Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Navy											Date: April 2022	
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 0603382N *I Advanced Combat Systems Tech*							
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
Total Program Element	165.095	55.364	35.310	18.628	-	18.628	2.205	2.038	2.075	2.025	Continuing	Continuing
0324: *Adv Combat System Technology*	72.076	1.299	1.566	2.480	-	2.480	2.205	2.038	2.075	2.025	Continuing	Continuing
2480: *SSL-TM*	4.649	16.401	5.342	16.148	-	16.148	0.000	0.000	0.000	0.000	0.000	42.540
3422: *SHARC Surface Platform*	14.607	14.081	3.742	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	32.430
3423: *LOCUST*	4.763	2.123	3.371	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	10.257
3437: *EMW/SEWIP/SSEE Accelerator*	37.545	20.559	18.289	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	76.393
3438: *Innovative Naval Prototype (INP) Transition (6.4)*	31.455	0.901	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	32.356
9999: *Congressional Adds*	0.000	0.000	3.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	3.000

A. Mission Description and Budget Item Justification

Open architecture sets standards for technology fields to promote interoperability. For defense systems, standards enable interconnectivity across services and in coalition operations at machine-to-machine speeds. Reducing barriers associated with proprietary software speeds development and delivery of warfighting advantage. The Advanced Combat System Technology line is to evolve the technical and business practices for programs to change to an open architecture construct. The program was constructed to mature both technical and business model integration for C5I systems programs of record in an open architecture environment. The priority was incorporating the principles of modular design and design disclosure, reusable application software, interoperability and secure information exchange, lifecycle affordability and encouraging competition and collaboration.

Project Unit 0324: Funding is to implement of the Naval Open Systems Architecture (OSA) strategy. The implementation of this strategy provides the tools and leadership for assisting programs and the Naval Research and Development Establishment through the technical, business and cultural transition to OSA. The primary tools and assistance will be established through a set of technical reference frameworks for a Naval Digital Warfighting Platform (DWP) and related enterprise sandbox technologies with consistent contract language guidance, Intellectual Property strategies and improvements in transparency of design disclosure and information exchange on past and current investments to support portfolio management and cross-program reuse. Applicable small business technologies such as Automated Test/ Re-Test will also be leveraged to facilitate the Navy's implementation of OSA. The OSA transformation effort will be applied to programs of record. Those elements include ensuring that naval systems, families of systems, programs and prototypes move to modular OSA in accordance with DoD Instruction 5000.01 of 7 Jan 2015 which mandates that all DoD programs utilize Modular OSA to field affordable and interoperable systems. This project facilitates a strategic shift in the technical and business methods to establish cooperation and cross-domain/COI business relationships. This improves innovation and economies of scale throughout the Navy and Marine Corps. This project includes identification of business cases and return on investment for moving the Navy towards an open systems approach, supported by the development of open systems technologies and integrated best business and technical practices for open systems development within Naval

acquisition. This project also supports Systems engineering and acquisition services to deliver capabilities through acquisition, development, integration, production, test, deployment and sustainment of interoperable command, control, communication, computers, intelligence, surveillance reconnaissance, cyber, and information technology capabilities enabling Information Warfare; and other functions. Naval OSA ensures Navy-wide system architectures become extensible and scalable in function, capacity, and workload to meet Joint warfighting requirements. This also includes the identification and development of common software components, functions, reuse methodologies, and extensible product lines.

Project Unit 2480: The efforts described in this mission area address the advanced component development and prototype demonstration associated with the Navy's Solid State Laser Technology Maturation (SSL-TM) Innovative Naval Prototypes (INP) Program and the Leap Ahead Technology (LA-Tech) investments. The SSL-TM program is developing an integrated Laser Weapons System Demonstrator (LWSD). SSL-TM will provide a new capability to the Fleet to address known capability gaps against asymmetric threats (UAS, small boats, and ISR sensors) and will inform future acquisition strategies, system designs, integration architectures, and fielding plans for laser weapon systems.

Project Unit 3422: The SHARC Surface Platforms demonstration project is part of the Department of Defense Third Offset Strategy as one element in the Sensor Grid category for 24/7 autonomy infused Situational Awareness (SA). This project will purchase Commercial-off-the-Shelf SHARC Platforms (wave gliders) and integrate four (4) unique Government-owned classified mission payloads focused on the detection of threats. These capabilities will enable CONOPS development in an operationally relevant environment to demonstrate how these technologies can improve the SA to the battlespace Commanders.

Project Unit 3423: The LOCUST demonstration is part of the Department of Defense Third Offset Strategy as one element in the Effector Grid category for small autonomous systems. LOCUST leverages the BA-3 Innovative Naval Prototype program developing and demonstrating swarming technology. The BA-3 effort is developing both the air vehicle, UAS swarming behaviors, and miniaturized sensor systems. ONR has demonstrated an autonomous system capable of launching 33 UASs in 40 seconds and flying them in a coordinated swarm. This BA-4 effort is trailing the BA-3 demonstration of technologies by a fiscal quarter and then demonstrating the technology in operationally relevant environments with military mission applications.

Project 3437: The EMW/SEWIP/SSEE Accelerator is part of the Department of Defense Third Offset Strategy to improve real time Electro-Magnetic Maneuver Warfare operations. This effort will develop integrated cross platform active and passive sensing solutions, next generation network and real time spectrum operations.

Project 3438: This activity addresses the advanced component development and prototype demonstration associated with ONR's Innovative Naval Prototypes (INP) Program and the Leap Ahead Technology (LA-Tech) investments. INP and LA-Tech investments represent game changing technologies with the potential to revolutionize operational concepts. They are disruptive in nature as they would dramatically change the way naval forces fight. INPs and LA-Techs push the imagination of our nation's technical talent to deliver transformational warfighting capabilities. Investments may include such mission areas as Unmanned and Autonomous Systems, Directed Energy / Electric Weapons, Electromagnetic Maneuver Warfare, Cyber Warfare, and Undersea Warfare.

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Navy	Date: April 2022
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 0603382N *I Advanced Combat Systems Tech*

Advanced Component Development and Prototypes (ACD&P) efforts necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment are funded in this PE. Most of the work in this PE can be classified between Technology Readiness Level (TRL) 6 (system/subsystem model or prototype demonstration in a relevant environment) and TRL 7 (system prototype demonstration in an operational environment).

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	52.381	32.310	0.000	-	0.000
Current President's Budget	55.364	35.310	18.628	-	18.628
Total Adjustments	2.983	3.000	18.628	-	18.628
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	3.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	4.949	0.000			
• SBIR/STTR Transfer	-1.966	0.000			
• Program Adjustments	0.000	0.000	0.000	-	0.000
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000
• Adjustments to Budget Year	-	-	18.628	-	18.628

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2021	FY 2022
Project: 9999: *Congressional Adds*		
Congressional Add: *Minotaur data dissemination and interoperability*	0.000	3.000
Congressional Add Subtotals for Project: 9999	0.000	3.000
Congressional Add Totals for all Projects	0.000	3.000

Change Summary Explanation

Project Unit 0324- SCHEDULE: Activities and milestones clarified to better show synchronization of Project 0324 activities and deliverables in support of Project Overmatch, DWP and related enterprise sandbox technologies, and warfighting digital transformation efforts.

FY 2023 funding increase reflects the fact that the FY 2022 President’s Budget request did not include out-year funding.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy			Date: April 2022
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603382N / *Advanced Combat Systems Tech*	Project (Number/Name) 0324 / *Adv Combat System Technology*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
0324: *Adv Combat System Technology*	72.076	1.299	1.566	2.480	-	2.480	2.205	2.038	2.075	2.025	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Funding is to implement of the Naval Open Systems Architecture (OSA) strategy. The implementation of this strategy provides the tools and leadership for assisting programs and the Naval Research and Development Establishment through the technical, business and cultural transition to OSA. The primary tools and assistance will be established through a set of technical reference frameworks for a Naval Digital Warfighting Platform (DWP) and related enterprise sandbox technologies with consistent contract language guidance, Intellectual Property strategies and improvements in transparency of design disclosure and information exchange on past and current investments to support portfolio management and cross-program reuse. Applicable small business technologies such as Automated Test/Re-Test will also be leveraged to facilitate the Navy's implementation of OSA.

The OSA transformation effort will be applied to programs of record. Those elements include ensuring that naval systems, families of systems, programs and prototypes move to modular OSA in accordance with DoD Instruction 5000.01 of 7 Jan 2015 which mandates that all DoD programs utilize Modular OSA to field affordable and interoperable systems. This project facilitates a strategic shift in the technical and business methods to establish cooperation and cross-domain/COI business relationships. This improves innovation and economies of scale throughout the Navy and Marine Corps.

This project includes identification of business cases and return on investment for moving the Navy towards an open systems approach, supported by the development of open systems technologies and integrated best business and technical practices for open systems development within Naval acquisition.

This project also supports Systems engineering and acquisition services to deliver capabilities through acquisition, development, integration, production, test, deployment and sustainment of interoperable command, control, communication, computers, intelligence, surveillance reconnaissance, cyber, and information technology capabilities enabling Information Warfare; and other functions. Naval OSA ensures Navy-wide system architectures become extensible and scalable in function, capacity, and workload to meet Joint warfighting requirements. This also includes the identification and development of common software components, functions, reuse methodologies, and extensible product lines.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Align the Naval Enterprise Across All Domains to Implement OA	0.199	0.464	0.766	0.000	0.766
Articles:	-	-	-	-	-
FY 2022 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603382N / *Advanced Combat Systems Tech*	**Project (Number/Name)** 0324 / *Adv Combat System Technology*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
- Continue to coordinate the development and scaling of supporting OSA enablers that include the Navy's Integrated Model Environment (IME) and Digital Warfighting Platform (DWP), with associated open standards and policy guidance development that enable application development conforming to open software development kits and application programming interfaces. - Continue to coordinate the prototyping, demonstration, and transition of OSA technologies to validate performance metrics, models, design, and system-of system requirements to meet fleet requirements. - Continue to coordinate the development of open standards and interfaces supported by the Automated Test/ Retest (ATRT) tool suite to enable further integration of third party tools and capabilities leveraging OSA. ***FY 2023 Base Plans:*** - Continue to coordinate the development and scaling of supporting OSA enablers that include the Navy's Integrated Model Environment (IME) the Digital Warfighting Platform (DWP), and related enterprise sandbox technologies, with associated open standards and policy guidance development that enable application development conforming to open software development kits and application programming interfaces. - Continue to coordinate the prototyping, demonstration, and transition of OSA technologies to validate performance metrics, models, design, and system-of system requirements to meet fleet requirements. - Continue to coordinate the development of open standards and interfaces supported by the Automated Test/ Retest (ATRT) tool suite to enable further integration of third party tools and capabilities leveraging OSA. ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increase of $302k from FY 2022 to FY 2023 due to increased scaling of OSA enablers across the Naval SYSCOMs and programs.					
Title: Implement OSA on the Digital Warfighting Platform (DWP)	1.100	1.102	1.406	0.000	1.406
Articles:	-	-	-	-	-
FY 2022 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603382N / *Advanced Combat Systems Tech*	**Project (Number/Name)** 0324 / *Adv Combat System Technology*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
- Integrate Modular Open Systems Architecture capabilities and standards into the Navy's Digital Warfighting Platform (DWP), with associated software development practices, policy changes, and standards development that enable improved test and evaluation, validation, verification, and certification of naval systems. - Leverage OSA implemented on the DWP, as supported by systems engineering subject matter expert support and enabling technologies such as Automated Test/Re-Test (ATRT), to further scale prototyping, experimentation, demonstration, analysis, implementation and adoption of OSA for various Battle Management Aids (BMAs) / Mission Planning Aids (MPs) / Tactical Decision Aids (TDAs) that include Artificial Intelligence / Machine Learning (AI/ML) applications, Networking capabilities, C2, data and track management tools and other common services, and related supporting hardware compute infrastructure solutions. ***FY 2023 Base Plans:*** - Continue to integrate Modular Open Systems Architecture capabilities and standards into the Navy's enterprise sandbox technologies and digital warfighting systems, with associated software development practices, policy changes, and standards development that enable improved test and evaluation, validation, verification, and certification of naval systems. - Leverage OSA implemented on the DWP and the sandbox, as supported by systems engineering subject matter expert support and enabling technologies such as Automated Test/Re-Test (ATRT) and the Force-Level Interoperability SoS Testbed (FLIST), to further scale prototyping, experimentation, demonstration, analysis, implementation and adoption of OSA for various Battle Management Aids (BMAs) / Mission Planning Aids (MPs) that include Artificial Intelligence / Machine Learning (AI/ML) applications, Networking capabilities, C2, data and track management tools and other common services, and related supporting hardware compute infrastructure solutions and related enterprise sandbox technologies. ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:***					

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603382N / *Advanced Combat Systems Tech*	**Project (Number/Name)** 0324 / *Adv Combat System Technology*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Increase of $304k from FY 2022 to FY 2023 due to increased scaling of OSA capabilities, standards, and sandbox technologies across the Naval SYSCOMs and programs.					
Title: Systems Engineering (SE) Support to OA and DWP	0.000	0.000	0.308	0.000	0.308
Articles:	-	-	-	-	-
FY 2022 Plans: N/A ***FY 2023 Base Plans:*** - Continue to coordinate the development and scaling of supporting OSA enablers that include the Navy's Integrated Model Environment (IME), the Digital Warfighting Platform (DWP), and related enterprise sandbox technologies, with associated open standards and policy guidance development that enable application development conforming to open software development kits and application programming interfaces. - Continue to coordinate the prototyping, demonstration, and transition of OSA technologies to validate performance metrics, models, design, and system-of system requirements to meet fleet requirements. - Continue to coordinate the development of open standards and interfaces supported by the Automated Test/ Retest (ATRT) tool suite to enable further integration of third party tools and capabilities leveraging OSA. ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increase of $308k from FY 2022 to FY 2023 due to increased scaling of OSA capabilities, standards, and sandbox technologies across the Naval SYSCOMs and programs.					
Accomplishments/Planned Programs Subtotals	1.299	1.566	2.480	0.000	2.480

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• RDTEN/0307577N: *Intelligence Mission Data (IMD)*	0.000	0.907	0.851	-	0.851	0.771	0.780	0.793	0.806	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603382N / *Advanced Combat Systems Tech*	**Project (Number/Name)** 0324 / *Adv Combat System Technology*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• RDTEN/0604027N: *Digital Warfare*	34.943	46.769	165.753	-	165.753	179.024	134.595	134.426	136.835	Continuing	Continuing
• RDTEN/0603597N: *Automated Test & Analysis*	4.680	7.805	9.773	-	9.773	10.495	10.670	10.904	11.130	49.140	247.675
• RDTEN/0308601N: *Modeling & Simulation Support*	8.494	9.772	9.437	-	9.437	10.763	10.722	10.562	10.737	Continuing	Continuing
• OMN/4B3N: *Acquisition, Logistics, and Oversight*	5.316	6.498	6.670	-	6.670	6.930	4.453	4.542	4.633	0.000	39.042

Remarks

This effort synergizes with and leverages/supports other funded efforts including Intelligence Mission Data (IMD) (RDTEN/PE 0307577N), Digital Warfare (RDTEN/PE 0604027N), Automated Test & Re-Test (RDTEN/PE 0603597N) and Modeling & Simulation Support (RDTEN/PE 0308601N, OMN/4B3N) to support Project Overmatch and warfighting digital transformation efforts, and enterprise sandbox technologies.

D. Acquisition Strategy

This is a non-ACAT program. This project has been a Navy Acquisition Executive directed effort to fundamentally alter the business, technical and policy environment for warfare systems acquisition to result in improved affordability, increased access to innovation, entreprenurialship, a reduction in time to field, improved operational availability, agility, and promote cultural environment change. The Navy's OSA Enterprise effort built off past successes such as the Acoustic Rapid Commercial-off-the-Shelf Insertion (ARCI) program policy statement dated 5 August 2004, the Deputy Chief of Naval Operations (DCNO) requirement dated 23 December 2005, and the Naval OSA Strategy of 2011) and is now being extended and scaled for applicability across the Department of the Navy to enable open, affordable and rapid integrated capability development. This effort continues to expand into and enable related strategic support for Rapid Prototyping, Experimentation and Demonstration and the leveraging of large and small business capabilities, the defense industrial base, government laboratories, and academia partnered with agile contracting approaches to support the evolution of the business, technical and policy landscape for warfare systems acquisition.

This effort synergizes with and leverages/supports other funded efforts including Intelligence Mission Data (IMD) (RDTEN/PE 0307577N), Digital Warfare (RDTEN/PE 0604027N), Automated Test & Re-Test (RDTEN/PE 0603597N) and Modeling & Simulation Support (RDTEN/PE 0308601N, OMN/4B3N) to support Project Overmatch and warfighting digital transformation efforts, and enterprise sandbox technologies.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603382N / *Advanced Combat Systems Tech*	**Project (Number/Name)** 0324 / *Adv Combat System Technology*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering and Signal Processing	Various	Various : Various	31.116	0.000		0.000		0.000		-		0.000	0.000	31.116	-
OA Domain Alignment	Various	Various : Various	11.931	0.000		0.000		0.000		-		0.000	0.000	11.931	-
Align the Naval Enterprise Across All Domains to Implement OA	C/FP	WFCs : Various	3.452	0.450	Mar 2021	0.464	Mar 2022	0.756	Mar 2023	-		0.756	Continuing	Continuing	Continuing
Implement OSA on the Digital Warfighting Platform (DWP)	C/FP	NSWC, NRL, NUWC, NAWC WD; NAWC AD, VARIOUS : Various	2.433	0.499	Apr 2021	0.841	Apr 2022	1.185	Apr 2023	-		1.185	Continuing	Continuing	Continuing
Align the Naval Enterprise Across All Domains to Implement OA	C/FP	NAWC AD : Patuxent River, MD	0.158	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Implement OSA on the Digital Warfighting Platform (DWP)	C/BA	PSNS NSY : Bremerton, WA	0.015	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Systems Engineering and Analysis	Various	Various : Various	0.000	0.000		0.000		0.297	Apr 2023	-		0.297	Continuing	Continuing	Continuing
		Subtotal	49.105	0.949		1.305		2.238		-		2.238	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Industry Development	C/FP	IBM, ANGLE, TBD (New IET Contract) : VARIOUS	9.805	0.000		0.000		0.000		-		0.000	0.000	9.805	-
Technical Data-Academia	WR	NPS-Monterey/DAU : MONTEREY, CA	2.348	0.000		0.000		0.000		-		0.000	0.000	2.348	-
Software Development	C/FP	TRIDENT, ASSET : VARIOUS	0.309	0.000		0.000		0.000		-		0.000	0.000	0.309	-
		Subtotal	12.462	0.000		0.000		0.000		-		0.000	0.000	12.462	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603382N / *Advanced Combat Systems Tech*	**Project (Number/Name)** 0324 / *Adv Combat System Technology*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation	WR	NSWC/DD : DAHLGREN, VA	2.216	0.000		0.000		0.000		-		0.000	0.000	2.216	-
OA Asset Repository (SBIR Account)	WR	Miscellaneous : VARIOUS	0.150	0.000		0.000		0.000		-		0.000	0.000	0.150	-
		Subtotal	2.366	0.000		0.000		0.000		-		0.000	0.000	2.366	N/A

Management Services ($ in Millions)

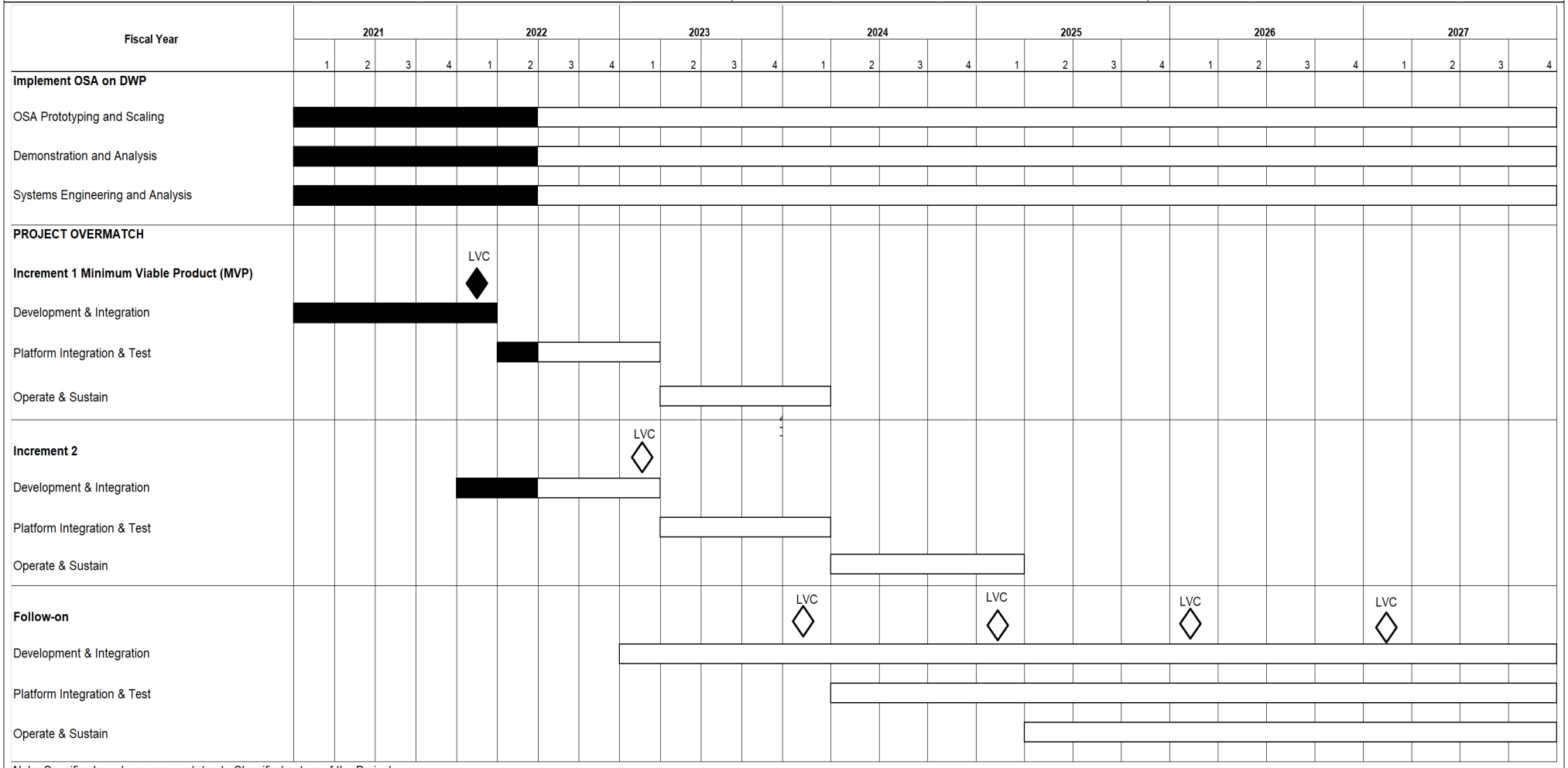
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	C/CPAF	Miscellaneous : VARIOUS	3.374	0.350	Mar 2021	0.261	Mar 2022	0.242	Mar 2023	-		0.242	Continuing	Continuing	Continuing
SBIR Assessment (Cong Add)	WR	NSWC/DD : DAHLGREN, VA	4.748	0.000		0.000		0.000		-		0.000	0.000	4.748	-
DAWDF	TBD	TBD : TBD	0.021	0.000		0.000		0.000		-		0.000	0.000	0.021	-
		Subtotal	8.143	0.350		0.261		0.242		-		0.242	Continuing	Continuing	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	72.076	1.299		1.566		2.480		-		2.480	Continuing	Continuing	N/A

Remarks

Increase of $914k from FY 2022 to FY 2023 to support scaling of OSA enablers and sandbox technologies scaling across all Naval SYSCOMs and programs.

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy		**Date:** April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603382N / *Advanced Combat Systems Tech*	**Project (Number/Name)** 0324 / *Adv Combat System Technology*



Note: Specifics have been removed due to Classified nature of the Project

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603382N / *Advanced Combat Systems Tech*	**Project (Number/Name)** 0324 / *Adv Combat System Technology*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 0324				
Implement OSA on DWP: OSA Prototyping and Scaling	1	2021	4	2027
Implement OSA on DWP: Demonstration and Analysis	1	2021	2	2027
Implement OSA on DWP: Systems Engineering and Analysis	1	2023	4	2027
Increment 1 Minimum Viable Product: Development & Integration	1	2021	4	2022
Increment 1 Minimum Viable Product: Development and Integration: Live, Virtual, and Constructive Test Event	1	2022	1	2022
Increment 1 Minimum Viable Product: Platform Integration & Test	1	2022	4	2022
Increment 1 Minimum Viable Product: Operate & Sustain	2	2022	1	2024
Increment 2: Development & Integration	1	2022	1	2023
Increment 2: Development and Integration: Live, Virtual, and Constructive Test Event	1	2023	1	2023
Increment 2: Platform Integration & Test	2	2023	1	2024
Increment 2: Operate & Sustain	2	2024	1	2025
Follow-on: Development & Integration	1	2023	1	2027
Follow-on: Platform Integration & Test	2	2024	1	2027
Follow-on: Operate & Sustain	2	2025	1	2027

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy										Date: April 2022		
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0603382N / *Advanced Combat Systems Tech*				Project (Number/Name) 2480 / *SSL-TM*			
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
2480: *SSL-TM*	4.649	16.401	5.342	16.148	-	16.148	0.000	0.000	0.000	0.000	0.000	42.540
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

This PU 2480 includes Solid State Laser Technology Maturation (SSL-TM) resources and associated plans intended to provide advanced component development and prototyping for selected SSL-TM technologies maturing out of ONR's supporting Innovative Naval Prototype (INP) BA3 portfolio.

A. Mission Description and Budget Item Justification

The efforts described in this mission area address the advanced component development and prototype demonstration associated with the Navy's Solid State Laser Technology Maturation (SSL-TM) Innovative Naval Prototypes (INP) Program investments. The SSL-TM program is developing an integrated Laser Weapons System Demonstrator (LWSD). SSL-TM will provide a new capability to the Fleet to address known capability gaps against asymmetric threats (UAS, small boats, and ISR sensors) and will inform future acquisition strategies, system designs, integration architectures, and fielding plans for laser weapon systems. Based on ship's schedule, SSL-TM is planned to start de-installation, ship restoration, and hardware disposition activities during FY23.

INP and LA-Tech investments represent game changing technologies with the potential to revolutionize operational concepts. They are disruptive in nature as they would dramatically change the way naval forces fight. INPs and LA-Techs push the imagination of our nation's technical talent to deliver transformational warfighting capabilities. Successful demonstrations are intended to present the Department of the Navy with a programmatic challenge as these new capabilities can lead to the obsolescence of existing capabilities and significant decisions as to the path forward for integrating the new technological capabilities into the warfighting systems of the future.

ONR manages a continuum of INP and LA-Tech development from BA2 to BA3 to BA4. The goal of these BA4 investments is to further mature development and expend efforts necessary to evaluate integrated technologies, representative modes or prototype systems in high fidelity and realistic operating environments. This BA4 investment includes system specific efforts that help expedite technology transition from the laboratory to operational use. Emphasis is on proving component and subsystem maturity prior to integration in major and complex systems and may involve risk reduction initiatives. Projects in this category involve efforts prior to Milestone B and are referred to as advanced component development activities and include technology demonstrations. It is the goal of these projects to achieve Technology Readiness Levels 6 or 7. Successful experimentation and demonstration highlights the viability of new technological capabilities that could be implemented if an acquisition program were to be established to support further development. The portfolio is periodically refreshed through the selection of new INPs and LA-Tech investments as existing ones are completed.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Solid State Laser Technology Maturation (SSL-TM)	16.401	5.342	16.148	0.000	16.148
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603382N / *Advanced Combat Systems Tech*	**Project (Number/Name)** 2480 / *SSL-TM*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total

Description: The Solid State Laser Technology Maturation (SSL-TM) Program is developing an integrated Laser Weapons System Demonstrator (LWSD) that will be installed on USS Portland (LPD-27) during FY 2019 with investments funded in the BA3 Innovative Naval Prototypes Program Element 0603801N. The investment programmed in Program Element 0603382N, Advanced Combat Systems Technology, funds costs for extended at-sea experimentation, operations, and support of the installed system on LPD-27 in the Pacific operating areas. SSL-TM will provide a new capability to the Fleet to address known capability gaps against asymmetric threats (UAS, small boats, and ISR sensors) and will inform future acquisition strategies, system designs, integration architectures, and fielding plans for laser weapon systems.

FY 2022 Plans:
Continue extended experimentation and laser weapons system capability demonstrations on USS Portland during fleet operations and experiments. Develop lesson learned and document system technical performance during operations, demonstrations and experiments. Groom events will include detailed inspection of LWSD system on ship to determine material condition and identify any repairs that are needed. System sustainment will be provided by deployed sailors with support from contractor and government maintenance experts as well as reach-back capability to address questions and issues beyond deployed maintenance team capability. A test team will be deployed during demonstrations and experiments to support coordination of demonstration and test execution, data collection and report writing requirements. The system will be available to support daily operational mission requirements and two (2) focused demonstration /experimentation events are planned during 2 and 3 Quarters of 2021. The scheduled will be adjusted as additional information about the USS Portlands schedule is defined.

FY 2023 Base Plans:
Initiate Laser Weapons System Demonstrator de-installation.

Complete final report, program closeout and hardware disposition after equipment is removed from the ship.

FY 2023 OCO Plans:
N/A

FY 2022 to FY 2023 Increase/Decrease Statement:

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603382N / *Advanced Combat Systems Tech*	**Project (Number/Name)** 2480 / *SSL-TM*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
The funding increase from FY22 to FY23 is required to address the SSL-TM Laser Weapons System Demonstrator de-installation, ship restoration, and hardware disposition after equipment is removed from the ship.					
Accomplishments/Planned Programs Subtotals	16.401	5.342	16.148	0.000	16.148

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The projects identified for execution are non-acquisition programs. The Office of Naval Research will provide Government oversight to the projects. Each project will develop a project plan to support execution. Project plans will include a schedule and the necessary technical requirements and objectives to measure and evaluate performance. Additionally, each project will be subjected to experimentation then demonstrated in operationally relevant environments to assess their ability to meet warfighter requirements. Project deliverables will include the actual integrated hardware/software prototype systems, test reports, and technical data, necessary to support decision making. These decisions include the transition of technologies to acquisition, further refinement of the technology, or termination and reinvestment of remaining funds to other technologies that add military value.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy			Date: April 2022
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603382N / *Advanced Combat Systems Tech*	Project (Number/Name) 2480 / *SSL-TM*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SSL-TM Experimentation and Testing	WR	Naval Surface Warfare Center Dahlgren Division : Dahlgren, VA	1.882	1.303	Oct 2020	0.600	Oct 2021	0.900	Oct 2022	-		0.900	0.000	4.685	-
SSL-TM Experimentation and Sustainment	WR	Naval Surface Warfare Center, Port Hueneme Divisio : Port Hueneme, CA	0.970	12.098	Oct 2020	2.830	Oct 2021	0.400	Oct 2022	-		0.400	0.000	16.298	-
SSL-TM Technical and Engineering T&E	C/CPFF	Northrup Grumman : Redondo Beach, CA	1.462	3.000	Oct 2020	1.000	Oct 2021	0.700	Oct 2022	-		0.700	0.000	6.162	-
SSL-TM Technical and Engineering T&E	WR	Naval Surface Warfare Center Crane Division : Crane, IN	0.000	0.000		0.150	Oct 2021	0.150	Oct 2022	-		0.150	0.000	0.300	-
SSL-TM Technical and Engineering T&E	MIPR	MITRE : Aberdeen Proving Ground, MD	0.000	0.000		0.050	Oct 2021	0.050	Oct 2022	-		0.050	0.000	0.100	-
SSL-TM Technical and Engineering T&E	C/CPFF	RCT Systems Inc : Baltimore, MD	0.000	0.000		0.462	Oct 2021	0.203	Oct 2022	-		0.203	0.000	0.665	-
SSL-TM Technical and Engineering T&E	C/CPFF	Gryphon Technologies : Washington, DC	0.000	0.000		0.250	Oct 2021	0.145	Oct 2022	-		0.145	0.000	0.395	-
SSL-TM Technical and Engineering T&Em Text	C/CPFF	Naval Surface Warfare Center, Port Hueneme Divisio : Port Hueneme, CA	0.335	0.000		0.000		0.300	Oct 2022	-		0.300	0.000	0.635	-
SSL-TM De-Installation Engineering & Plannning	WR	Naval Surface Warfare Center Dahlgren Division : Dahlgren, VA	0.000	0.000		0.000		0.750	Oct 2022	-		0.750	0.000	0.750	-
SSL-TM De-Installation Engineering & Plannning	WR	Naval Surface Warfare Center Crane Division : Cran : Crane, IN	0.000	0.000		0.000		1.550	Oct 2022	-		1.550	0.000	1.550	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603382N / *Advanced Combat Systems Tech*	**Project (Number/Name)** 2480 / *SSL-TM*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SSL-TM De-Installation Engineering & Plannning	C/CPFF	Huntington Ingalls : Not Specified	0.000	0.000		0.000		0.500	Oct 2022	-		0.500	0.000	0.500	-
SSL-TM Alteration Installation Team	C/CPFF	TBD : Not Specified	0.000	0.000		0.000		9.000	Oct 2022	-		9.000	0.000	9.000	-
SSL-TM DeInstallation Cranes & Facilities	TBD	TBD : Not Specified	0.000	0.000		0.000		0.750	Oct 2022	-		0.750	0.000	0.750	-
SSL-TM Disposition	TBD	TBD : Not Specified	0.000	0.000		0.000		0.750	Oct 2022	-		0.750	0.000	0.750	-
		Subtotal	4.649	16.401		5.342		16.148		-		16.148	0.000	42.540	N/A

Remarks

Increase funding to Northrup Grumman and various subcontractors for de-installation, disposal, and final reporting costs.

	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	4.649	16.401		5.342		16.148		-		16.148	0.000	42.540	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603382N / *Advanced Combat Systems Tech*	**Project (Number/Name)** 2480 / *SSL-TM*

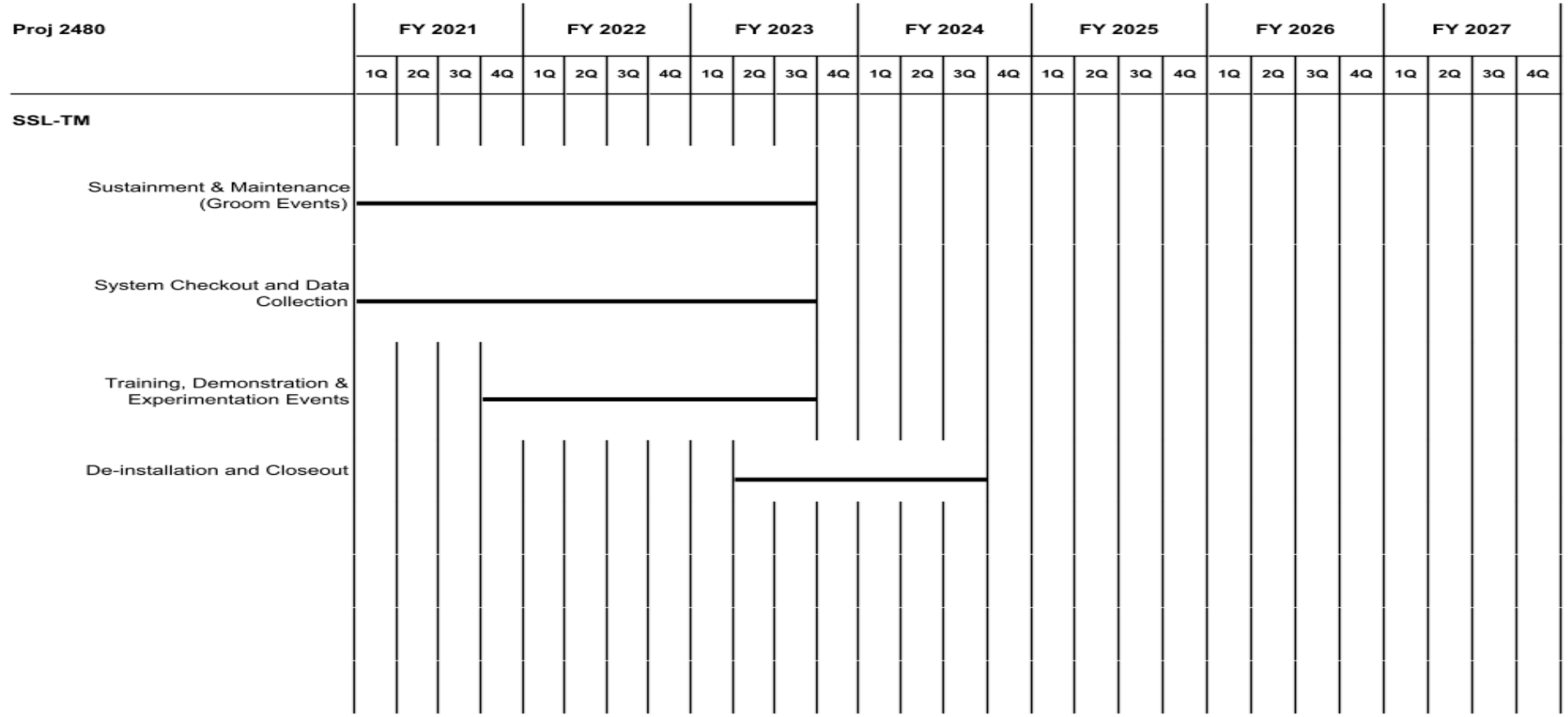


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Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603382N / *Advanced Combat Systems Tech*	**Project (Number/Name)** 2480 / *SSL-TM*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2480				
SSL-TM: Sustainment & Maintenance (Groom Events): Sustainment & Maintenance (Groom Events)	1	2021	3	2023
SSL-TM: System Checkout and Data Collection: System Checkout and Data Collection	1	2021	3	2023
SSL-TM: Training, Demonstration & Experimentation Events: Training, Demonstration & Experimentation Events	4	2021	3	2023
SSL-TM: De-installation and Closeout: De-installation, final report, program closeout and hardware disposition	2	2023	3	2024

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy			Date: April 2022
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603382N / *Advanced Combat Systems Tech*	Project (Number/Name) 3422 / *SHARC Surface Platform*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
3422: *SHARC Surface Platform*	14.607	14.081	3.742	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	32.430
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Sensor Hosting Autonomous Remote Craft (SHARC) Surface Platforms demonstration project is part of the Department of Defense Third Offset Strategy as one element in the Sensor Grid category for 24/7 autonomy infused Situational Awareness (SA). This project will purchase Unmanned Surface Vehicle (USV), autonomous wave gliders, and integrate four (4) unique Government-owned classified mission payloads focused on the detection of threats. The successful demonstration of one particular payload integration to support a high priority warfighting mission area will be followed by a prototype operational event. The full mission cannot be executed without the full array / mission set quantity. Without full mission execution, this will jeopardize our armed forces security by degrading and delaying a critical joint capability. These capabilities will enable Concepts of Operation (CONOPS) development in an operationally relevant environment to demonstrate how these technologies can improve the SA to the battlespace Commanders. This includes persistent, autonomous SA and early warning of submarines or related submarine activity as well as broad area, clandestine implementation of capabilities that enhance Intelligence Preparation of the Battlefield (IPB) and strike missions.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Sensor Hosting Autonomous Remote Craft (SHARC)	14.081	3.742	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: This project will demonstrate the warfighting utility of multiple, long endurance platforms with classified payloads conducting critical Intelligence, Surveillance and Reconnaissance (ISR) missions with simultaneous, wideband data links for signal and imagery data transmission between host assets and Operational level processing systems. Emerging technologies and engineering innovations from Naval/DoD research and development and industry, will be integrated to demonstrate secure and reliable collection, analysis, tactical level access to host asset ISR data and fusion of ISR and targeting data from organic assets and sensors.					
FY 2022 Plans: -Complete final full mission set operational demonstration and evaluation (a mission system set consists of 16 to 20 units/nodes). -Refurbishment of units after final full system demonstration -Complete logistical plan and documentation of system for delivery of full mission set and transition of program. -Transition to program office of record.					

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603382N / *Advanced Combat Systems Tech*	**Project (Number/Name)** 3422 / *SHARC Surface Platform*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Additional information available at higher classification levels. ***FY 2023 Base Plans:*** N/A ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** The funding decreases in FY23 due to Final Full Mission System Set Operational Demonstration.					
Accomplishments/Planned Programs Subtotals	14.081	3.742	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

FY 2019: T&E Milestone: Developmental Test (DT) and assessment of initial payloads installed on USV wave glider platforms
FY 2020: T&E Milestone: DT and assessment of additional payloads installed on USV wave glider platforms
FY 2021: T&E Milestone: Build and validate readiness of integrated Prototype Operational units
FY 2022: T&E and Transition Milestone: COCOM Final Full Mission System Set Operational Demonstration and Transition to OPNAV N2N6F3.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy			Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603382N / *Advanced Combat Systems Tech*	**Project (Number/Name)** 3422 / *SHARC Surface Platform*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Requirements and CONOPS Development	MIPR	Naval Undersea Warfare Center (NUWC) : Keyport, WA	1.275	0.500	Oct 2020	0.400	Oct 2021	0.000		-		0.000	0.000	2.175	-
System & Payload Design, Engineering, and Integration	MIPR	Space and Naval Warfare System Center Pacific (SSC : San Diego, CA	5.291	4.412	Oct 2020	0.950	Oct 2021	0.000		-		0.000	0.000	10.653	-
Purchase COTS SHARC platforms	C/FFP	Space and Naval Warfare System Center Pacific (SSC : San Diego, CA	5.546	7.175	Dec 2020	0.920	Dec 2021	0.000		-		0.000	0.000	13.641	-
		Subtotal	12.112	12.087		2.270		0.000		-		0.000	0.000	26.469	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test & Evaluation Phase	MIPR	PMS-485 Maritime Surveillance Systems, SSCPAC : San Diego, CA	0.883	1.014	Apr 2021	0.413	Nov 2021	0.000		-		0.000	0.000	2.310	-
		Subtotal	0.883	1.014		0.413		0.000		-		0.000	0.000	2.310	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	MIPR	PMS-485 Maritime Surveillance Systems, SSCPAC : San Diego, CA	1.612	0.980	Oct 2020	1.059	Oct 2021	0.000		-		0.000	0.000	3.651	-
		Subtotal	1.612	0.980		1.059		0.000		-		0.000	0.000	3.651	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy			Date: April 2022
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603382N / *Advanced Combat Systems Tech*	Project (Number/Name) 3422 / *SHARC Surface Platform*	

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	14.607	14.081		3.742		0.000		-		0.000	0.000	32.430	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603382N / *Advanced Combat Systems Tech*	**Project (Number/Name)** 3422 / *SHARC Surface Platform*

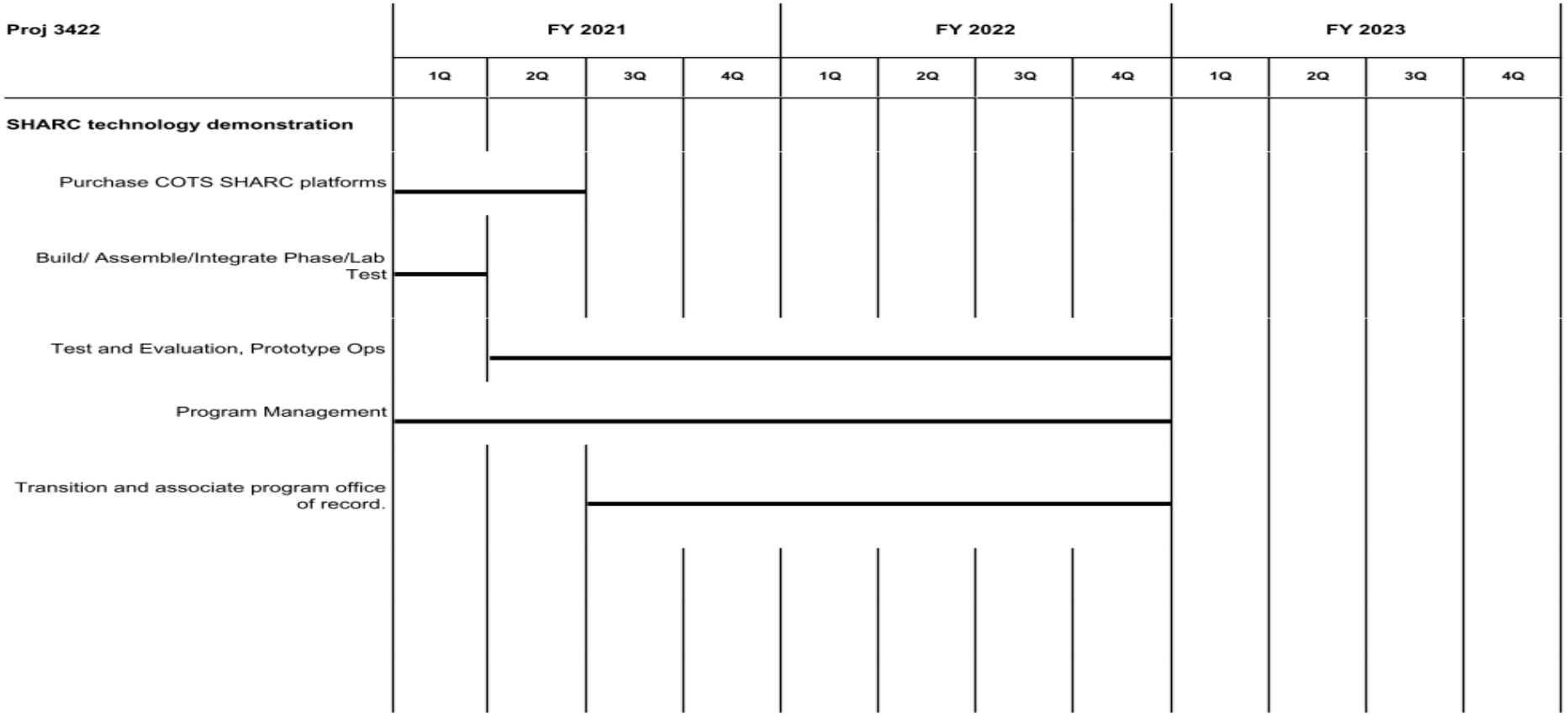

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Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603382N / *Advanced Combat Systems Tech*	**Project (Number/Name)** 3422 / *SHARC Surface Platform*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3422				
SHARC technology demonstration: Purchase COTS SHARC platforms: Purchase COTS SHARC platforms	1	2021	2	2021
SHARC technology demonstration: Build/ Assemble/Integrate Phase/Lab Test: Build/ Assemble/Integrate Phase/Lab Test	1	2021	1	2021
SHARC technology demonstration: Test and Evaluation, Prototype Ops: Test and Evaluation, Prototype Ops	2	2021	4	2022
SHARC technology demonstration: Program Management: Program Management	1	2021	4	2022
SHARC technology demonstration: Transition and associate program office of record.: Transition and program office of record.	3	2021	4	2022

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy			Date: April 2022
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603382N / *Advanced Combat Systems Tech*	Project (Number/Name) 3423 / *LOCUST*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
3423: *LOCUST*	4.763	2.123	3.371	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	10.257
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Low-Cost Uav Swarming Technology (LOCUST) demonstration is part of the Department of Defense (DOD) Third Offset Strategy as one element in the Effector Grid category for small autonomous systems. LOCUST leverages the BA-3 Innovative Naval Prototype program developing and demonstrating swarming technology. The BA-3 effort is developing both the air vehicle, UAS swarming behaviors, and miniaturized sensor systems. ONR has demonstrated an autonomous system capable of launching 33 UASs in 40 seconds and flying them in a coordinated swarm. This BA-4 effort is trailing the BA-3 demonstration of technologies by a fiscal quarter and then demonstrating the technology in operationally relevant environments with military mission applications. Due to limitation of funding, FY 2018 accomplishments were limited to just the planned warfighter workshops and program planning.

To achieve ability to operative in relevant environment with military applications, the LOCUST effort is ruggedizing the air platform to survive extended deployments in high shock and vibration environments while in the launchers as well as in-flight for adverse electromagnetic and weather conditions. Significant additional effort is being done to integrate the air platform, command and control, and launchers into and onto several different manned and unmanned host platforms for mission deployment. Scale-up considerations for manufacturing and supply-chain assurance/vulnerability are being pursued.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Low-Cost Uav Swarming Technology (LOCUST)	2.123	3.371	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: This Project focuses on demonstration of mixed-initiative UAV swarming behaviors, enabling the development of payload appropriate CONOPS/TTPs for Many Vehicle/Many Salvo swarms, and provides unmanned system capability to degrade threat Integrated Air Defense Systems (IADS) in support of follow-on manned system operations.					
FY 2022 Plans: In FY22, LOCUST will continue activities towards a second mission relevant scenario addressing counters to adversary defensive systems. Hardware procurements to support increased flight testing and complexity of demonstration scenarios is planned as are operations that involved close coordination with manned operational assets in the scenario execution.					
FY 2023 Base Plans: NA					
FY 2023 OCO Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603382N / *Advanced Combat Systems Tech*	**Project (Number/Name)** 3423 / *LOCUST*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** The decrease in funding from FY2022 to FY2023 in Proj: 3423 LOCUST is due to the planned completion of Advanced Component Development and Prototypes efforts.					
Accomplishments/Planned Programs Subtotals	2.123	3.371	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• RDTEN/0602792N/3423: *LOCUST*	20.776	8.031	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	28.807
• RDTEN/0603801N/3423: *LOCUST*	12.184	3.386	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	15.570

Remarks

D. Acquisition Strategy

There are multiple phases for this non-acquisition project.

Phase 1 - Marine Corps Warfighting Laboratory (MCWL) Air Combat Element (ACE) will lead the Phase I effort in FY 2018 & FY 2019. MCWL will procure additional launchers, LOCUST platforms and payloads. MCWL will work with the Common Launch Tube Program of Record to procure the multiple missile Common Launch Tube. MCWL will task NAWC AD to help integrate the launcher system onto the MV-22 and support flight test and flight certification. MCWL will use a supporting Warfare Center to integrate the launcher onto a Marine Corps Polaris Corporation M-RZR vehicle or M-RZR trailer. MCWL ACE will closely coordinate with the BA-3 LOCUST program manager to procure the new 6" diameter, additive manufactured, air frame (purchase through BA-3 activity contract). MCWL Experimental Division will define CONOPS/TTPs, the experimental parameters and measures of effectiveness, and operational experiments suitable to apply the capability in a relevant operational environment to evaluate the military utility of the system to a small Marine Corps maneuver element. The Center for Naval Analysis will consolidate the post demonstration report for the systems military utility.

Phase II -ONR execute a multi-domain swarm effort in FY 2020-2023 to demonstrate the advantages of small swarming UAVs against adversary defenses. ONR will work with the Naval Warfare Development Center (NWDC) to develop CONOPS / TTPS for this mission capability and fleet experimentation. NSWC Panama City Division (NSWC PCD) will provide operational and logistics support for the launch and recovery of the vehicles. Initiation of Phase II in FY2020 intentionally follows the 6.3 INP by two fiscal years to allow the INP to develop and mature the miniaturized payloads required for an operational demo. Additionally, close coordination and involvement with acquisition community through these NWDC events and well as simulation exercises and the objective experiments and demonstrations is being done to shape requirements and budget submissions

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603382N / *Advanced Combat Systems Tech*	**Project (Number/Name)** 3423 / *LOCUST*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Multi-Rotor Platform Procur	MIPR	NRL : Wash, DC	0.013	0.000		0.000		0.000		-		0.000	0.000	0.013	-
Multi-Rotor Platform Payload	MIPR	MITRE : Mclean, VA	0.350	0.000		0.000		0.000		-		0.000	0.000	0.350	-
Payload Procurement	C/CPFF	Raytheon : Tucson, AZ	0.704	0.400	Nov 2020	0.800	Nov 2021	0.000		-		0.000	0.000	1.904	-
Multi-Rotor Tests	MIPR	NSWC : Indian Head, MD	0.025	0.000		0.000		0.000		-		0.000	0.000	0.025	-
Fixed-Wing Procurement	C/CPFF	Raytheon : Tuxson, AZ	0.800	1.285	Nov 2020	2.171	Nov 2021	0.000		-		0.000	0.000	4.256	-
Platform Specific Launcher Development	Various	Various : Various	1.201	0.000		0.000		0.000		-		0.000	0.000	1.201	-
Command and Control Integration	Various	Various : Various	0.560	0.000		0.000		0.000		-		0.000	0.000	0.560	-
Fixed Wing Tests	Various	Various : Various	0.950	0.338	May 2021	0.300	Nov 2021	0.000		-		0.000	0.000	1.588	-
		Subtotal	4.603	2.023		3.271		0.000		-		0.000	0.000	9.897	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Management	TBD	Not Specified : Not Specified	0.160	0.100	Oct 2020	0.100	Nov 2021	0.000		-		0.000	0.000	0.360	-
		Subtotal	0.160	0.100		0.100		0.000		-		0.000	0.000	0.360	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	4.763	2.123		3.371		0.000		-		0.000	0.000	10.257	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603382N / *Advanced Combat Systems Tech*	**Project (Number/Name)** 3423 / *LOCUST*

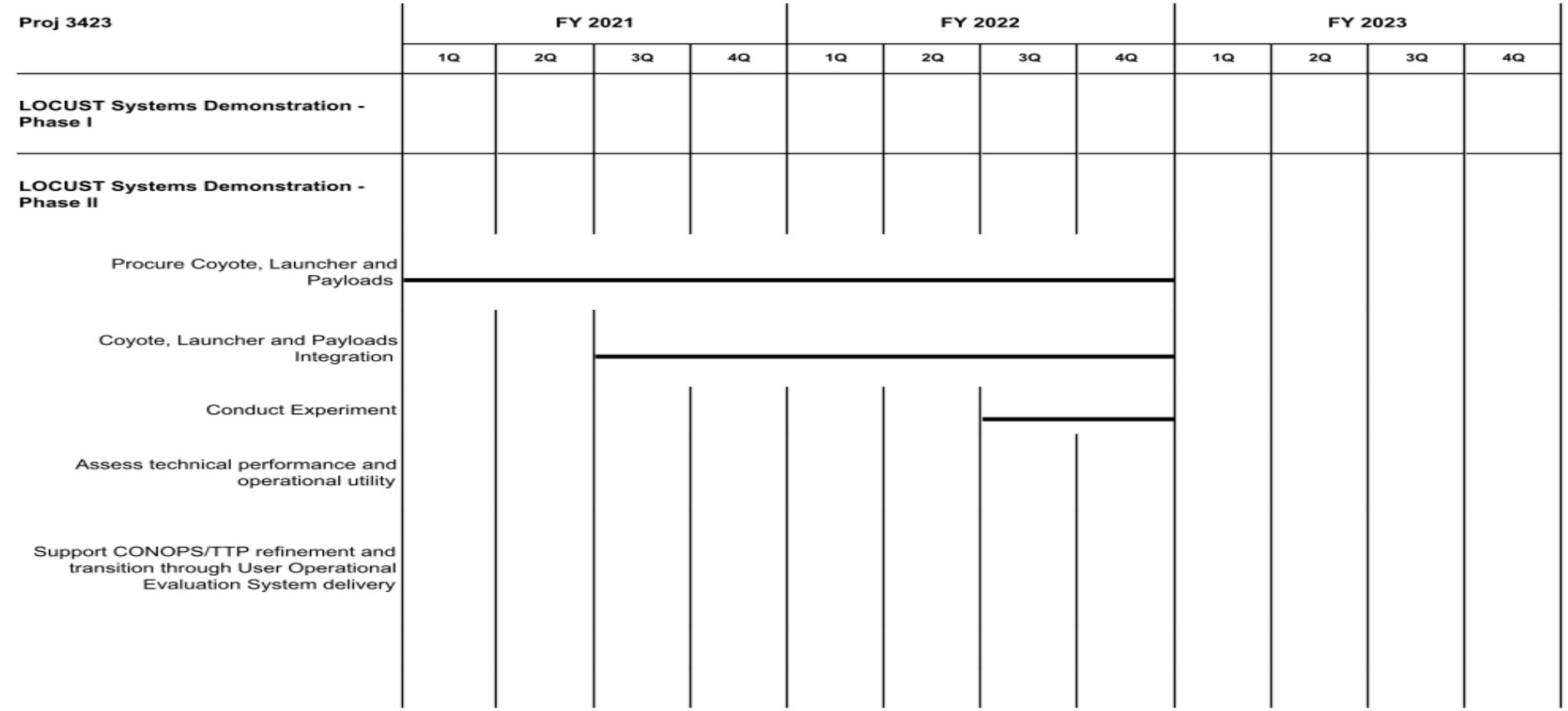

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Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603382N / *Advanced Combat Systems Tech*	**Project (Number/Name)** 3423 / *LOCUST*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3423				
LOCUST Systems Demonstration - Phase II: Procure Coyote, Launcher and Payloads: Procure Coyote, Launcher and Payloads	1	2021	4	2022
LOCUST Systems Demonstration - Phase II: Coyote, Launcher and Payloads Integration: Coyote, Launcher and Payloads Integration	3	2021	4	2022
LOCUST Systems Demonstration - Phase II: Conduct Experiment: Conduct Experiment	3	2022	4	2022

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy			Date: April 2022
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603382N / *Advanced Combat Systems Tech*	Project (Number/Name) 3437 / *EMW/SEWIP/SSEE Accelerator*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
3437: *EMW/SEWIP/SSEE Accelerator*	37.545	20.559	18.289	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	76.393
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Electromagnetic Maneuver Warfare/Surface Electronic Warfare Improvement Program/Ship's Signals Exploitation Equipment (EMW/SEWIP/SSEE) Accelerator is part of the Department of Defense Third Offset Strategy to improve real time Electro-Magnetic Maneuver Warfare operations. EMW/SEWIP/SSEE Accelerator leverages the S&T Budget Activity (BA)-3 Electro-Magnetic Maneuver Warfare technology developments specifically in cross platform operations. The BA-3 effort is developing high speed sensor and electro-magnetic networking, real time spectrum operations and passive targeting technologies. ONR has demonstrated elements of next generation networking, passive tracking, and cross platform combat system coordination. This BA-4 effort is trailing the BA-3 demonstration of technologies deploying and demonstrating the technology in operationally relevant environments with military mission applications. The deployment will allow the ONR to significantly reduce risk, incorporate early warfighter improvements and test with real world data and scenarios.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: EMW/SEWIP/SSEE Accelerator	20.559	18.289	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: EMW/SEWIP/SSEE accelerator builds off of two BA-3 efforts: Surface platform arrays, radios and control software were developed under the Multi-Link CDL System Future Naval Capability and airborne relay were developed within the High Altitude Relay and Routing Future Naval Capability. To date ONR has demonstrated 4-beam CDL surface arrays, radios and controls via land based motion simulators, while the airborne relay functionality has been demonstrated on a P-3 platform in a relevant environment.					
FY 2022 Plans: Continue Developing the directional networking waveform to include routing along with dynamic spectrum allocation. A frequency division overlay will be incorporated into the waveform which will allow greater node capacity and reduced latency. The addition of software-defined networking capabilities will enable distributed sensor data dissemination and interoperability with legacy platforms that use nonstandard networking protocols. Acquire additional hardware for expanded at sea testing aboard deployed surface platforms and continue the development of airborne systems.					
FY 2023 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603382N / *Advanced Combat Systems Tech*	**Project (Number/Name)** 3437 / *EMW/SEWIP/SSEE Accelerator*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
No activities due to program completion. ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** The decrease in funding from FY 2022 to FY 2023 is due to the program completion.					
Accomplishments/Planned Programs Subtotals	20.559	18.289	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Projects identified for execution under this project number are non-acquisition programs. Each project will develop a project plan to support project execution. Project plans will include a project schedule and technical requirements and objectives to measure project performance. Based on prior BA-3 work prototype contracts are in place and can be used to develop hardware for at sea trials. Software and ship installation are expected to use a combination of existing shipyard contracts and government field activities.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603382N / *Advanced Combat Systems Tech*	**Project (Number/Name)** 3437 / *EMW/SEWIP/SSEE Accelerator*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prototype Development	MIPR	NSWC : various	18.848	11.614	Oct 2020	2.630	Oct 2021	0.000		-		0.000	0.000	33.092	-
Prototype Development	PO	NAWC : various	9.962	6.145	Oct 2020	3.761	Oct 2021	0.000		-		0.000	0.000	19.868	-
Prototype Development	MIPR	SUPSHIP : Bath Maine	3.867	1.400	Oct 2020	0.874	Oct 2021	0.000		-		0.000	0.000	6.141	-
Prototype Development	MIPR	NRL : Washington, DC	4.868	1.400	Oct 2020	2.624	Oct 2021	0.000		-		0.000	0.000	8.892	-
Prototype Development	C/CPFF	Vectrus and BAE : various	0.000	0.000		4.465	Oct 2021	0.000		-		0.000	0.000	4.465	-
Prototype Demonstration	C/CPFF	LEIDOS : various	0.000	0.000		3.935	Oct 2021	0.000		-		0.000	0.000	3.935	-
		Subtotal	37.545	20.559		18.289		0.000		-		0.000	0.000	76.393	N/A

Remarks

NSWC: Prototype development of shipboard next generation networking apertures and EMW cross platform software.
NAWC: Prototype development of airborne next generation apertures and networking software.
SUPSHIP: Installation and testing of Cross platform EMW accelerator prototype on 2 Navy test vessels.
NRL: Installation and testing of Cross platform EMW accelerator prototype on Navy maritime patrol aircraft.

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	37.545	20.559		18.289		0.000		-		0.000	0.000	76.393	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603382N / *Advanced Combat Systems Tech*	**Project (Number/Name)** 3437 / *EMW/SEWIP/SSEE Accelerator*

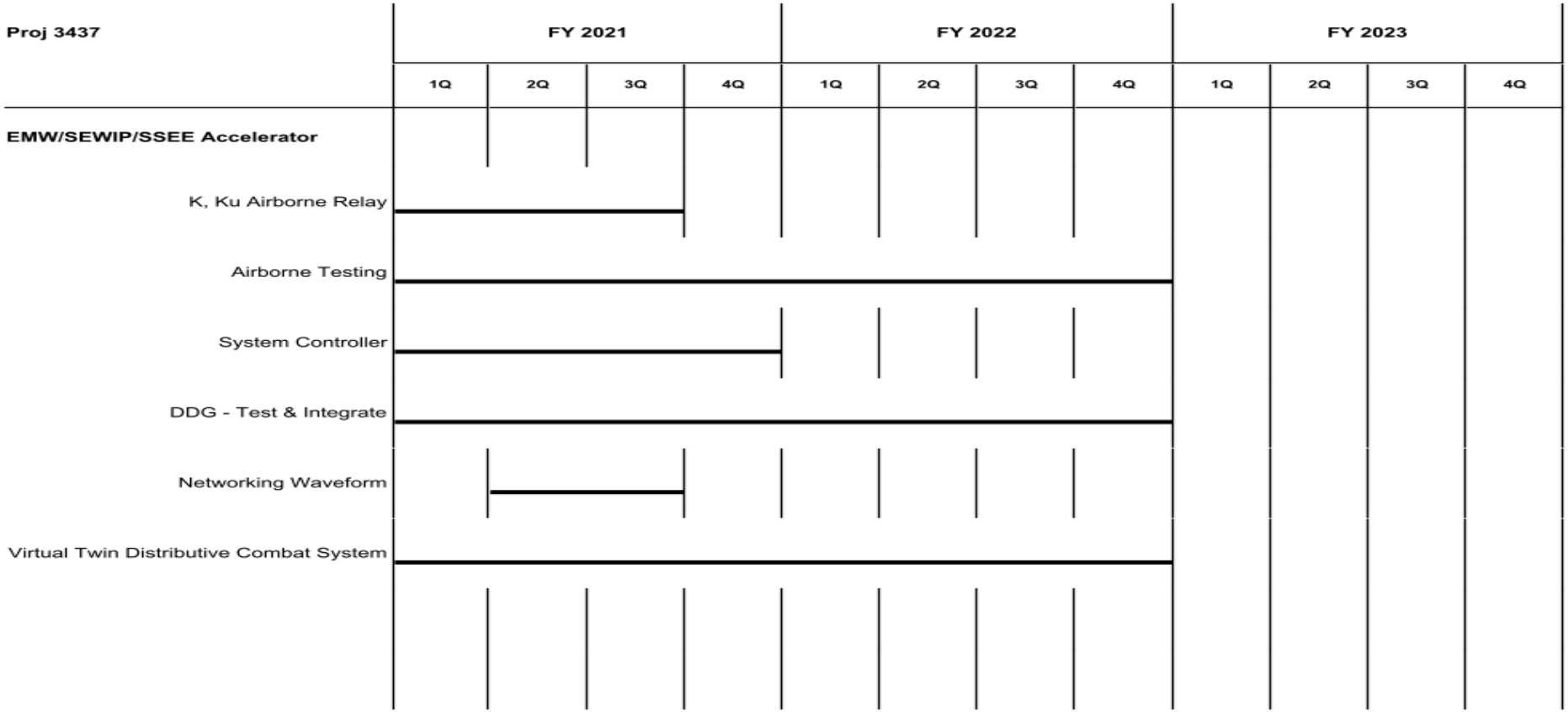

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Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603382N / *Advanced Combat Systems Tech*	**Project (Number/Name)** 3437 / *EMW/SEWIP/SSEE Accelerator*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3437				
EMW/SEWIP/SSEE Accelerator: K, Ku Airborne Relay: K, Ku Airborne Relay	1	2021	3	2021
EMW/SEWIP/SSEE Accelerator: Airborne Testing: Airborne Testing	1	2021	4	2022
EMW/SEWIP/SSEE Accelerator: System Controller: System Controller	1	2021	4	2021
EMW/SEWIP/SSEE Accelerator: DDG - Test & Integrate: DDG - Test & Integrate	1	2021	4	2022
EMW/SEWIP/SSEE Accelerator: Networking Waveform: Networking Waveform	2	2021	3	2021
EMW/SEWIP/SSEE Accelerator: Virtual Twin Distributive Combat System: Virtual Twin Distributive Combat System	1	2021	4	2022

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy			Date: April 2022
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603382N / *Advanced Combat Systems Tech*	Project (Number/Name) 3438 / *Innovative Naval Prototype (INP) Transition (6.4)*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
3438: *Innovative Naval Prototype (INP) Transition (6.4)*	31.455	0.901	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	32.356
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The efforts described in this mission area address the advanced component development and prototype demonstration associated with ONR's Innovative Naval Prototypes (INP) Program and the Leap Ahead Technology (LA-Tech) investments. INP and LA-Tech investments represent game changing technologies with the potential to revolutionize operational concepts. They are disruptive in nature as they would dramatically change the way naval forces fight. INPs and LA-Techs push the imagination of our nation's technical talent to deliver transformational warfighting capabilities. Successful demonstrations are intended to present the Department of the Navy with a programmatic challenge as these new capabilities can lead to the obsolescence of existing capabilities and significant decisions as to the path forward for integrating the new technological capabilities into the warfighting systems of the future.

ONR manages a continuum of INP and LA-Tech development from BA2 to BA3 to BA4. The goal of these BA4 investments is to further mature development and expend efforts necessary to evaluate integrated technologies, representative modes or prototype systems in high fidelity and realistic operating environments. This BA4 investment includes system specific efforts that help expedite technology transition from the laboratory to operational use. Emphasis is on proving component and subsystem maturity prior to integration in major and complex systems and may involve risk reduction initiatives. Projects in this category involve efforts prior to Milestone B and are referred to as advanced component development activities and include technology demonstrations. It is the goal of these projects to achieve Technology Readiness Levels 6 or 7. Successful experimentation and demonstration highlights the viability of new technological capabilities that could be implemented if an acquisition program were to be established to support further development. The portfolio is periodically refreshed through the selection of new INPs and LA-Tech investments as existing ones are completed.

INP, LA-Tech, and supporting technology investments may include R-2 Activities mission areas such as Unmanned and Autonomous Systems, Directed Energy / Electric Weapons, Electromagnetic Maneuver Warfare, Cyber Warfare, and Undersea Warfare.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Advanced Long Range Targeting (ALRT)	0.901	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: This is a new effort beginning in FY 2021 that transitioned out of 6.3 FNC into 6.4 INP. This effort will remain in INP transition for a period of one year for integration experimentation and demonstration of an Advanced Long Range Targeting (ALRT) capability. This capability will utilize a family of systems that will dramatically increase the range at which the U.S. Navy can provide targeting solutions and hold targets at risk. It					

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603382N / *Advanced Combat Systems Tech*	**Project (Number/Name)** 3438 / *Innovative Naval Prototype (INP) Transition (6.4)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
will cross multiple platforms, sensors and warfare domains and leverage technology developments from a broad set of Future Naval Capability (FNC) and Innovative Prototype (INP) investments. It will perform integration, experimentation and demonstration of sensors, communications and battle management command and control (BMC2) technologies to enable integrated and distributed forces that are capable of dynamic synchronized actions. ***FY 2022 Plans:*** N/A ***FY 2023 Base Plans:*** N/A ***FY 2023 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	0.901	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The projects identified for execution are non-acquisition programs. The Office of Naval Research will provide Government oversight to the projects. Each project will develop a project plan to support execution. Project plans will include a schedule and the necessary technical requirements and objectives to measure and evaluate performance. Additionally, each project will be subjected to experimentation then demonstrated in operationally relevant environments to assess their ability to meet warfighter requirements. Project deliverables will include the actual integrated hardware/software prototype systems, test reports, and technical data, necessary to support decision making. These decisions include the transition of technologies to acquisition, further refinement of the technology, or termination and reinvestment of remaining funds to other technologies that add military value.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy			Date: April 2022
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603382N / *Advanced Combat Systems Tech*	Project (Number/Name) 3438 / *Innovative Naval Prototype (INP) Transition (6.4)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Advanced ASW sensor payload	MIPR	NUWC : Newport, Rhode Island	2.540	0.000		0.000		0.000		-		0.000	0.000	2.540	-
Advanced ASW sensor payload	MIPR	JHU-APL : Columbia, Maryland	3.440	0.000		0.000		0.000		-		0.000	0.000	3.440	-
Advanced ASW sensor payload	MIPR	SSC-PAC : San Diego, California	2.192	0.000		0.000		0.000		-		0.000	0.000	2.192	-
Advanced ASW sensor payload	MIPR	NASA Jet Propulsion Lab : Pasedena, California	2.490	0.000		0.000		0.000		-		0.000	0.000	2.490	-
Advanced ASW kinetic payload	MIPR	PSU -ARL : State College, Pennsylvania	6.490	0.000		0.000		0.000		-		0.000	0.000	6.490	-
Advanced ASW kinetic payload	MIPR	SSC-PAC : San Diego, California	2.426	0.000		0.000		0.000		-		0.000	0.000	2.426	-
Advanced ASW kinetic payload	MIPR	NASA Jet Propulsion Lab : Pasedena, California	1.212	0.000		0.000		0.000		-		0.000	0.000	1.212	-
Advanced aerial lift payload	MIPR	NSWC-CD : Bethesda, Maryland	1.536	0.000		0.000		0.000		-		0.000	0.000	1.536	-
Advanced aerial lift payload	MIPR	NASA Jet Propulsion Lab : Pasedena, California	1.335	0.000		0.000		0.000		-		0.000	0.000	1.335	-
Advanced aerial lift payload	MIPR	SSC-PAC : San Diego, California	2.984	0.000		0.000		0.000		-		0.000	0.000	2.984	-
HIJENKS Mission Planning Software Development	WR	NAVAIR : Patuxent River, Md	0.330	0.000		0.000		0.000		-		0.000	0.000	0.330	-
HIJENKS Launch System Software/Hardware Integration	WR	NAVAIR : Patuxent River, Md	0.500	0.000		0.000		0.000		-		0.000	0.000	0.500	-
HIJENKS System Requirements and CONEMPS	WR	NAVAIR : Patuxent River, Md	0.250	0.000		0.000		0.000		-		0.000	0.000	0.250	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy			Date: April 2022
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603382N / *Advanced Combat Systems Tech*	Project (Number/Name) 3438 / *Innovative Naval Prototype (INP) Transition (6.4)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
HIJENKS Airborne Launch Study	C/CPFF	Platform Prime : TBD	0.500	0.000		0.000		0.000		-		0.000	0.000	0.500	-
HIJENKS Mission Analysis	FFRDC	JH APL : Laurel, MD	0.303	0.000		0.000		0.000		-		0.000	0.000	0.303	-
HIJENKS T&E Launcher	C/CPFF	Platform Prime : TBD	0.300	0.000		0.000		0.000		-		0.000	0.000	0.300	-
HIJENKS Safe and Arm Design	C/FFP	Platform Prime : TBD	0.500	0.000		0.000		0.000		-		0.000	0.000	0.500	-
HIJENKS Environmentally Hardened Payload Activities	C/UCA	DOTC - Multiple Awards : Various	0.500	0.000		0.000		0.000		-		0.000	0.000	0.500	-
HIJENKS Target Procurement and Testing	WR	NRL : Washington, DC	0.500	0.000		0.000		0.000		-		0.000	0.000	0.500	-
HIJENKS Hard Tube Capability	C/CPFF	Multiple Awards - Various : TDB	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
HIJENKS T&E Platform Payload Source Devlopment	C/UCA	DOTC - Multiple Awards : Various	0.927	0.000		0.000		0.000		-		0.000	0.000	0.927	-
HIJENKS T&E Platform-Payload Source Development	C/BPA	Lockheed Martin, : Grand Prairie, TX	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
HIJENKS Program Support	WR	NSWCDD and NAWCWD : Dahlgren, VA	0.200	0.000		0.000		0.000		-		0.000	0.000	0.200	-
HIJENKS T&E Platform-Payload Source Development	C/BPA	General Atomics : San Diego, CA	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
HIJENKS T&E Platform-Payload Source Development	WR	Raytheon, Albuquerque, NM : Albuquerque, NM	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
NSWCDD Government Pulsed Power GFE Hardware	WR	NSWCDD Dahlgren, VA : Dahlgren, VA	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
ALRT BMC2 Integration	C/CPFF	TBD : TBD	0.000	0.390	Oct 2020	0.000		0.000		-		0.000	0.000	0.390	-
ALRT Program Support	WR	TBD : TBD	0.000	0.200	Oct 2020	0.000		0.000		-		0.000	0.000	0.200	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy			Date: April 2022
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603382N / *Advanced Combat Systems Tech*	Project (Number/Name) 3438 / *Innovative Naval Prototype (INP) Transition (6.4)*	

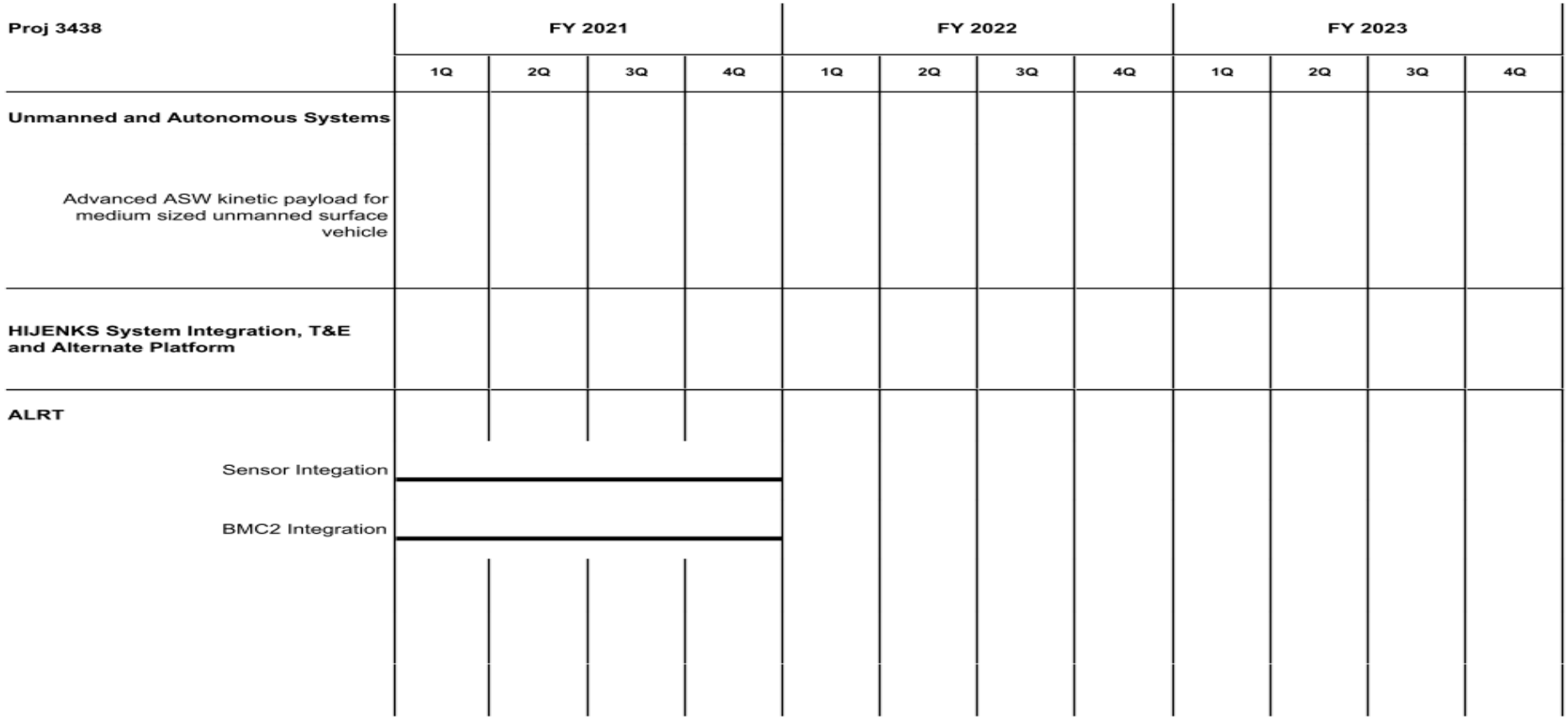
Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ALRT Sensor IntegrationALRT Sensor Integration	C/CPFF	TBD : TBD	0.000	0.311	Jan 2021	0.000		0.000		-		0.000	0.000	0.311	-
Prototype Development	WR	NRL : Washington, DC	0.000	0.000	Oct 2020	0.000		0.000		-		0.000	0.000	0.000	-
		Subtotal	31.455	0.901		0.000		0.000		-		0.000	0.000	32.356	N/A

	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	31.455	0.901		0.000		0.000		-		0.000	0.000	32.356	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603382N / *Advanced Combat Systems Tech*	**Project (Number/Name)** 3438 / *Innovative Naval Prototype (INP) Transition (6.4)*



2023DON - 0603382N - 3438

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603382N / *Advanced Combat Systems Tech*	**Project (Number/Name)** 3438 / *Innovative Naval Prototype (INP) Transition (6.4)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3438				
ALRT: Sensor Integation: Sensor Integration	1	2021	4	2021
ALRT: BMC2 Integration: BMC2 Integration	1	2021	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy			Date: April 2022
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603382N / *Advanced Combat Systems Tech*	Project (Number/Name) 9999 / *Congressional Adds*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
9999: *Congressional Adds*	0.000	0.000	3.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	3.000
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Congressional Interest Items not included in other Projects.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022
Congressional Add: Minotaur data dissemination and interoperability	0.000	3.000
FY 2021 Accomplishments: N/A		
FY 2022 Plans: Conduct Minotaur data dissemination and interoperability.		
Congressional Adds Subtotals	0.000	3.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603382N / *Advanced Combat Systems Tech*	**Project (Number/Name)** 9999 / *Congressional Adds*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TBD	TBD	TBD : TBD	0.000	0.000		3.000	Sep 2022	0.000		-		0.000	0.000	3.000	-
		Subtotal	0.000	0.000		3.000		0.000		-		0.000	0.000	3.000	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		3.000		0.000		-		0.000	0.000	3.000	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603382N / *Advanced Combat Systems Tech*	**Project (Number/Name)** 9999 / *Congressional Adds*

	FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027			
	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
Minotaur data dissemination and interoperability																												
Minotaur data dissemination and interoperability: Minotaur data dissemination and interoperability advanced component development: Component development and demonstration									[redacted]																			

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603382N / *Advanced Combat Systems Tech*	**Project (Number/Name)** 9999 / *Congressional Adds*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Minotaur data dissemination and interoperability				
Minotaur data dissemination and interoperability: Minotaur data dissemination and interoperability advanced component development: Component development and demonstration	4	2021	4	2022