	1	2014	4	2014
Durable Concrete Repairs	1	2014	4	2016
Id Issues for New Class Ship Ohio SSNs	1	2015	4	2018
Sea Lever Rise Effects	1	2015	4	2018
Continue Sustainment, Restoration & Moderization				
Continue Sustainment, Restoration & Moderization	1	2014	4	2020
Corrosion Prevention and Control	1	2014	4	2018
High Temp Pavement Design Mix MV-22	1	2014	4	2018
Seismic Analysis of Earth-Covered Magazines	1	2014	4	2018
Internal Blast Test of Reinforced Concrete Structure	1	2014	4	2015
Modular Storage Magazine Multi-Point Locking Device System	1	2014	4	2016
Evaluate Solutions to Develope Desing and Contruction Criteria	1	2016	4	2018
Retrofitting Existing Facilities to Conform to High Performance Building Standards	1	2016	4	2018
Develope Design Criteria for Closed Piers and Wharves	1	2016	4	2018

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0603725N / *Facilities Improvement*				Project (Number/Name) 3155 / *Force Protection Ashore*			
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
3155: *Force Protection Ashore*	1.620	1.565	1.286	0.575	-	0.575	1.183	1.434	1.357	1.384	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Protection of Navy Installations against terrorist activities requires deployment of advanced technology for force protection capabilities. This antiterrorism and force protection (AT/FP) ashore project will develop, demonstrate and validate technologies for the following: access control and integrated perimeter security surveillance sensors and intelligent electronic security systems for automated intruder detection (Installation Protection); perimeter security; waterside protection against craft and swimmer intrusion; secure and efficient operations centers and emergency management centers including human and information support systems (Command and Control). Programs currently being evaluated are standard-based enterprise physical security system integration and automation; Command, Control, and Communications (C3) capabilities for emergency operations; integrated and networked mass notification systems (MNS); Waterside intelligent video security systems; integrated over-the-water sensors and analytics for automated course of action planning; identifying and interdicting malevolent threats - watercraft, swimmers, divers, and unmanned underwater vessels (UUVs) to reduce injury and death to the war fighter and damage to high value units (HVUs). 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. These demonstrations and validations derive advanced technology from science and technology programs of government academia and industry. The technology evaluation and validation produces data for performance specifications used 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 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**
Title: Force Protection Ashore	1.565	1.286	0.575	-	0.575
Articles:	-	-	-	-	-
FY 2014 Accomplishments:					
- Continued Integrated PS/AC Automation project with the Regional Dispatch Center (RDC) to include developmental test and evaluation (DT)					
- Continued integration and demonstration of Automated Sensor Assessment and Course of Action Planning (COAP) (OT) with EHSS.					
- Completed integration and validation of advanced beyond swimmers and diver detection, tracking, and interdiction capabilities into EHSS.					
- Completed Net-centric Mass Notification System specification development for transition.					
- Initiated Waterside Protection - Boat Barrier Electronic Infrastructure project to assess impact of next generation boat barriers on existing Electronic Harbor Security System (EHSS) sensors and research, identify,					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603725N / *Facilities Improvement*	**Project (Number/Name)** 3155 / *Force Protection Ashore*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
integrate, implement and evaluate mitigation sensors and sensor infrastructure to augment performance in the presence of shadow zones caused by the new barriers. ***FY 2015 Plans:*** - Complete integration and demonstration of Automated Sensor Assessment and Course of Action Plan (COAP) with EHSS and document baseline specifications. - Developmental Test & Evaluation (DT) - Continue Boat Barrier Electronic Infrastructure project with a particular focus on environmental resilience and sustainability in an operational setting and integrated with existing Port Security Barriers and remote gate operations devices. - Spiral Development - Initiate Waterside Protection - Boat Barrier Electronic Infrastructure project to assess impact of next generation boat barriers on existing Electronic Harbor Security System (EHSS) sensors and research, identify, integrate, implement and evaluate mitigation sensors and sensor infrastructure to augment performance in the presence of shadow zones caused by the new barriers. (Spiral Development) - Initiate ship-to-shore common information exchange project to rapidly share information and communications between shore security forces and docked ships. (Spiral Development) - Initiate versatile access control project to develop, integrate and test an access control system that is open architecture, enables biometrics and handles multiple credentials (driver's license, passport, etc.). (Spiral Development) - Complete PS/AC automation project with an operational evaluation in NSW (OT). ***FY 2016 Base Plans:*** Funds will support continue and initiated projects from FY14 and FY15 as follows: - Continue ship-to-shore common information exchange project, focusing on integration of a prototype system with a representative EHSS installation and testing in a controlled test environment. - [$125K] - Developmental Test & Evaluation (DT); SSC-PAC - Continue versatile access control project to integrate and test an enhanced access control approach, leveraging multiple credential types, biometrics and enhancing the detection of vehicles and personnel in and around an Access Control Point. - [$100K] - Developmental Test & Evaluation (DT); NSWC-Dahlgren - Continue Waterside Protection - Boat Barrier Electronic Infrastructure project to assess EHSS performance, environmental, and operational impact and added benefits of next generation boat barriers. - [$350K] - Operational Test & Evaluation (OT); SSC-PAC ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	1.565	1.286	0.575	-	0.575

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603725N / *Facilities Improvement*	**Project (Number/Name)** 3155 / *Force Protection Ashore*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

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 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603725N / *Facilities Improvement*	**Project (Number/Name)** 3155 / *Force Protection Ashore*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Waterside Protection Capability Development - Martime: OT	Various	SPAWAR : San Diego, CA	0.055	0.200	Nov 2013	-		-		-		-	Continuing	Continuing	Continuing
Waterside Protection Capability Development - Martime: Procurement Specification	Various	SPAWAR : San Diego, CA	0.150	0.129	Nov 2013	-		-		-		-	Continuing	Continuing	Continuing
Waterside Protection Capability Development :COAP Spiral Development	Various	SPAWAR : San Diego, CA	0.423	0.110	Nov 2013	-		-		-		-	Continuing	Continuing	Continuing
Waterside Protection Capability Development : COAP Spiral Develpment (II)	Various	SPAWAR : San Diego, CA	0.567	0.213	Nov 2013	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	1.195	0.652		-		-		-		-	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Command and Control Capability Development: Government Engineering Support	Various	SPAWAR : San Diego, CA	0.175	0.085	Nov 2013	0.239	Nov 2014	-		-		-	Continuing	Continuing	Continuing
Installation Protection Capability Development - Integrated Physical Security and Access Control Automation: Spiral Development	Various	NSWC : Dahlgren, VA	0.155	0.205	Nov 2013	0.237	Nov 2014	-		-		-	Continuing	Continuing	Continuing
Installation Protection Capability Development -Integrated Physical Security and Access	Various	NSWC : Dahlgren, VA	0.095	0.165	Nov 2013	0.189	Nov 2014	-		-		-	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603725N / *Facilities Improvement*	Project (Number/Name) 3155 / *Force Protection Ashore*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Control Automation:Test & Evaluation (DT)															
Installation Protection Capability Development - Integrated Physical Security and Access Control Automation:Test & Evaluation (OT)	Various	SPAWAR : San Diego, CA	0.000	0.203	Nov 2013	0.129	Nov 2014	-		-		-	Continuing	Continuing	Continuing
Installation Protection Capability Development - Elevated Persistence Surveilance:Technology Assessment	Various	NSWC : PCDET	0.000	0.125	Nov 2013	-		-		-		-	Continuing	Continuing	Continuing
Installation Protection Capability Development - Elevated Persistence Surveilance: Spiral Development	Various	NSWC : PCDET	0.000	0.130	Nov 2013	-		-		-		-	Continuing	Continuing	Continuing
Water Protection - Common Information Exchange Spiral Development	WR	SSC-PAC : SSC-PAC	0.000	-		0.119	Nov 2014	0.125	Feb 2016	-		0.125	Continuing	Continuing	Continuing
Installation Protection - Versatile Access Control Spiral Development	WR	NSWC : Dahlgren, VA	0.000	-		0.239	Nov 2014	0.100	Feb 2016	-		0.100	Continuing	Continuing	Continuing
Waterside Protection - Boat Barrier Electronic Infrastructure - Spiral Development	WR	SSC-PAC : SSC-PAC	0.000	-		0.134	Nov 2014	0.350	Feb 2016	-		0.350	Continuing	Continuing	Continuing
		Subtotal	0.425	0.913		1.286		0.575		-		0.575	-	-	-

Remarks

As a result of FY16 decrease in funding levels the Installation Protection Capability Development - Incident Management System (IMS) - Spiral Development project is now rescheduled for FY17 and FY18 restoral funds.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
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	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1.620	1.565		1.286		0.575		-		0.575	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603725N / *Facilities Improvement*	**Project (Number/Name)** 3155 / *Force Protection Ashore*

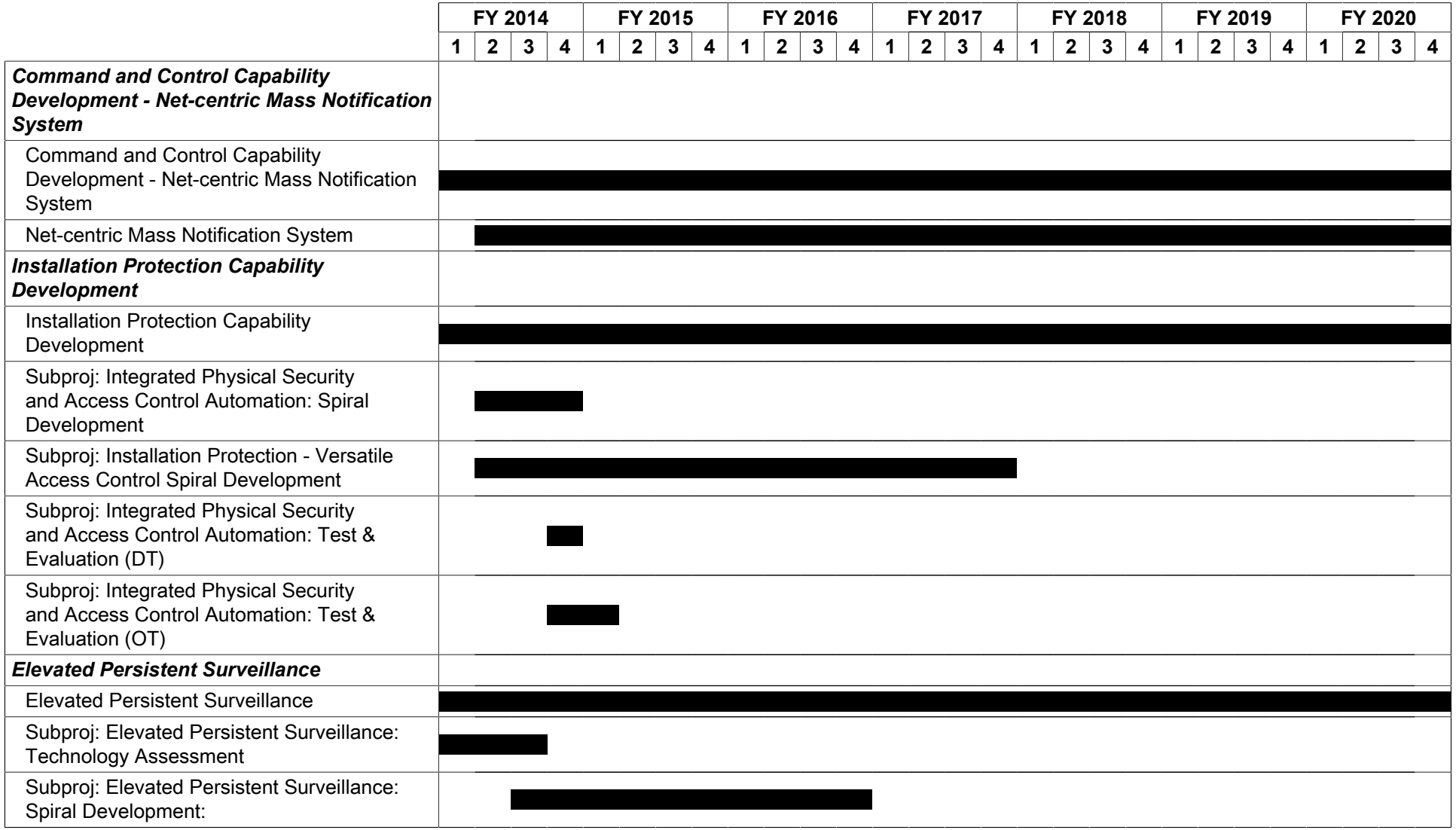

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603725N / *Facilities Improvement*	**Project (Number/Name)** 3155 / *Force Protection Ashore*

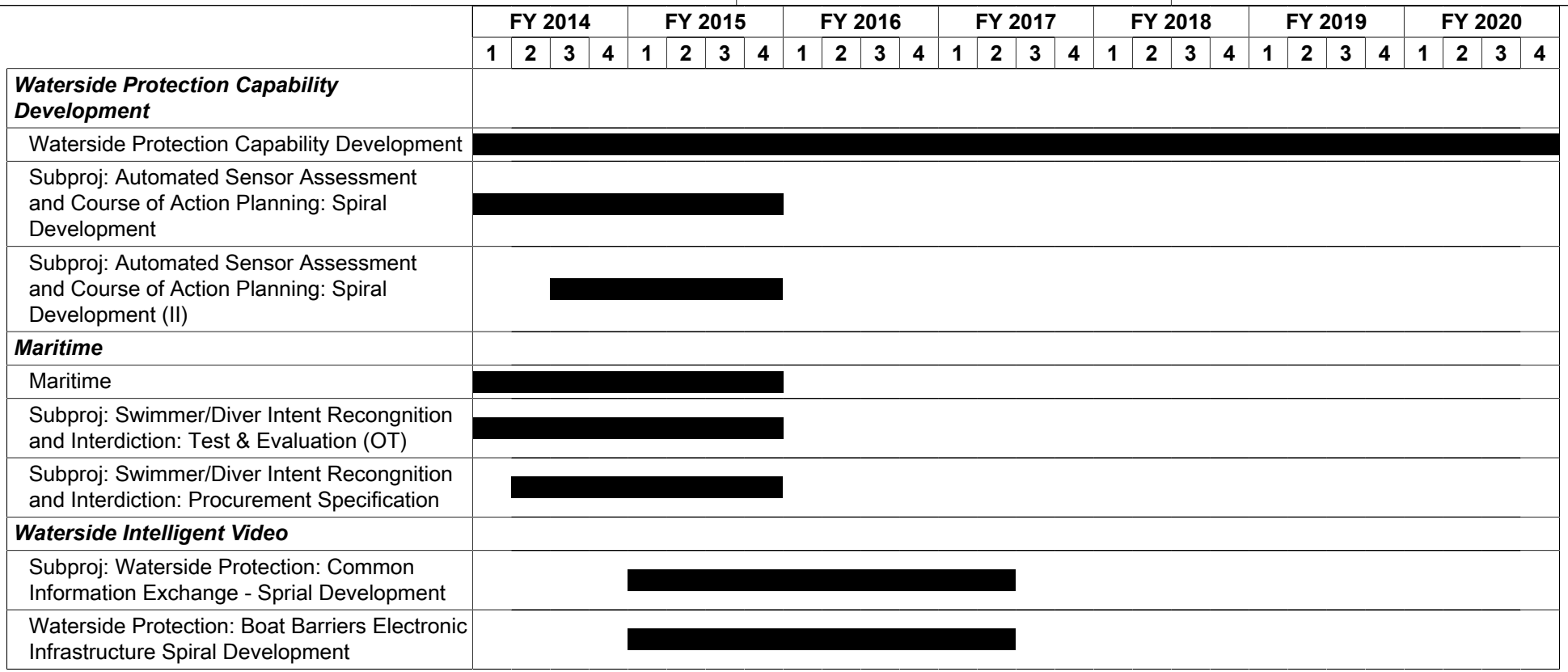

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603725N / *Facilities Improvement*	**Project (Number/Name)** 3155 / *Force Protection Ashore*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Command and Control Capability Development - Net-centric Mass Notification System				
Command and Control Capability Development - Net-centric Mass Notification System	1	2014	4	2020
Net-centric Mass Notification System	2	2014	4	2020
Installation Protection Capability Development				
Installation Protection Capability Development	1	2014	4	2020
Subproj: Integrated Physical Security and Access Control Automation: Spiral Development	2	2014	4	2014
Subproj: Installation Protection - Versatile Access Control Spiral Development	2	2014	4	2017
Subproj: Integrated Physical Security and Access Control Automation: Test & Evaluation (DT)	4	2014	4	2014
Subproj: Integrated Physical Security and Access Control Automation: Test & Evaluation (OT)	4	2014	1	2015
Elevated Persistent Surveillance				
Elevated Persistent Surveillance	1	2014	4	2020
Subproj: Elevated Persistent Surveillance: Technology Assessment	1	2014	3	2014
Subproj: Elevated Persistent Surveillance: Spiral Development:	3	2014	4	2016
Waterside Protection Capability Development				
Waterside Protection Capability Development	1	2014	4	2020
Subproj: Automated Sensor Assessment and Course of Action Planning: Spiral Development	1	2014	4	2015
Subproj: Automated Sensor Assessment and Course of Action Planning: Spiral Development (II)	3	2014	4	2015
Maritime				

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603725N / *Facilities Improvement*	**Project (Number/Name)** 3155 / *Force Protection Ashore*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Maritime	1	2014	4	2015
Subproj: Swimmer/Diver Intent Recongnition and Interdiction: Test & Evaluation (OT)	1	2014	4	2015
Subproj: Swimmer/Diver Intent Recongnition and Interdiction: Procurement Specification	2	2014	4	2015
Waterside Intelligent Video				
Subproj: Waterside Protection: Common Information Exchange - Sprial Development	1	2015	2	2017
Waterside Protection: Boat Barriers Electronic Infrastructure Spiral Development	1	2015	2	2017

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603725N / *Facilities Improvement*	Project (Number/Name) 3347 / *Navy Expeditionary Energy Development*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
3347: *Navy Expeditionary Energy Development*	-	-	0.486	3.497	-	3.497	1.996	-	-	-	-	5.979
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Development of advanced Environmental Control Unit (ECU) for expeditionary force camp shelters will reduce the heating and air-conditioning (HVAC) fuel consumption by 50% and also will reduce fuel transport convoys, and attendant manpower casualties and handling labor.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Expeditionary Environmental Control Unit (EECU)	-	0.486	3.497	-	3.497
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A					
FY 2015 Plans: Conduct engineering analysis and prepare draft solicitation package for full scale prototypes of technologies delivered by Department of Energy (DOE) Advanced Research Projects Agency - Energy (ARPA-E) at Technology Readiness Level (TRL) 6. FY12-FY14 effort to identify and mature technology was resourced by the Assistant Secretary of Defense Office of Operational Energy Plans and Programs.					
FY 2016 Base Plans: - Develop, design, and fabricate full scale prototypes (TRL 7) for technical and operational testing. One prototype is for an ECU utilizing the exhaust heat from generators which is currently wasted. Second prototype is for a new ECU based on Sterling cycle technology which is projected to reduce energy consumption by 30%.					
FY 2016 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	-	0.486	3.497	-	3.497

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603725N / *Facilities Improvement*	**Project (Number/Name)** 3347 / *Navy Expeditionary Energy Development*

D. Acquisition Strategy

Development of this technology will be a competitive award of two complementary technologies in FY16. Once technologies are operationally tested and accepted, solution will be turned over to DoD Program Manager for Mobile Electric Power for Acquisition in support of all DoD.

E. Performance Metrics

Quarterly Program Reviews will be conducted with the major performer to include cost, schedule, and performance risks for milestone achievement associated with the full scale prototypes

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603725N / *Facilities Improvement*	**Project (Number/Name)** 3347 / *Navy Expeditionary Energy Development*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Expeditionary Environmental Control Unit (EECU)	Various	EXWC : Port Hueneme, CA	0.000	-		0.486	Oct 2014	3.497	Dec 2015	-		3.497	-	3.983	-
		Subtotal	0.000	-		0.486		3.497		-		3.497	-	3.983	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		0.486		3.497		-		3.497	-	3.983	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603725N / *Facilities Improvement*	**Project (Number/Name)** 3347 / *Navy Expeditionary Energy Development*

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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 3347																												
Expeditionary Environmental Control Unit (ECU)					[redacted]																							

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603725N / *Facilities Improvement*	**Project (Number/Name)** 3347 / *Navy Expeditionary Energy Development*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3347				
Expeditionary Environmental Control Unit (ECU)	1	2015	4	2017