Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy											Date: March 2023	
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 2022**	**FY 2023**	**FY 2024 Base**	**FY 2024 OCO**	**FY 2024 Total**	**FY 2025**	**FY 2026**	**FY 2027**	**FY 2028**	**Cost To Complete**	**Total Cost**
Total Program Element	29.149	6.306	5.664	10.149	-	10.149	7.817	7.364	7.252	7.402	Continuing	Continuing
0995: *Naval Facilities System*	19.260	2.132	1.993	2.192	-	2.192	2.517	2.441	2.409	2.459	Continuing	Continuing
3018: *Facilities Related Controls Systems (FRCS) Cybersecurity RDTE*	1.250	3.237	2.829	6.462	-	6.462	3.820	3.617	3.545	3.619	Continuing	Continuing
3155: *Force Protection Ashore*	8.639	0.937	0.842	1.495	-	1.495	1.480	1.306	1.298	1.324	Continuing	Continuing

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.

Naval Facilities System Project 0995 addresses 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.

Project 3018: Facilities Related Controls Systems (FRCS) Cybersecurity RDTE. The Cyber Vulnerability Assessments and Evaluations program funds cyber vulnerability assessments of critical shore infrastructure as directed by Section 1650 of the FY17 National Defense Authorization Act (NDAA). Funding will be used for assessments of prioritized critical shore infrastructure. Sec. 1650 of the FY17 NDAA directs the Secretary of Defense to submit a plan for assessing the cyber vulnerability of critical defense infrastructure and begin assessment of this infrastructure during a preliminary pilot program that will assess no fewer than two installations by December, 31 2019. Funded vulnerability assessments will end by calendar year 2020 and will build upon existing mission assurance, blue team, and red team capabilities. As instructed by the Congressional language, the assessments will utilize DoE and DoD national laboratory partnerships. Assessments will end with the submission of a final report to Congress. Strategies and procedures for mitigating the risk of cyber vulnerabilities should be identified during the course of evaluation vulnerability.

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 2024 Navy	Date: March 2023
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 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	6.327	5.664	7.587	-	7.587
Current President's Budget	6.306	5.664	10.149	-	10.149
Total Adjustments	-0.021	0.000	2.562	-	2.562
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.021	0.000			
• Rate/Misc Adjustments	0.000	0.000	2.562	-	2.562

Change Summary Explanation

FY 2024 overall increase of $4.485 million is due to program adjustments for Naval Facilities System, Facilities Related Control Systems (FRCS) Cybersecurity and Force Protection Ashore.

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy											Date: March 2023	
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 2022**	**FY 2023**	**FY 2024 Base**	**FY 2024 OCO**	**FY 2024 Total**	**FY 2025**	**FY 2026**	**FY 2027**	**FY 2028**	**Cost To Complete**	**Total Cost**
0995: *Naval Facilities System*	19.260	2.132	1.993	2.192	-	2.192	2.517	2.441	2.409	2.459	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

In accordance with the National Defense Strategy (NDS) of 2018, A Design for Maintaining Maritime Superiority 2.0 and the NAVFAC Strategic Design 2.0 Guidance, 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 and increasing resiliency. 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 that includes the National Science Foundation (NSF) and the National Institute of Standards and Technology (NIST). This program introduces the idea of resilient facilities and infrastructure thru hardening, rapid assessment, and recovery. The validated technologies will be 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:
Improved resilience of our installations (employing key technology focus areas defined in the NDS) will enable readiness and fleet lethality. An urgent requirement exists for early identification of strategies and solution recommendations for sea level rise at Naval Facilities, and especially nuclear capable waterfront facilities. Recent weather patterns have heightened anxiety levels on perceived huge risks to Navy waterfront facilities. The sub-project will provide analysis and solution recommendations for facilities affected by sea level rise. Approximately 75% of the Navy's waterfront facilities are over 45 years old, but they were designed for a service life of 25 years. 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, specific ship classes. Berthing flexibility is now limited by mooring and utility arrangements. This sub-project addresses new material design and retrofit methods, which extends the service life of existing waterfront facilities by an additional 15 years, or longer. 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):

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603725N / *Facilities Improvement*	**Project (Number/Name)** 0995 / *Naval Facilities System*

Technologies to reduce the cost of SRM issues of high operational significance are addressed on a priority basis. The Navy's 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 demonstrate and validate the cost and reliability of advanced corrosion technologies in order to ensure their acceptance and implementation.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Waterfront Facilities, Repair, Upgrade and Service Life Extension	1.279	1.128	1.315	0.000	1.315
Articles:	-	-	-	-	-
FY 2023 Plans: -Continue funding technologies which includes the addition of investment in Climate Change Adaptation. -Decrease investment in autonomous inspection technologies for piers, pavements, and runways. ***FY 2024 Base Plans:*** -Continue to fund and develop technologies/capabilities that increase adaptation in response to Climate Change. -Continue funding developing technologies/capabilities that increase facilities resiliency and longevity. ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** FY24 increase of $0.187M supports Climate Change Adaptation initiatives.					
Title: Sustainment, Restoration & Modernization	0.853	0.865	0.877	0.000	0.877
Articles:	-	-	-	-	-
FY 2023 Plans: -Continue funding technologies which includes the addition of designing for Climate Change. ***FY 2024 Base Plans:*** -Continue funding technologies that enhance facility designs to accommodate Climate Change and decrease building cost. ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** FY24 increase of $0.012M supports Climate Change Adaptation initiatives.					
Accomplishments/Planned Programs Subtotals	2.132	1.993	2.192	0.000	2.192

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603725N / *Facilities Improvement*	**Project (Number/Name)** 0995 / *Naval Facilities System*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

The Projects identified in this budget have been carefully selected to respond to: Facilities support for the National Defense Strategy of 2018, Acquisition Category Programs, to address TOC and resiliency 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 influence shore facilities.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy		Date: March 2023
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 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Waterfront Facilities, Repair, Upgrade and Services Life Extension	Various	NAVFAC EXWC : Pt Hueneme, CA	8.605	1.279	Dec 2021	1.128	Jan 2023	1.315	Jan 2024	-		1.315	Continuing	Continuing	Continuing
Sustainment, Restoration and Modernization	Various	NAVFAC EXWC : Pt Hueneme, CA	10.655	0.853	Dec 2021	0.865	Jan 2023	0.877	Jan 2024	-		0.877	Continuing	Continuing	Continuing
		Subtotal	19.260	2.132		1.993		2.192		-		2.192	Continuing	Continuing	N/A

	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	19.260	2.132		1.993		2.192		-		2.192	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603725N / *Facilities Improvement*	**Project (Number/Name)** 0995 / *Naval Facilities System*

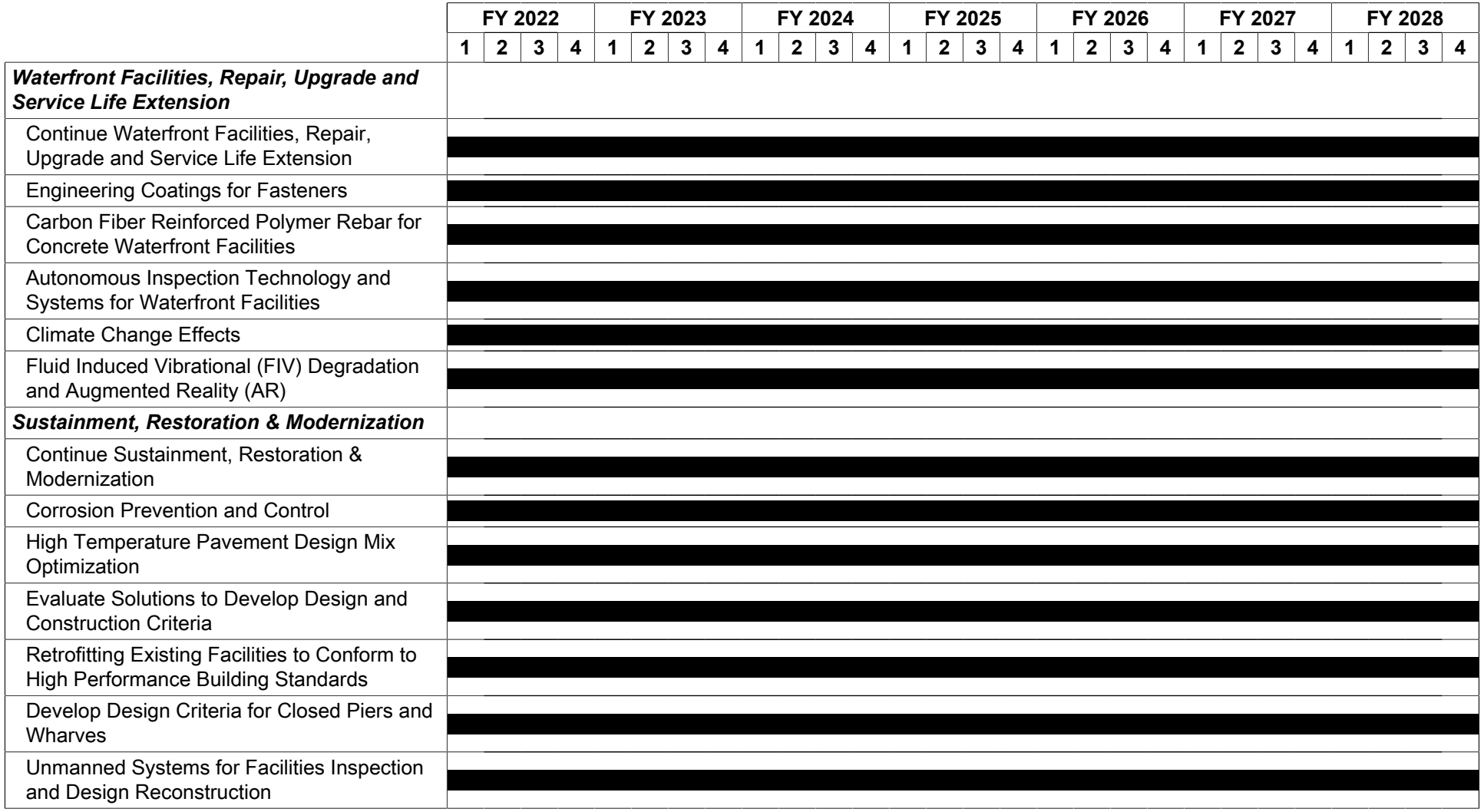

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603725N / *Facilities Improvement*	**Project (Number/Name)** 0995 / *Naval Facilities System*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Waterfront Facilities, Repair, Upgrade and Service Life Extension				
Continue Waterfront Facilities, Repair, Upgrade and Service Life Extension	1	2022	4	2028
Engineering Coatings for Fasteners	1	2022	4	2028
Carbon Fiber Reinforced Polymer Rebar for Concrete Waterfront Facilities	1	2022	4	2028
Autonomous Inspection Technology and Systems for Waterfront Facilities	1	2022	4	2028
Climate Change Effects	1	2022	4	2028
Fluid Induced Vibrational (FIV) Degradation and Augmented Reality (AR)	1	2022	4	2028
Sustainment, Restoration & Modernization				
Continue Sustainment, Restoration & Modernization	1	2022	4	2028
Corrosion Prevention and Control	1	2022	4	2028
High Temperature Pavement Design Mix Optimization	1	2022	4	2028
Evaluate Solutions to Develop Design and Construction Criteria	1	2022	4	2028
Retrofitting Existing Facilities to Conform to High Performance Building Standards	1	2022	4	2028
Develop Design Criteria for Closed Piers and Wharves	1	2022	4	2028
Unmanned Systems for Facilities Inspection and Design Reconstruction	1	2022	4	2028

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603725N / *Facilities Improvement*	Project (Number/Name) 3018 / *Facilities Related Controls Systems (FRCS) Cybersecurity RDTE*	

COST ($ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3018: *Facilities Related Controls Systems (FRCS) Cybersecurity RDTE*	1.250	3.237	2.829	6.462	-	6.462	3.820	3.617	3.545	3.619	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Cyber Vulnerability Assessments and Evaluations program funds cyber vulnerability assessments of critical shore infrastructure as directed by Section 1650 of the FY17 National Defense Authorization Act (NDAA). Funding will be used for assessments of prioritized critical shore infrastructure. Sec. 1650 of the FY17 NDAA directs the Secretary of Defense to submit a plan for assessing the cyber vulnerability of critical defense infrastructure and begin assessment of this infrastructure during a preliminary pilot program that will assess no fewer than two installations by December, 31 2019. Funded vulnerability assessments will end by calendar year 2020 and will build upon existing mission assurance, blue team, and red team capabilities. As instructed by the Congressional language, the assessments will utilize DoE and DoD national laboratory partnerships. Assessments will end with the submission of a final report to Congress. Strategies and procedures for mitigating the risk of cyber vulnerabilities should be identified during the course of evaluation vulnerability.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Cyber Protection and Response Capability (CPRC)	1.000	1.225	2.633	0.000	2.633
Articles:	-	-	-	-	-
FY 2023 Plans: -Continue to develop and test ICS/SCADA assessment procedures -Introduce additional Red Team and Blue team testing of Facilities Related Controls Systems (FRCS) Architecture and Control Systems Platform Enclave (CSPE) -Deploy SDN architecture in to RDTE environment -Test additional FRCS standardization models in RDTE environment -Test Cyber Protection and Response Capability (CPRC) capabilities within emerging cyber vulnerabilities and signatures					
FY 2024 Base Plans: -Develop and test additional FRCS models in RDTE environment -Deploy Red and Blue Team capability to RDTE environment -Test latest cyber vulnerabilities in RDTE environment					
FY 2024 OCO Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603725N / *Facilities Improvement*	**Project (Number/Name)** 3018 / *Facilities Related Controls Systems (FRCS) Cybersecurity RDTE*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** FY24 increase of $1.408M is to support Critical Asset sensing.					
Title: More Situational Awareness (MOSAICS)	0.937	1.324	2.689	0.000	2.689
Articles:	-	-	-	-	-
FY 2023 Plans: -Continue adding sites to MOSAICs monitoring footprint within the RDTE architecture. -Introduce cyber vulnerability test scenarios to develop signatures -Integrate SDN and MOSAICS into standard operating architecture -Test SCEPTRE and CSTB functionality -Validate response capabilities within FLEX ***FY 2024 Base Plans:*** -Continue adding MOSAIC sites to overall transition plan. -Incorporate Fleet test results into MOSAIC's transition plan ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** FY24 increase of $1.365M is to develop and test sensing capability in the MOSAICs RDTE environment.					
Title: Digital Twin Development	1.300	0.280	1.140	0.000	1.140
Articles:	-	-	-	-	-
FY 2023 Plans: -Continue development and management of Digital Twin capabilities. ***FY 2024 Base Plans:*** -Continue development and management of Digital Twin capabilities. ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:***					

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603725N / *Facilities Improvement*	**Project (Number/Name)** 3018 / *Facilities Related Controls Systems (FRCS) Cybersecurity RDTE*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
FY24 increase of $0.860M is to support development and test capability in the digital twin.					
Accomplishments/Planned Programs Subtotals	3.237	2.829	6.462	0.000	6.462

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.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603725N / *Facilities Improvement*	**Project (Number/Name)** 3018 / *Facilities Related Controls Systems (FRCS) Cybersecurity RDTE*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Cyber Protection and Response Capability	WR	EXWC : Pt. Hueneme, CA	0.625	1.000	Feb 2022	1.225	Dec 2022	2.633	Oct 2023	-		2.633	Continuing	Continuing	Continuing
More Situational Awareness (MOSAICS)	C/CPFF	SANDIA National Labs : SANDIA National Labs	0.625	0.937	Feb 2022	1.324	Dec 2022	1.689	Oct 2023	-		1.689	Continuing	Continuing	Continuing
Digital Twin Development	C/CPFF	GSA : GSA	0.000	1.300	Feb 2022	0.280	Dec 2022	1.140	Dec 2023	-		1.140	Continuing	Continuing	Continuing
More Situational Awareness (MOSAICS)	WR	EXWC : NBVC	0.000	0.000		0.000		1.000	Oct 2023	-		1.000	0.000	1.000	-
		Subtotal	1.250	3.237		2.829		6.462		-		6.462	Continuing	Continuing	N/A

	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1.250	3.237		2.829		6.462		-		6.462	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603725N / *Facilities Improvement*	**Project (Number/Name)** 3018 / *Facilities Related Controls Systems (FRCS) Cybersecurity RDTE*

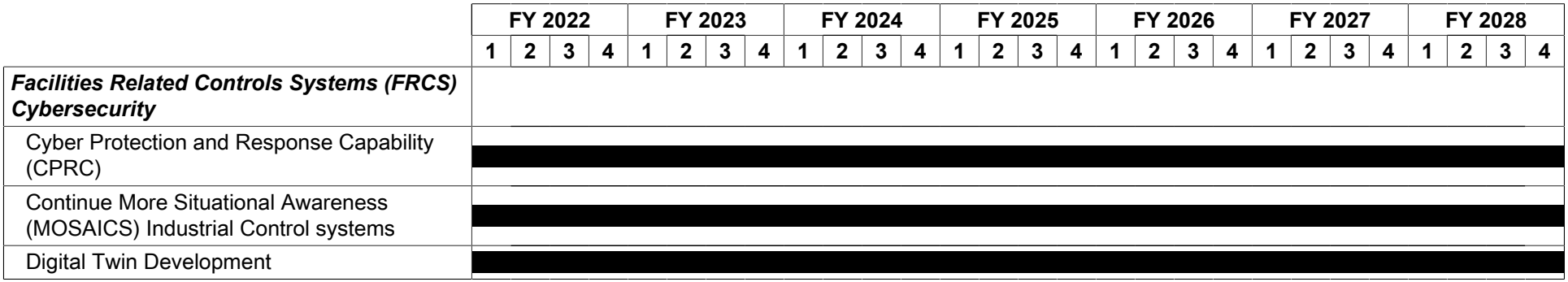

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603725N / *Facilities Improvement*	**Project (Number/Name)** 3018 / *Facilities Related Controls Systems (FRCS) Cybersecurity RDTE*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Facilities Related Controls Systems (FRCS) Cybersecurity				
Cyber Protection and Response Capability (CPRC)	1	2022	4	2028
Continue More Situational Awareness (MOSAICS) Industrial Control systems	1	2022	4	2028
Digital Twin Development	1	2022	4	2028

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy											Date: March 2023	
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 2022**	**FY 2023**	**FY 2024 Base**	**FY 2024 OCO**	**FY 2024 Total**	**FY 2025**	**FY 2026**	**FY 2027**	**FY 2028**	**Cost To Complete**	**Total Cost**
3155: *Force Protection Ashore*	8.639	0.937	0.842	1.495	-	1.495	1.480	1.306	1.298	1.324	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 warfighter and damage to high value units (HVUs)(Waterside Protection). 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. Multiple systems with sensors and cameras are being deployed on Navy installations to be used for threat assessment. These systems are not integrated and there is not a centralized location or system that all the data can be analyzed. The Sensor Assessment Cell (SAC) brings all these sensor feeds into one location and the Physical Security Information Management (PSIM) software provides an integrated picture so that an intelligent assessment can be made. Current AT/FP systems to be integrated include Automated Vehicle Gates (AVG), Regional Alarms/Local Alarms (AMAS), Navy Munition Command enclave (NMC), and Electronic Harbor Security System. 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.

Facilities Related Controls Systems (FRCS) Cybersecurity RDTEN
The Cyber Vulnerability Assessments and Evaluations program funds cyber vulnerability assessments of critical shore infrastructure as directed by Section 1650 of the FY17 National Defense Authorization Act (NDAA). Funding will be used for assessments of prioritized critical shore infrastructure and to assess the cyber vulnerability of critical defense infrastructure. Funded vulnerability assessments will build upon existing mission assurance, blue team, and red team capabilities. As instructed by the Congressional language, the assessments will utilize DoE and DoD national laboratory partnerships.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	**FY 2022**	**FY 2023**	**FY 2024 Base**	**FY 2024 OCO**	**FY 2024 Total**
Title: Force Protection Ashore	0.937	0.842	1.495	0.000	1.495
Articles:	-	-	-	-	-
FY 2023 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
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 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
- Initiate Facial Recognition Access Control Technology Extension (FRACT-X). Incorporates commercial-off-the shelf facial recognition capability to directly support the acceleration of deter, detect, assess, and respond for unauthorized access of vehicles and pedestrians within protection zones managed by physical access control systems (PACS) for achieving another tier of multifactor authentication for point of ingress decision making. Leveraging an AI-powered, best in class facial recognition and verification, authentication hardware and software capability, provide near real-time and highly confident 1 to1 or 1 to N authentication of the individual attempting to gain access. - Initiate Geofencing. Incorporates commercial-off-the shelf solution linking Navy Installations to Federal mass alert system in order to allow for calls/emergency notification to be sent direct to the Regional Dispatch Center (RDC) based on caller's geographical location inside the installation perimeter. All callers will be able to call 911 and based on their geographical location will be properly routed to the RDC or will be routed out in town for their emergency need. - Initiate Mobile Network Support to Physical Security Systems. Incorporates commercial-off-the shelf solution that will allow physical security systems to be interlinked and inform a common operational picture installation wide allowing the installation watch officer to be completely informed 24/7.					
FY 2024 Base Plans: - Continue Underwater Unmanned Vehicle Detection, Tracking and Classification (UUV-DTC). - Initiate Geofencing. Incorporates commercial-off-the shelf solution linking Navy Installations to Federal mass alert system in order to allow for calls/emergency notification to be sent direct to the Regional Dispatch Center (RDC) based on caller's geographical location inside the installation perimeter. All callers will be able to call 911 and based on their geographical location will be properly routed to the RDC or will be routed out in town for their emergency need. - Initiate Mobile Network Support to Physical Security Systems. Incorporates commercial-off-the shelf solution that will allow physical security systems to be interlinked and inform a common operational picture installation wide allowing the installation watch officer to be completely informed 24/7					
FY 2024 OCO Plans: N/A					
FY 2023 to FY 2024 Increase/Decrease Statement:					

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
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 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
FY24 increase of $0.653M supports testing and evaluation of Geofencing and Mobile Network Solutions.					
Accomplishments/Planned Programs Subtotals	0.937	0.842	1.495	0.000	1.495

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.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy			Date: March 2023
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 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Command and Control Capability Development: Government Engineering Support	Various	SPAWAR : San Diego, CA	0.499	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Installation Protection: Airborne Threat	WR	NAWCAD/ONR : Pax River, MD	1.687	0.000		0.000		0.000		-		0.000	0.000	1.687	-
Access Control Point (ACP)	Various	SPAWAR : San Diego, CA	0.250	0.000		0.000		0.000		-		0.000	0.000	0.250	-
Waterside Intelligent Video Security System (WSIVDS)	Various	SPAWAR : San Diego, CA	0.754	0.000		0.000		0.000		-		0.000	0.000	0.754	-
Command and Control Capability Development: Virtual Field Support	WR	SPAWAR : San Diego, CA	0.897	0.000		0.000		0.000		-		0.000	0.000	0.897	-
Integrated Multi-sensor Perimeter Awareness with Intelligent LiDAR (IMPAIL) System	Various	NIWC-PAC : San Diego, CA	0.250	0.000		0.000		0.000		-		0.000	0.000	0.250	-
Waterside Protection: Boat Barriers	C/CPFF	CTTSO : CTTSO	0.999	0.000		0.000		0.000		-		0.000	0.000	0.999	-
Multimodal Automated Vehicle Barrier (MAVB	Various	NIWC-PAC : San Diego, CA	0.405	0.000		0.000		0.000		-		0.000	0.000	0.405	-
Sensor Assessment Cell (SAC) Capability Development	Various	SPAWAR : San Diego, CA	0.304	0.000		0.000		0.000		-		0.000	0.000	0.304	-
Modeling and Simulation of Requirements (M/S ? REQ)	Various	NIWC-LANT : Charleston,SC	0.149	0.000		0.000		0.000		-		0.000	0.000	0.149	-
Installation Protection Capability Development - Integrated Physical Security and Access Control Automation: Spiral Development	Various	NSWC : Dahlgren, VA	0.597	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy			Date: March 2023
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)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Installation Protection Capability Development -Integrated Physical Security and Access Control Automation:Test & Evaluation (DT)	Various	NSWC : Dahlgren, VA	0.449	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Installation Protection Capability Development - Integrated Physical Security and Access Control Automation:Test & Evaluation (OT)	Various	SPAWAR : San Diego, CA	0.332	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Water Protection - Common Information Exchange Spiral Development	WR	SSC-PAC : SSC-PAC	0.244	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Installation Protection - Versatile Access Control Spiral Development	WR	NSWC : Dahlgren, VA	0.339	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Waterside Protection - Boat Barrier Electronic Infrastructure - Spiral Development	WR	SSC-PAC : SSC-PAC	0.484	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Waterside Intelligent Video Security System (WDSS)	Various	SPAWAR : SAN DIEGO, CA	0.000	0.532	Dec 2021	0.000		0.000		-		0.000	0.000	0.532	-
Perimeter Defense Sensor Systems (PDSS)	Various	EXWC : Pt. Hueneme, CA	0.000	0.405	Dec 2021	0.000		0.000		-		0.000	0.000	0.405	-
Rapid Intelligent Video Analytics Layer (RIVAL)	Various	SSC-PAC : SSC-PAC	0.000	0.000		0.342	Dec 2022	0.000		-		0.000	0.000	0.342	-
Facial Recognition Access Control Technology Extension (FRACT-X)	Various	SSC-PAC : SSC-PAC	0.000	0.000		0.250	Dec 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Underwater Unmanned Vehicle Detection, Tracking and Classification (UUV-DTC)	Various	SSC-PAC : SSC-PAC	0.000	0.000		0.250	Dec 2022	0.674	Dec 2023	-		0.674	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy			Date: March 2023
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 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Installation Protection - Geofencing	Various	NSWC : Crance, IN	0.000	0.000		0.000		0.471	Dec 2023	-		0.471	Continuing	Continuing	Continuing
Installation Protection - Mobile Network Support	Various	NSWC : Panama City, FL	0.000	0.000		0.000		0.350	Dec 2023	-		0.350	Continuing	Continuing	Continuing
		Subtotal	8.639	0.937		0.842		1.495		-		1.495	Continuing	Continuing	N/A

	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	8.639	0.937		0.842		1.495		-		1.495	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603725N / *Facilities Improvement*	**Project (Number/Name)** 3155 / *Force Protection Ashore*

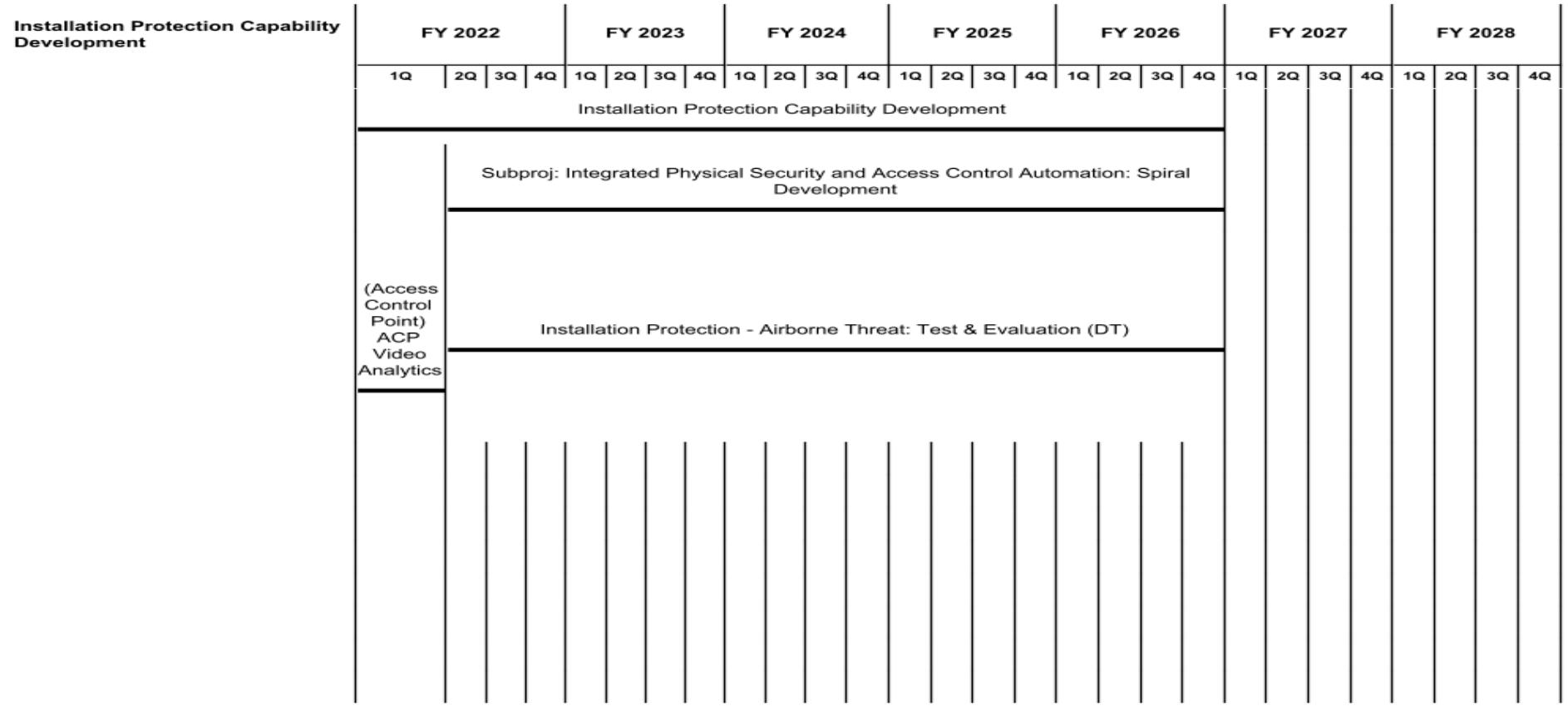

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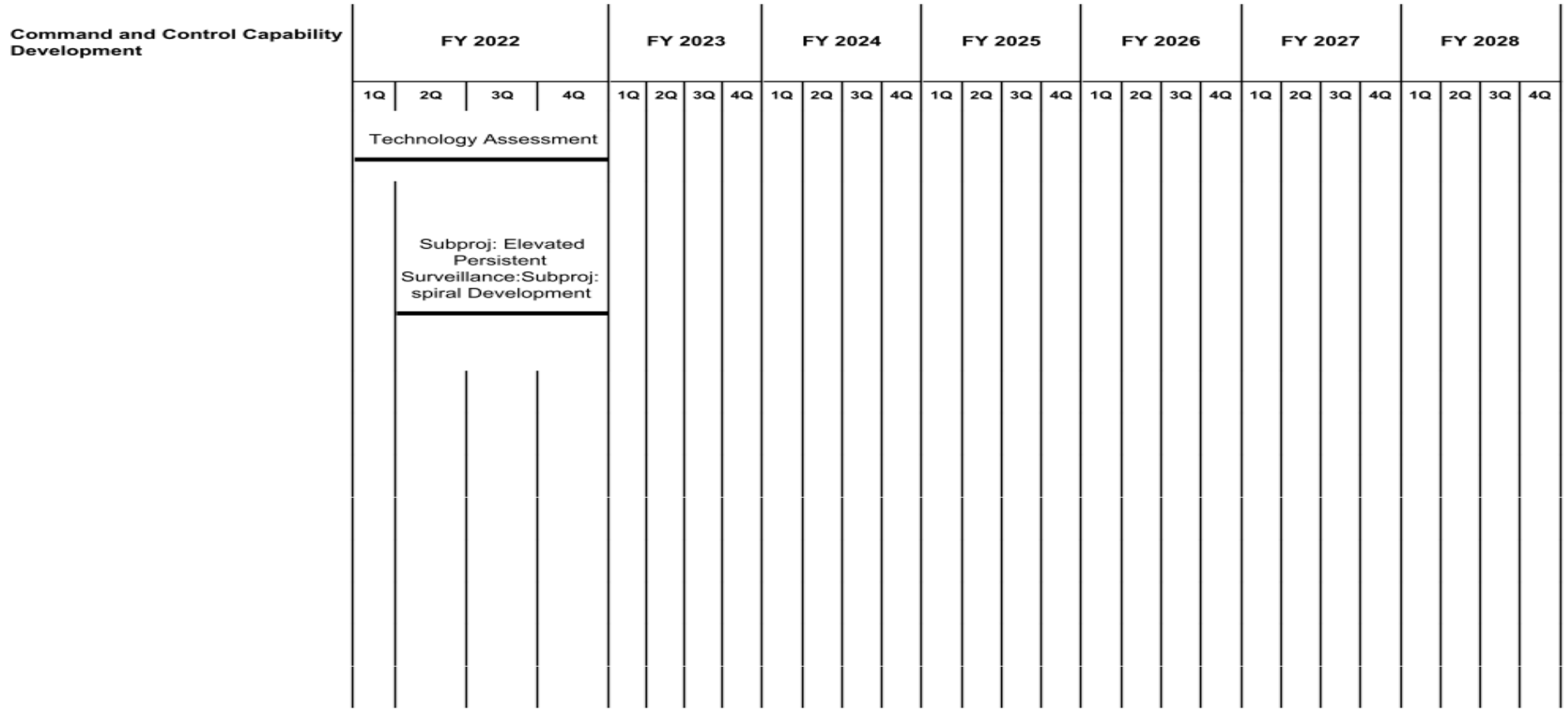
Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603725N / *Facilities Improvement*	**Project (Number/Name)** 3155 / *Force Protection Ashore*



2024DON - 0603725N - 3155

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603725N / *Facilities Improvement*	**Project (Number/Name)** 3155 / *Force Protection Ashore*

Waterside Protection Capability Development

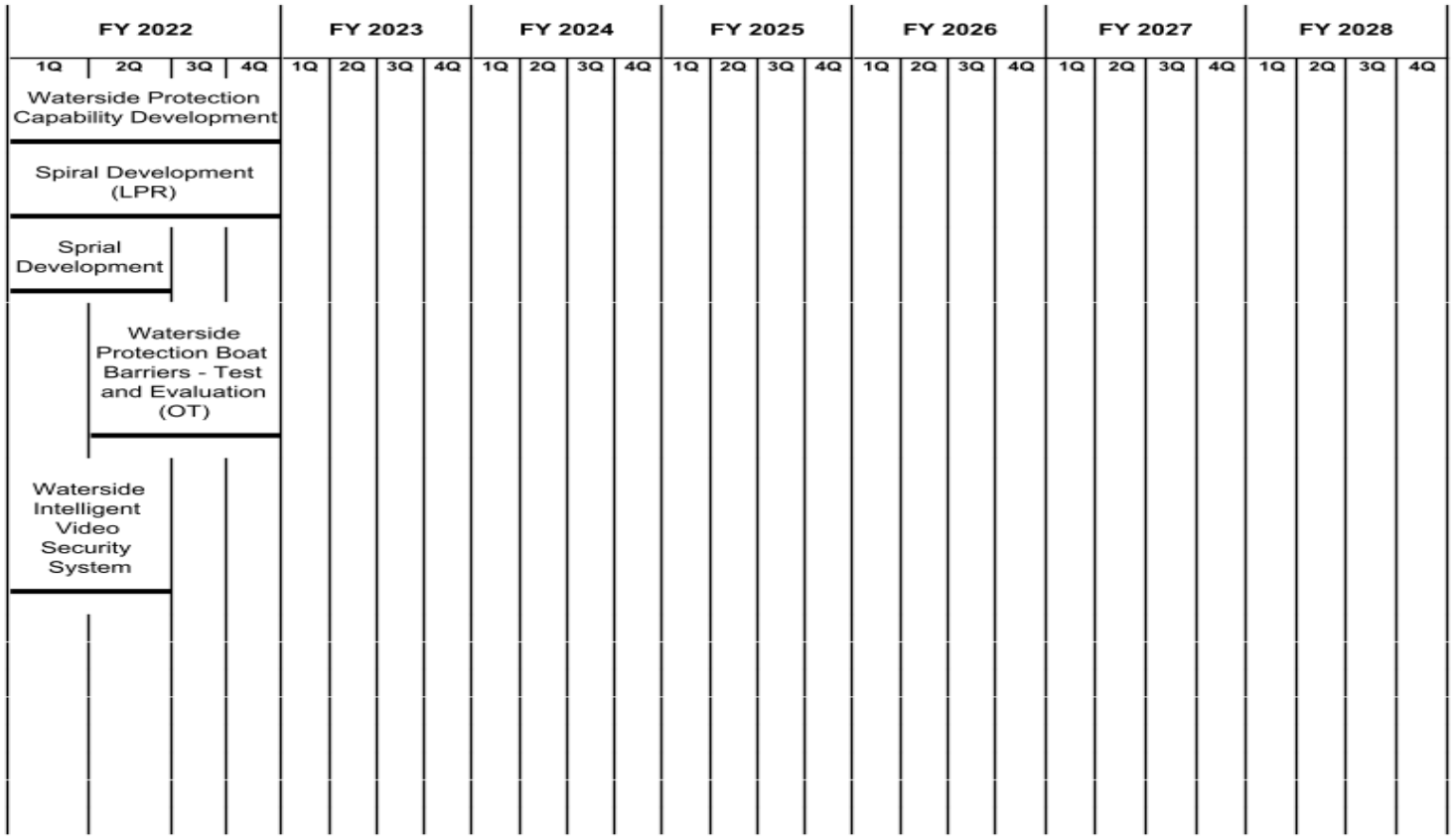


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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603725N / *Facilities Improvement*	**Project (Number/Name)** 3155 / *Force Protection Ashore*

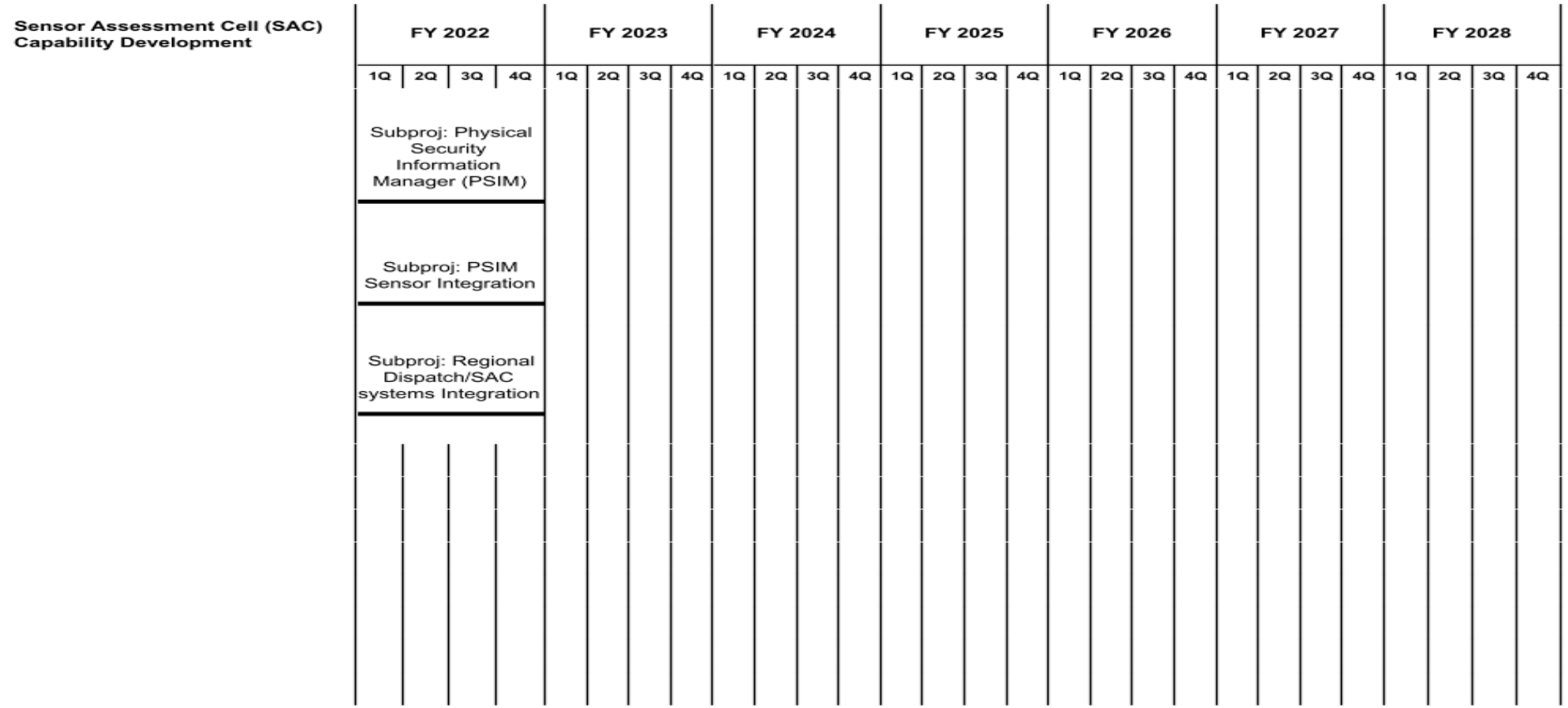

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603725N / *Facilities Improvement*	**Project (Number/Name)** 3155 / *Force Protection Ashore*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Installation Protection Capability Development				
Installation Protection Capability Development	1	2022	4	2026
Subproj: Integrated Physical Security and Access Control Automation: Spiral Development	2	2022	4	2026
Subproj: Installation Protection - Airborne Threat: Test & Evaluation (DT)	2	2022	4	2026
Installation Protection - Access Control: Test & Evaluation (DT)	2	2022	4	2026
Subproj: (Access Control Point) ACP Video Analytics	1	2022	1	2022
Subproj: Rapid Intelligent Video Analytics Layer (RIVAL)	1	2022	4	2022
Subproj: Facial Recognition Access Control Technology Extension (FRACT-X)	1	2022	4	2024
Subproj: Geofencing	1	2023	4	2026
Subproj: Mobile Network Support	1	2023	4	2026
Command and Control Capability Development				
Command and Control Capability Development	1	2022	4	2022
Subproj: Command and Control Capability Development - Virtual Field Support: Test & Evaluation (DT)	2	2022	4	2022
Waterside Protection Capability Development				
Waterside Protection Capability Development	1	2022	4	2022
Subproj: Automated Sensor Assessment and Course of Action Planning: Spiral Development	1	2022	4	2022
Subproj: Waterside Protection: Common Information Exchange - Sprial Development	1	2022	2	2022
Waterside Protection Boat Barriers - Test and Evaluation (OT)	2	2022	4	2022
Subproj: Waterside Intelligent Video Security System	1	2022	2	2022
Subproj: Waterside Defensive Sensor Systems (WDSS)	1	2022	3	2022

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
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**
Subproj: Underwater Unmanned Vehicle Detection, Tracking and Classification (UUV-DTC)	1	2022	4	2026
Sensor Assessment Cell (SAC) Capability Development				
Subproj: Physical Security Information Manager (PSIM)	1	2022	4	2022
Subproj: PSIM Sensor Integration	1	2022	4	2022
Subproj: Regional Dispatch/SAC systems Integration	1	2022	4	2022
Subproj: Perimeter Defense Senor Systems (PDSS)	1	2022	4	2022