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 0603654N *I JNT Service EOD Development*							
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	769.495	56.569	34.785	36.496	-	36.496	39.109	37.230	34.758	35.144	Continuing	Continuing
0377: *JT Service Expl Ord Disp System*	368.368	10.751	8.960	10.337	-	10.337	12.166	11.775	11.582	11.711	Continuing	Continuing
1317: *Expeditionary Diving Systems*	125.765	2.693	1.965	4.032	-	4.032	4.199	2.277	2.304	2.342	Continuing	Continuing
3177: *Joint Counter Radio-Controlled IED Elec Warfare*	102.183	19.597	15.034	11.061	-	11.061	11.178	10.839	10.937	10.962	Continuing	Continuing
3447: *Mine Expeditionary Response Vehicle (MESR)*	0.000	0.000	8.826	11.066	-	11.066	11.566	12.339	9.935	10.129	Continuing	Continuing
4023: *Expeditionary Underwater Systems*	173.179	23.528	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	196.707

Note

Maritime Expeditionary Standoff Response (MESR) was realigned from Project 4023 into new Project 3447 beginning in FY22. Project 4023 Expeditionary Underwater Systems was relocated from PE 0603654N to PE 0604028N beginning in FY22.

A. Mission Description and Budget Item Justification

This is a Joint Service Program.

This program provides for the development of Explosive Ordnance Disposal tools and equipment aimed at meeting National Defense Strategy guidance to build a more lethal force. The responsibility is assigned to the Navy as single service manager, per Department of Defense Directive 5160.62 of 15 May, 2017, for management of the Joint Service Explosive Ordnance Disposal Research and Development Program.

Proliferation of sophisticated types of foreign and domestic ordnance and Improvised Explosive Devices necessitate a continuing development program to provide Explosive Ordnance Disposal personnel of all military services with the tools and equipment designed for modularity, scalability, and flexibility, while maintaining readiness to respond to contingencies and ensure long-term warfighting readiness.

This program also provides life support related equipment necessary to support the performance of Navy Explosive Ordnance Disposal tasks underwater. This equipment must have inherently low acoustic and magnetic signatures in order to allow the Explosive Ordnance Disposal technician to safely approach, render-safe and dispose of sea mines and other underwater ordnance.

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 0603654N *I JNT Service EOD Development*

This program also supports the National Defense Strategy's objective of preventing terrorist and near peer operations against the US, allies, and partners by providing for the research and development of Electronic Warfare (EW) systems, equipment, procedures, and tactical aids for all military services against the threat posed by Radio-Controlled Improvised Explosive Devices (RCIEDs) and to prevent initiation of RCIEDs across the spectrum of Joint military operations. It utilizes Joint requirements to provide a system of systems approach for a suite
of equipment for mounted, dismounted, and fixed site operations; provides a Joint Counter RCIED EW (CREW) development of equipment, procedures, and tactical aids to make rapid improvements to performance, supportability and affordability, while maintaining pace with the evolving RCIED global threat.

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	57.288	34.785	0.000	-	0.000
Current President's Budget	56.569	34.785	36.496	-	36.496
Total Adjustments	-0.719	0.000	36.496	-	36.496
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.719	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	-	-	36.496	-	36.496

Change Summary Explanation

FY2021: -$0.719M SBIR

FY2022: N/A

FY2023: -$0.847M rate adjustments, -$0.987M underexecution adjustment

---

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 0603654N / *JNT Service EOD Development*	Project (Number/Name) 0377 / *JT Service Expl Ord Disp System*	

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
0377: *JT Service Expl Ord Disp System*	368.368	10.751	8.960	10.337	-	10.337	12.166	11.775	11.582	11.711	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

The FY 2023 funding request was reduced by $0.987M to account for the availability of prior year execution balances.

A. Mission Description and Budget Item Justification

This Program Element (PE) Project (0377) provides funding for the detailed design, development, risk mitigation, issue resolution, integrations, test, test equipment, simulations and technology insertion of specialized equipment, tools and assessment of accessories that expand range of military operations required to support DoD's only Joint Explosive Ordnance Disposal (EOD) programs.

EOD exclusively executes world-wide missions for detection/location, identification, render-safe, recovery, field and laboratory evaluation, and disposal of hazards and unexploded ordnance (UXO) that is a threat to military operations, installations, personnel, or material. UXO includes foreign and domestic, both conventional and non-conventional, including Improvised Explosive Devices (IEDs) and devices using radiological and biological means with or without explosives.

As defined in DOD Directive 5160.62, assigns the Secretary of the Navy (SECNAV) the responsibility of Executive Agent for Explosive Ordnance Disposal (EOD) Technology and Training (T&T) to include the Joint Service Explosive Ordnance Disposal Research and Development Program. EOD programs are designed to reduce the EOD operator's exposure to explosive hazards or limit the risk to an acceptable level. EOD operations range from hand entry of explosive devices by EOD technicians to robotic actions and sensing capabilities that provide a safe distance of the explosive hazard at a greatly reduced cost to trained and experienced EOD operators.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: JOINT EXPLOSIVE ORDNANCE DISPOSAL DECISION SUPPORT SYSTEM (JEOD DSS)	1.450	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2022 Plans: N/A					
FY 2023 Base Plans: N/A					
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 0603654N / *JNT Service EOD Development*	**Project (Number/Name)** 0377 / *JT Service Expl Ord Disp System*

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					
Title: ANALYSIS OF ALTERNATIVES/ EOD MODERNIZATION	8.501	8.387	10.337	0.000	10.337
Articles:	-	-	-	-	-
FY 2022 Plans: EOD Modernization will continue the development of a suite of tools providing the capability for increased standoff distances for Explosives Ordnance Disposal (EOD) Render Safe of Unexploded Ordnance and disruptor of complex and sophisticated threats while reducing risk of injury to the EOD warfighter and enhancing mission success. This effort will be accomplished through evaluation of commercial non-developmental items, analysis of alternatives, and maximized transition of ongoing science and technology opportunities for increased standoff and accuracy of tools and equipment for more precise targeting and disrupt threats. Funds will also support development for Large Area Clearance of Ordnance items and evaluation of mature tools and equipment for mature threats. Transitioning efforts will begin for Silent Saber from Office of Naval Research (ONR) to determine a material solution for a Compact Laser for Explosive Ordnance Disposal (EOD) Neutralization. Silent Saber will be a major part of the Analysis of Alternatives for the Standoff Render Safe and Disrupt (SRSD) Family of Systems (FoS) Capabilities Development Document (CDD).					
FY 2023 Base Plans: EOD Modernization will leverage the results of the Analysis of Alternatives and advances in technology to rapidly assess and field capability solutions through a sets, kits, and outfits approach. Prototype development, testing, user evaluation, and a family of systems approach in FY2023 will begin to close identified capability gaps in EOD Modernization priorities to include: Standoff Render Safe and Disrupt (SRSD), Rapid Large Area Clearance (RLAC), Access Buried Munitions (ABM), and integration of EOD unmanned systems sensors and payloads. Plans include prototype testing, user evaluation of a compact laser neutralization system and program office transition into the SRSD Family of Systems. Funding will support the completion and approval of Capability Development Documents (CDDs) for each of the aforementioned EOD Modernization efforts. Funding also supports the modernization of EOD Unmanned Systems with sensors and payloads integration, testing, and user evaluation/assessment. EOD Modernization efforts include modeling and development of render safe procedures and insertion into associated Joint EOD publications.					
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 0603654N / *JNT Service EOD Development*	**Project (Number/Name)** 0377 / *JT Service Expl Ord Disp System*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Increase in funding supports the development of an acquisition strategy and approach to establish SRSD FoS and RLAC FoS Programs of Record as well as ABM analysis and developmental improvements. Funding also supports the development of an appropriate contract strategy and Request for Proposal (RFP) in accordance with established performance specifications.					
Title: EOD ROBOTICS ***Articles:*** ***FY 2022 Plans:*** EOD Robotics will support development of the training curriculum, required safety analysis, and risk assessment for the robotics platform. ***FY 2023 Base Plans:*** N/A ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Decrease in funding due to re-prioritization of EOD Modernization for the EOD community.	0.800 -	0.573 -	0.000 -	0.000 -	0.000 -
Accomplishments/Planned Programs Subtotals	10.751	8.960	10.337	0.000	10.337

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Joint Service acquisition strategies maximize, to the greatest extent, evolutionary open architecture and modular strategy for rapid acquisition of mature technology for the user. The evolutionary approach delivers baseline capability and subsequent increments, recognizing up front the need for future capability improvements. Each technology insertion is a militarily useful and supportable operational capability that can be developed, produced, deployed, and sustained. The evolutionary strategy allows for rapid block upgrades, pre-planned product improvements, new accessories that expand range of military operations that provide a significant increase in operational capability and improvements at the modular level and encourages competition and second sources to lower life cycle costs. Modeling and simulation can verify system level compliance in a laboratory, greatly reducing the cost to conduct expensive range testing. EOD Modernization increases technology advances for more capable diagnostics and render-safe systems and EOD tools. Contracting for RDT&E, if required, is always competitive and when feasible, production options are included.

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 0603654N / *JNT Service EOD Development*	Project (Number/Name) 0377 / *JT Service Expl Ord Disp System*	

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
Primary Hardware Development	WR	NSWCIHEODTD : Indian Head, MD	197.761	2.315	Nov 2020	3.520	Nov 2021	4.581	Nov 2022	-		4.581	Continuing	Continuing	Continuing
Primary Hardware Development	C/FFP	John Hopkins, MD : Laurel, MD	11.900	0.500	Nov 2020	1.550	Nov 2021	1.033	Oct 2022	-		1.033	0.000	14.983	-
Integrated Logistics Support	WR	NSWCIHEODTD : Indian Head, MD	50.190	0.000	Nov 2020	0.000		0.750	Nov 2022	-		0.750	Continuing	Continuing	Continuing
Primary Software Development	WR	ARL/Army : Aberdeen Proving Ground	3.807	1.748	Nov 2020	0.573	Nov 2021	0.000		-		0.000	0.000	6.128	-
Primary Hardware Development	MIPR	Dept of Energy : Albuquerque, NM	1.200	0.550	Nov 2020	0.500	Nov 2021	0.000		-		0.000	0.000	2.250	-
Primary Hardware Development	TBD	ONR : Washington, DC	0.000	2.500	Nov 2020	1.000	Nov 2021	0.500	Nov 2022	-		0.500	0.000	4.000	-
Primary Hardware Development	WR	NRL : Washington, DC	0.250	0.260	Nov 2020	0.000		0.000		-		0.000	0.000	0.510	-
		Subtotal	265.108	7.873		7.143		6.864		-		6.864	Continuing	Continuing	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
Developmental Test & Evaluation	WR	NSWCIHEODTD : Indian Head, MD	80.019	2.494	Nov 2020	1.417	Nov 2021	2.500	Nov 2022	-		2.500	Continuing	Continuing	Continuing
Operation Test & Evaluation	WR	NSWCIHEODTD : Indian Head, MD	11.583	0.025	Nov 2020	0.200	Nov 2021	0.873	Nov 2022	-		0.873	Continuing	Continuing	Continuing
Operation Test & Evaluation	WR	COMOPTEVFOR : Norfolk, VA	0.125	0.000	Nov 2020	0.000		0.000		-		0.000	0.000	0.125	-
Developmental Test & Evaluation	C/FFP	NRL : Washington, DC	0.100	0.295	Nov 2020	0.200	Nov 2021	0.100	Nov 2022	-		0.100	0.000	0.695	-
		Subtotal	91.827	2.814		1.817		3.473		-		3.473	Continuing	Continuing	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 0603654N / *JNT Service EOD Development*	Project (Number/Name) 0377 / *JT Service Expl Ord Disp System*	

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	WR	NSWCIHEODTD : Indian Head, MD	11.433	0.064	Oct 2020	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
		Subtotal	11.433	0.064		0.000		0.000		-		0.000	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	368.368	10.751		8.960		10.337		-		10.337	Continuing	Continuing	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 0603654N / *JNT Service EOD Development*	**Project (Number/Name)** 0377 / *JT Service Expl Ord Disp System*

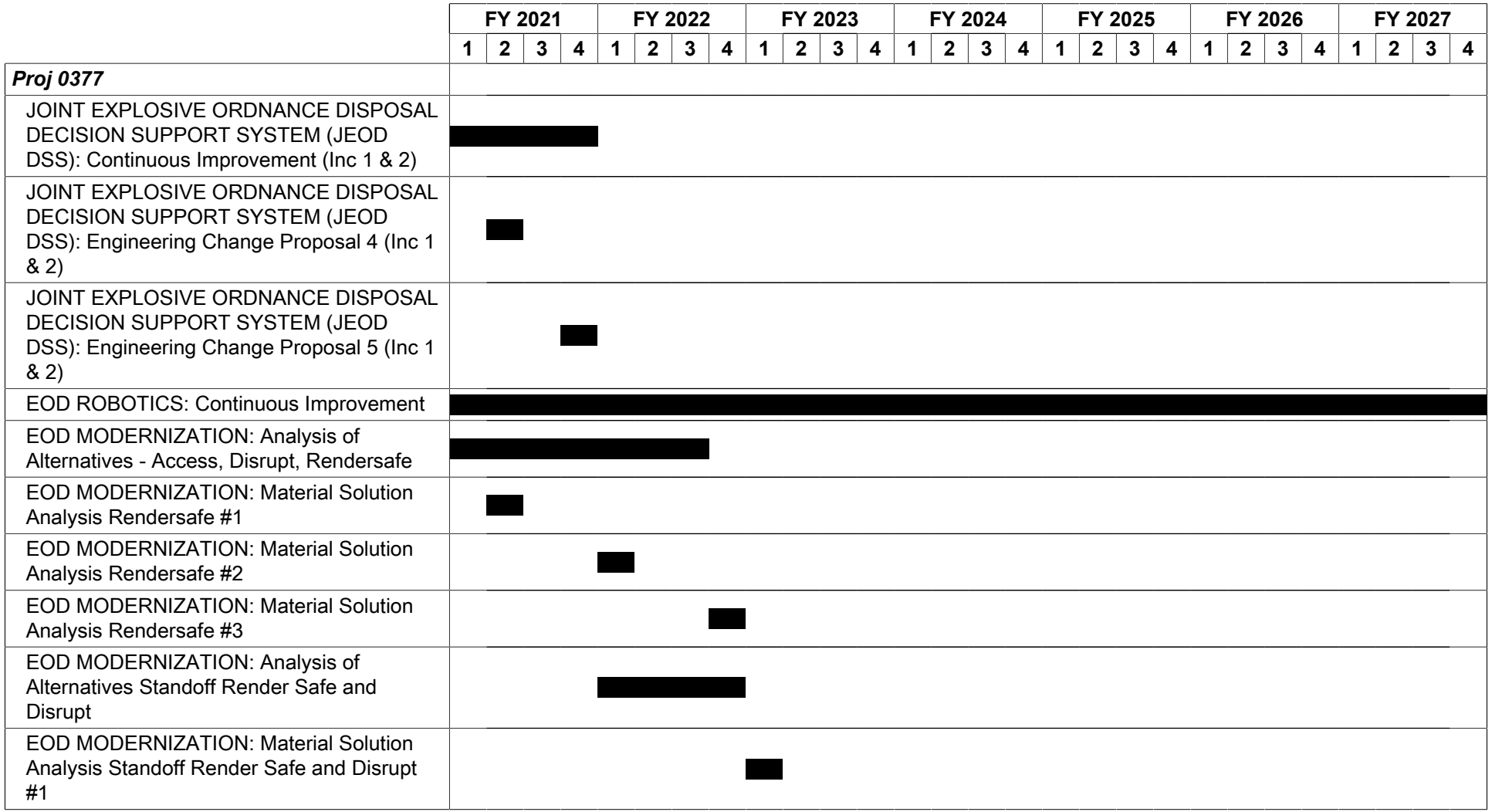

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603654N / *JNT Service EOD Development*	**Project (Number/Name)** 0377 / *JT Service Expl Ord Disp System*

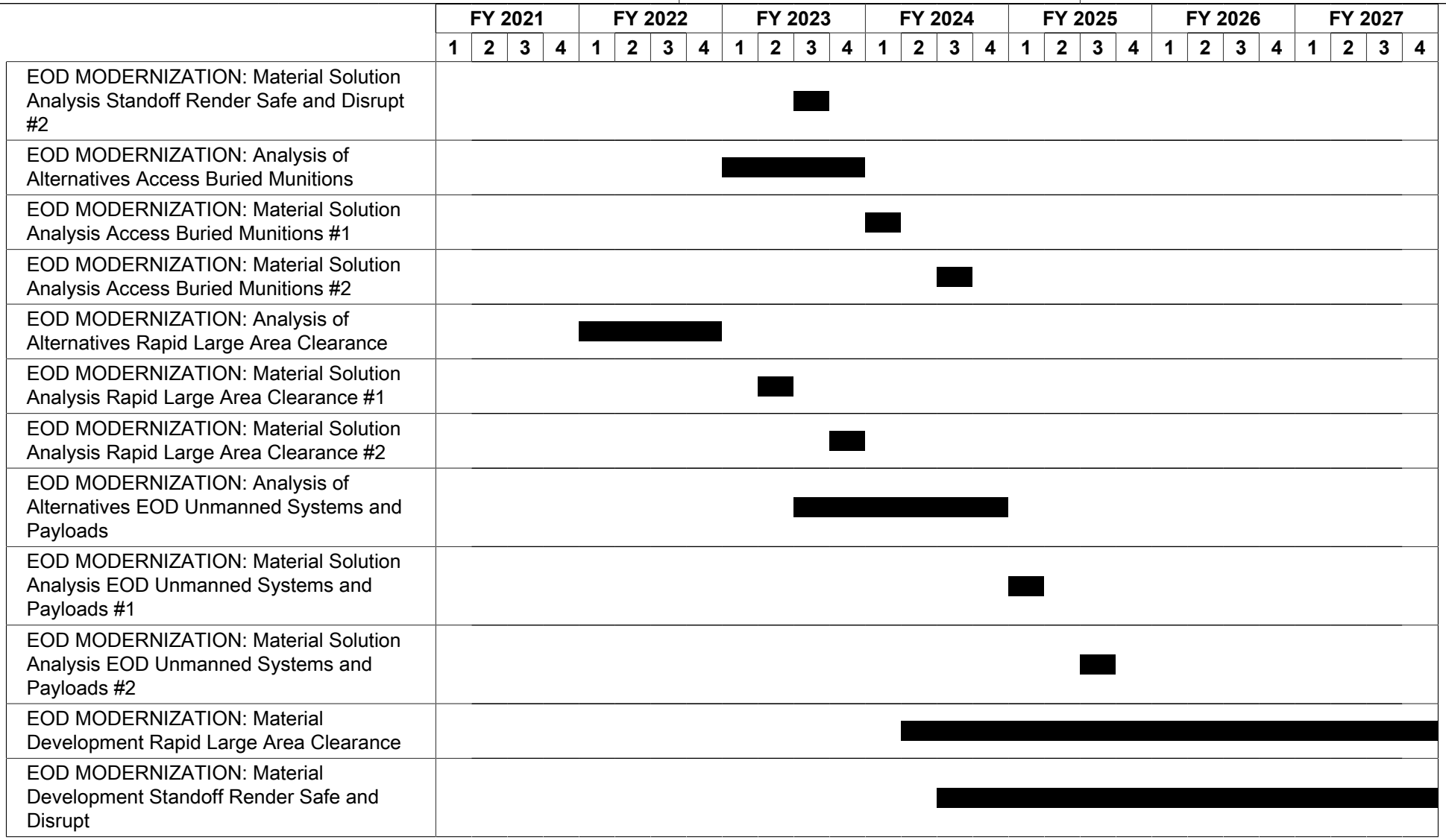

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603654N / *JNT Service EOD Development*	**Project (Number/Name)** 0377 / *JT Service Expl Ord Disp System*

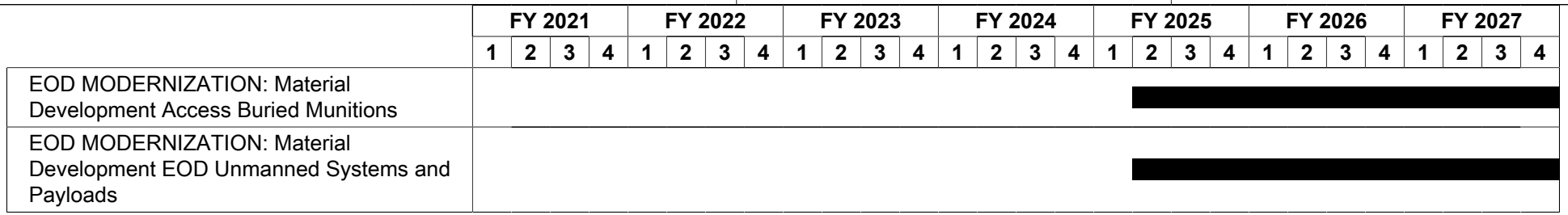

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603654N / *JNT Service EOD Development*	**Project (Number/Name)** 0377 / *JT Service Expl Ord Disp System*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 0377				
JOINT EXPLOSIVE ORDNANCE DISPOSAL DECISION SUPPORT SYSTEM (JEOD DSS): Continuous Improvement (Inc 1 & 2)	1	2021	4	2021
JOINT EXPLOSIVE ORDNANCE DISPOSAL DECISION SUPPORT SYSTEM (JEOD DSS): Engineering Change Proposal 4 (Inc 1 & 2)	2	2021	2	2021
JOINT EXPLOSIVE ORDNANCE DISPOSAL DECISION SUPPORT SYSTEM (JEOD DSS): Engineering Change Proposal 5 (Inc 1 & 2)	4	2021	4	2021
EOD ROBOTICS: Continuous Improvement	1	2021	4	2027
EOD MODERNIZATION: Analysis of Alternatives - Access, Disrupt, Rendersafe	1	2021	3	2022
EOD MODERNIZATION: Material Solution Analysis Rendersafe #1	2	2021	2	2021
EOD MODERNIZATION: Material Solution Analysis Rendersafe #2	1	2022	1	2022
EOD MODERNIZATION: Material Solution Analysis Rendersafe #3	4	2022	4	2022
EOD MODERNIZATION: Analysis of Alternatives Standoff Render Safe and Disrupt	1	2022	4	2022
EOD MODERNIZATION: Material Solution Analysis Standoff Render Safe and Disrupt #1	1	2023	1	2023
EOD MODERNIZATION: Material Solution Analysis Standoff Render Safe and Disrupt #2	3	2023	3	2023
EOD MODERNIZATION: Analysis of Alternatives Access Buried Munitions	1	2023	4	2023
EOD MODERNIZATION: Material Solution Analysis Access Buried Munitions #1	1	2024	1	2024
EOD MODERNIZATION: Material Solution Analysis Access Buried Munitions #2	3	2024	3	2024
EOD MODERNIZATION: Analysis of Alternatives Rapid Large Area Clearance	1	2022	4	2022
EOD MODERNIZATION: Material Solution Analysis Rapid Large Area Clearance #1	2	2023	2	2023
EOD MODERNIZATION: Material Solution Analysis Rapid Large Area Clearance #2	4	2023	4	2023

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 0603654N / *JNT Service EOD Development*	**Project (Number/Name)** 0377 / *JT Service Expl Ord Disp System*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
EOD MODERNIZATION: Analysis of Alternatives EOD Unmanned Systems and Payloads	3	2023	4	2024
EOD MODERNIZATION: Material Solution Analysis EOD Unmanned Systems and Payloads #1	1	2025	1	2025
EOD MODERNIZATION: Material Solution Analysis EOD Unmanned Systems and Payloads #2	3	2025	3	2025
EOD MODERNIZATION: Material Development Rapid Large Area Clearance	2	2024	4	2027
EOD MODERNIZATION: Material Development Standoff Render Safe and Disrupt	3	2024	4	2027
EOD MODERNIZATION: Material Development Access Buried Munitions	2	2025	4	2027
EOD MODERNIZATION: Material Development EOD Unmanned Systems and Payloads	2	2025	4	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 0603654N / *JNT Service EOD Development*	Project (Number/Name) 1317 / *Expeditionary Diving Systems*	

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
1317: *Expeditionary Diving Systems*	125.765	2.693	1.965	4.032	-	4.032	4.199	2.277	2.304	2.342	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

These resources support the development of equipment for the Navy's only comprehensive expeditionary detect to engage and exploitation Mine Countermeasures (MCM) capability. Specifically, it provides for development of Diver Safety/Life Support Equipment, Advanced Diver Integrated Sensors and Command Detonation Systems to support Navy Explosive Ordnance Disposal (EOD) underwater operations, expeditionary salvage, and Expeditionary MCM Company operations. The equipment must have inherently low acoustic and magnetic signatures in order to allow the EOD divers to safely detect, reacquire, approach, render-safe, recover, exploit, and dispose of underwater explosive threats to include sea mines, limpet mines, underwater improvised explosive devices, and unexploded ordnance.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: DIVER SAFETY & LIFE SUPPORT SYSTEMS	1.765	0.822	2.502	0.000	2.502
Articles:	-	-	-	-	-
Description: Diver Safety & Life Support Systems: Develop diving equipment and diver safety tools to include life support systems for Explosive Ordnance Disposal (EOD), Expeditionary Mine Countermeasures (ExMCM), and Mobile Diving & Salvage Units (MDSU) operations. Specific tools include, but are not limited to: Underwater Breathing Apparatus (UBA), specialized dive masks, heads-up displays, emergency life support systems, and the capability to train divers and to evaluate ExMCM tools, tactics and procedures including control of signatures with regard to influence fired ordnance.					
FY 2022 Plans: FY22 efforts will focus on award of the contract to deliver production representative test and evaluation MMUBA units and continuing the testing needed for certification of these units. The combined efforts of unmanned and environmental testing beginning in FY22 and planned manned testing in FY23 are designed to ultimately support a NAVSEA 00C Certification in accordance with NAVSEA SS800-AG-MAN-010 of the selected UBA in early FY24. These evaluations will determine the operational effectiveness and suitability characteristics of the MMUBA.					
FY 2023 Base Plans: FY23 efforts will continue the unmanned and environmental testing that began in FY22. Successful completion of these FY23 test events will lead to the conduct of manned testing in FY23. Testing is critical in demonstrating					

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 0603654N / *JNT Service EOD Development*	**Project (Number/Name)** 1317 / *Expeditionary Diving Systems*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
the safe and effective employment of these life support systems and achieving certification of the manned diving system IAW SS521-AA-MAN-010, U.S. Navy Diving and Manned Hyperbaric Systems Safety Certification Manual for use in the Fleet. A logistics assessment will be conducted in FY23 to verify program lifecycle sustainment plans are in place to support the Knowledge Point (KP) #2 fielding decision. Environmental testing will include magnetic signature characterization and testing in accordance with MIL-DTL-19595D. ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increase of $1.68M from FY2022 due to the increased costs associated with testing of 7 MMUBA rigs along with completing unmanned testing and initiating the manned testing necessary to achieve safety certification prior to fielding any life support systems.					
Title: ADVANCED DIVER INTEGRATED SENSORS (STRIDENT)	0.864	1.024	1.065	0.000	1.065
Articles:	-	-	-	-	-
Description: Develop Advanced Diver Integrated Sensors equipment (STRIDENT) to enable EOD and MDSU ability to detect, access, neutralize and gather intelligence on underwater targets of interest in support of Expeditionary Mine Countermeasures (ExMCM) and Diving and Salvage missions. Requirements include the validated STRIDENT TLR. ***FY 2022 Plans:*** FY22 efforts will focus on continued test and evaluation of candidate Engineering Development Models (EDM) in operationally realistic environments leading to a production decision in FY23. Environmental testing will also be conducted in FY22 as part of DT&E against system performance thresholds. Environmental testing will include magnetic signature characterization and testing in accordance with MIL-DTL-19595D. ***FY 2023 Base Plans:*** FY23 efforts will conclude the developmental test and evaluation events necessary to demonstrate readiness to enter production. Conduct of a supportability review and a user evaluation leading to a Knowledge Point (KP) #2 Production Decision. Acceptance testing of the initial production units will be performed in late FY23 to verify compliance with contractual performance requirements. ***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 0603654N / *JNT Service EOD Development*	**Project (Number/Name)** 1317 / *Expeditionary Diving Systems*

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:*** Increase of $0.041 from FY2022 due to projected slight increase in continued developmental Test & Evaluation necessary to demonstrate capability of the systems to meet system performance specification and TLR thresholds.					
Title: COMMAND DETONATION SYSTEMS ***Articles:*** ***Description:*** Develops next generation of remote underwater firing device to enable EOD technicians to neutralize or otherwise mitigate underwater ordnance hazards from a safe standoff distance. This capability enables a command firing signal to travel from the surface to an in-water receiver to detonate explosive tools ISO ExMCM missions. Improvements from previous underwater firing systems include the ability to encrypt the firing signal. ***FY 2022 Plans:*** Finalize market research to identify candidate Remote Underwater Firing Initiation System (RUFIS) prototypes. Preliminary Weapon System Explosive Safety Review Board (WSESRB) engagement will ensue to evaluate concepts from a safety certification perspective. FY22 pursuit of a Foreign Comparative Test (FCT) initiative will result in candidate evaluations continuing in FY23. ***FY 2023 Base Plans:*** FY23 efforts will continue the evaluation of candidate systems selected from the FCT proposals to demonstrate the potential capability to meet the performance thresholds defined by the RUFIS CDD and prepare for the next round of WSESRB review. FY23 efforts will also include development of the performance specification informed by the results of the market survey and FCT events in preparation for scheduling an industry day in late FY23. ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increase of $0.346M due to costs associated with evaluation of FCT prototypes and development of the performance specification.	0.064 -	0.119 -	0.465 -	0.000 -	0.465 -
Accomplishments/Planned Programs Subtotals	2.693	1.965	4.032	0.000	4.032

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 0603654N / *JNT Service EOD Development*	**Project (Number/Name)** 1317 / *Expeditionary Diving Systems*

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
• OPN/0977a: *Underwater EOD Program (Cost Code UQ034)*	3.619	15.577	23.084	-	23.084	11.060	9.314	0.000	0.000	0.000	94.704

Remarks

D. Acquisition Strategy

Analysis of Alternatives (AOA) studies and/or alternative system reviews (ASRs) are always conducted prior to the initiation of new sub-projects. The AOA/ASR processes address and emphasize acquisition strategies of the most cost-effective solution over the sub-projects life-cycle. The acquisition strategies observe the following hierarchy of alternatives: commercial item (including modification), non-developmental item (including modification), and lastly, developmental programs. Contracting for RDT&E, if required, is always competitive and when feasible, production options are included. Maximum use of innovative contracting mechanisms will be assessed and pursued where applicable and in the best interest of the Navy. For example, this program is executing two of its acquisition efforts through the middle-tier acquisition (MTA) authorities to accelerate fielding of effective and suitable materiel solutions to the fleet.

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 0603654N / *JNT Service EOD Development*	**Project (Number/Name)** 1317 / *Expeditionary Diving Systems*

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
Primary Hardware Development	WR	Multiple Activities : Not Specified	46.315	0.309	Nov 2020	0.200	Nov 2021	0.322	Nov 2022	-		0.322	Continuing	Continuing	Continuing
Software Development	WR	Multiple Activites : Not Specified	6.976	0.180	Nov 2020	0.100	Nov 2021	0.212	Nov 2022	-		0.212	Continuing	Continuing	Continuing
Systems Engineering	WR	NSWCIHEODTD : Indian Head, MD	8.228	0.100	Nov 2020	0.080	Nov 2021	0.164	Nov 2022	-		0.164	0.000	8.572	-
ILS	WR	Multiple Activities : Not Specified	11.916	0.000		0.000		0.000		-		0.000	0.000	11.916	-
Systems Engineering	WR	NSWC : Panama City	4.928	0.630	Nov 2020	0.394	Nov 2021	0.537	Nov 2022	-		0.537	Continuing	Continuing	Continuing
Systems Engineering	WR	NIWC : San Diego	6.741	0.564	Nov 2020	0.395	Nov 2021	0.538	Nov 2022	-		0.538	Continuing	Continuing	Continuing
		Subtotal	85.104	1.783		1.169		1.773		-		1.773	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
Program Management Support2	C/CPFF	PERATON : Herndon VA	9.205	0.310	Nov 2020	0.300	Nov 2021	0.441	Nov 2022	-		0.441	Continuing	Continuing	Continuing
		Subtotal	9.205	0.310		0.300		0.441		-		0.441	Continuing	Continuing	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
Development Test & Evaluation	WR	Multiple Activities : Not Specified	10.436	0.300	Nov 2020	0.205	Nov 2021	1.406	Nov 2022	-		1.406	Continuing	Continuing	Continuing
Operational Test & Evaluation	WR	Multiple Activities : Not Specified	1.560	0.000		0.000		0.000		-		0.000	0.000	1.560	-
		Subtotal	11.996	0.300		0.205		1.406		-		1.406	Continuing	Continuing	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 0603654N / *JNT Service EOD Development*	Project (Number/Name) 1317 / *Expeditionary Diving Systems*	

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

Remarks

Additional funded added in FY23 to enable testing for failed MMUBA rigs.

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	WR	NSWCIHEODTD : Indian Head, MD	12.442	0.300	Nov 2020	0.291	Nov 2021	0.412	Nov 2022	-		0.412	0.000	13.445	-
Miscellaneous	WR	NSWC, Activities : Not Specified	7.005	0.000	Nov 2020	0.000	Nov 2021	0.000		-		0.000	0.000	7.005	-
Acquisition Workforce Fund	Various	Various : Various	0.013	0.000		0.000		0.000		-		0.000	0.000	0.013	-
		Subtotal	19.460	0.300		0.291		0.412		-		0.412	0.000	20.463	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	125.765	2.693		1.965		4.032		-		4.032	Continuing	Continuing	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 0603654N / *JNT Service EOD Development*	**Project (Number/Name)** 1317 / *Expeditionary Diving Systems*

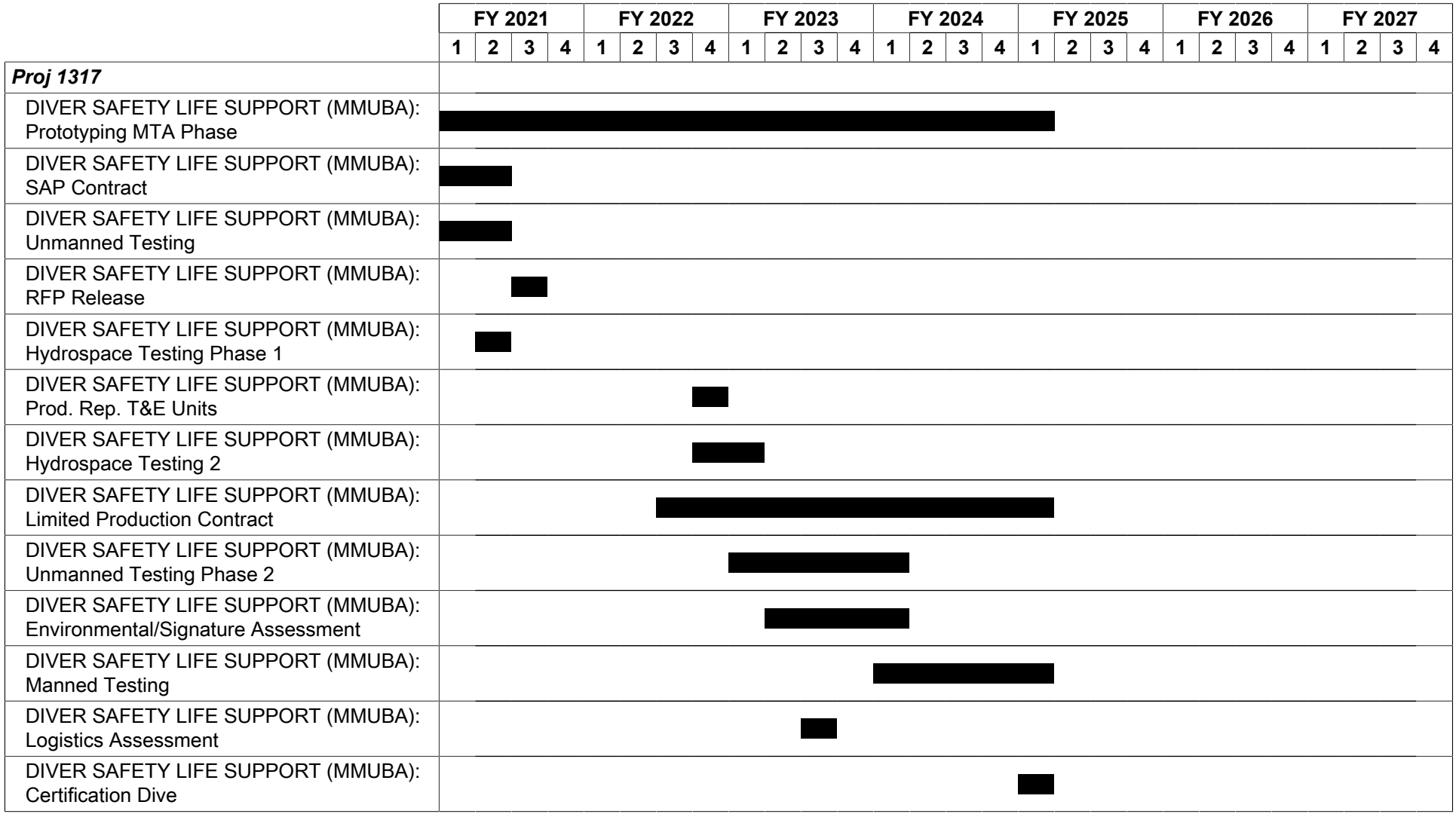

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603654N / *JNT Service EOD Development*	**Project (Number/Name)** 1317 / *Expeditionary Diving Systems*

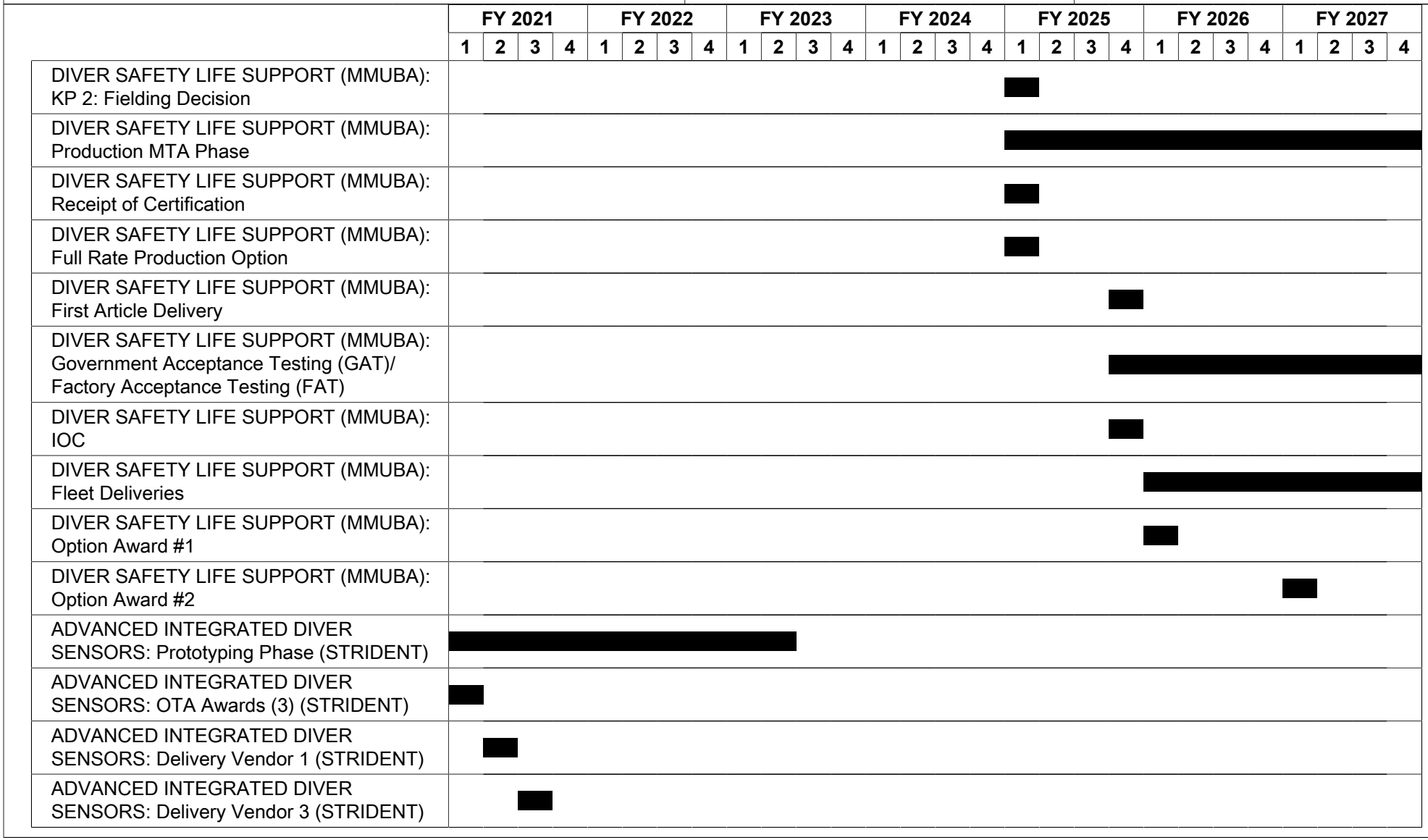

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603654N / *JNT Service EOD Development*	**Project (Number/Name)** 1317 / *Expeditionary Diving Systems*

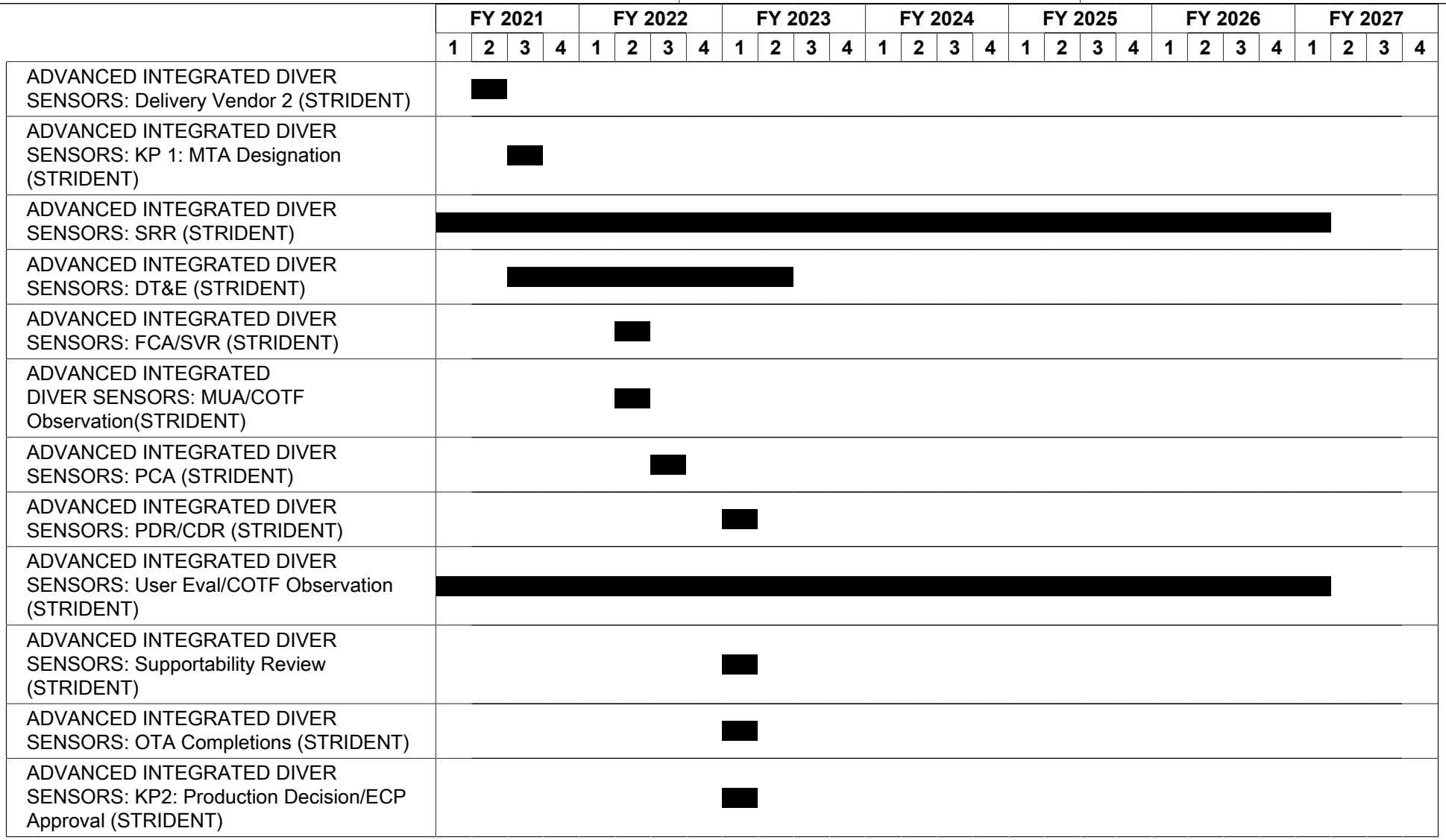

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603654N / *JNT Service EOD Development*	**Project (Number/Name)** 1317 / *Expeditionary Diving Systems*

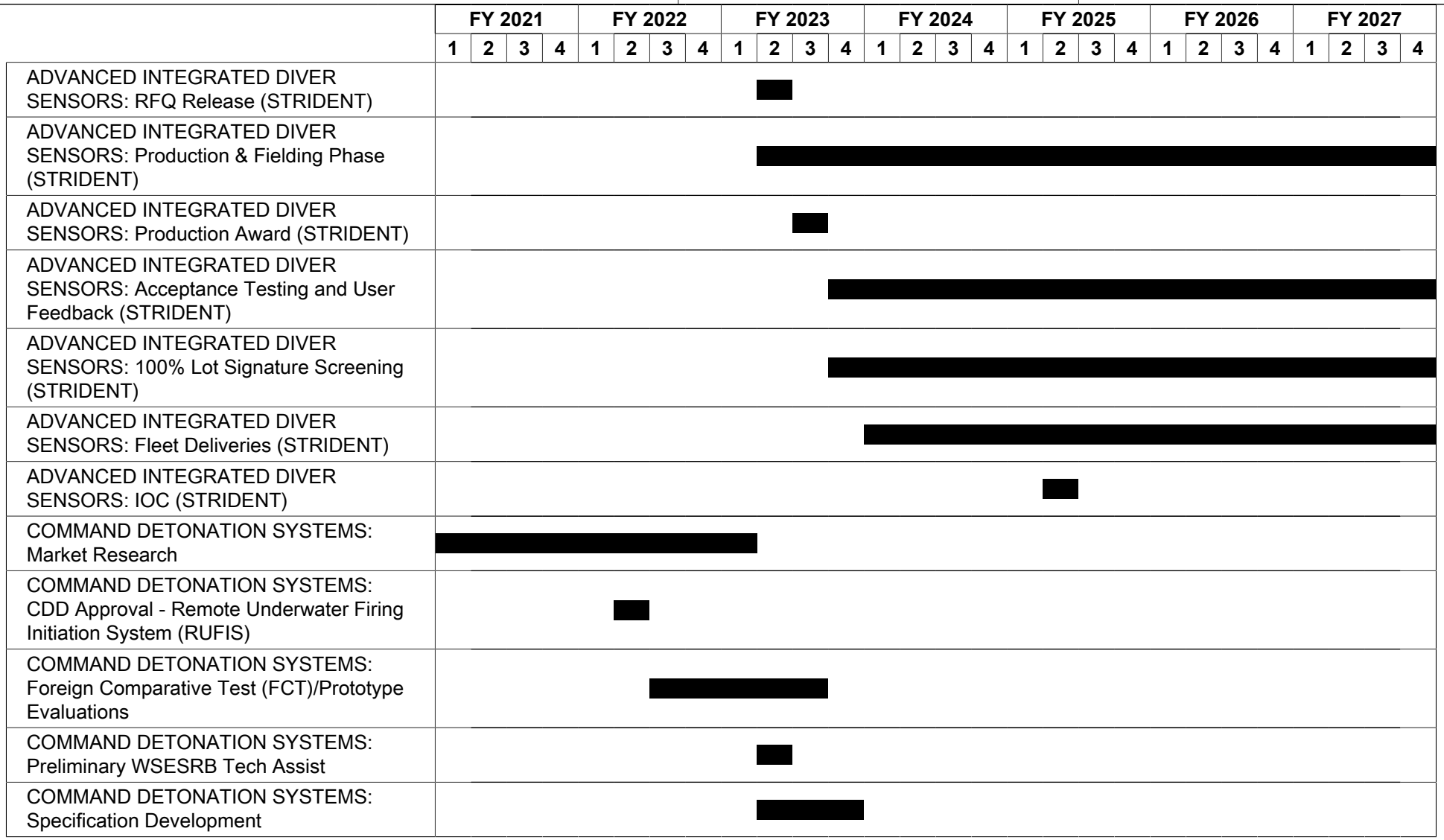

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603654N / *JNT Service EOD Development*	**Project (Number/Name)** 1317 / *Expeditionary Diving Systems*

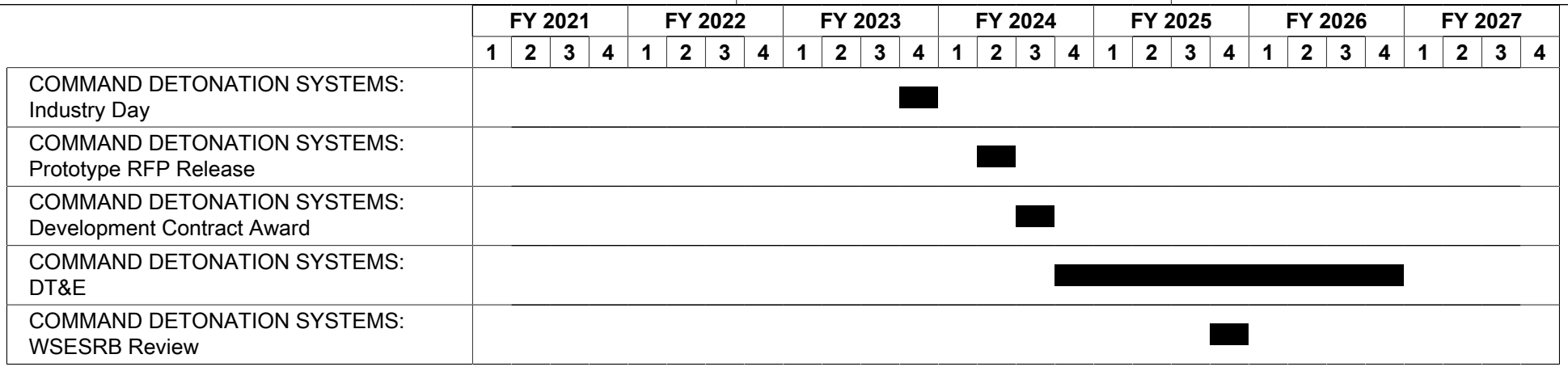

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603654N / *JNT Service EOD Development*	**Project (Number/Name)** 1317 / *Expeditionary Diving Systems*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 1317				
DIVER SAFETY LIFE SUPPORT (MMUBA): Prototyping MTA Phase	1	2021	1	2025
DIVER SAFETY LIFE SUPPORT (MMUBA): SAP Contract	1	2021	2	2021
DIVER SAFETY LIFE SUPPORT (MMUBA): Unmanned Testing	1	2021	2	2021
DIVER SAFETY LIFE SUPPORT (MMUBA): RFP Release	3	2021	3	2021
DIVER SAFETY LIFE SUPPORT (MMUBA): Hydrospace Testing Phase 1	2	2021	2	2021
DIVER SAFETY LIFE SUPPORT (MMUBA): Prod. Rep. T&E Units	4	2022	4	2022
DIVER SAFETY LIFE SUPPORT (MMUBA): Hydrospace Testing 2	4	2022	1	2023
DIVER SAFETY LIFE SUPPORT (MMUBA): Limited Production Contract	3	2022	1	2025
DIVER SAFETY LIFE SUPPORT (MMUBA): Unmanned Testing Phase 2	1	2023	1	2024
DIVER SAFETY LIFE SUPPORT (MMUBA): Environmental/Signature Assessment	2	2023	1	2024
DIVER SAFETY LIFE SUPPORT (MMUBA): Manned Testing	1	2024	1	2025
DIVER SAFETY LIFE SUPPORT (MMUBA): Logistics Assessment	3	2023	3	2023
DIVER SAFETY LIFE SUPPORT (MMUBA): Certification Dive	1	2025	1	2025
DIVER SAFETY LIFE SUPPORT (MMUBA): KP 2: Fielding Decision	1	2025	1	2025
DIVER SAFETY LIFE SUPPORT (MMUBA): Production MTA Phase	1	2025	4	2027
DIVER SAFETY LIFE SUPPORT (MMUBA): Receipt of Certification	1	2025	1	2025
DIVER SAFETY LIFE SUPPORT (MMUBA): Full Rate Production Option	1	2025	1	2025
DIVER SAFETY LIFE SUPPORT (MMUBA): First Article Delivery	4	2025	4	2025
DIVER SAFETY LIFE SUPPORT (MMUBA): Government Acceptance Testing (GAT)/ Factory Acceptance Testing (FAT)	4	2025	4	2027
DIVER SAFETY LIFE SUPPORT (MMUBA): IOC	4	2025	4	2025

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 0603654N / *JNT Service EOD Development*	**Project (Number/Name)** 1317 / *Expeditionary Diving Systems*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
DIVER SAFETY LIFE SUPPORT (MMUBA): Fleet Deliveries	1	2026	4	2027
DIVER SAFETY LIFE SUPPORT (MMUBA): Option Award #1	1	2026	1	2026
DIVER SAFETY LIFE SUPPORT (MMUBA): Option Award #2	1	2027	1	2027
ADVANCED INTEGRATED DIVER SENSORS: Prototyping Phase (STRIDENT)	1	2021	2	2023
ADVANCED INTEGRATED DIVER SENSORS: OTA Awards (3) (STRIDENT)	1	2021	1	2021
ADVANCED INTEGRATED DIVER SENSORS: Delivery Vendor 1 (STRIDENT)	2	2021	2	2021
ADVANCED INTEGRATED DIVER SENSORS: Delivery Vendor 3 (STRIDENT)	3	2021	3	2021
ADVANCED INTEGRATED DIVER SENSORS: Delivery Vendor 2 (STRIDENT)	2	2021	2	2021
ADVANCED INTEGRATED DIVER SENSORS: KP 1: MTA Designation (STRIDENT)	3	2021	3	2021
ADVANCED INTEGRATED DIVER SENSORS: SRR (STRIDENT)	1	2021	1	2027
ADVANCED INTEGRATED DIVER SENSORS: DT&E (STRIDENT)	3	2021	2	2023
ADVANCED INTEGRATED DIVER SENSORS: FCA/SVR (STRIDENT)	2	2022	2	2022
ADVANCED INTEGRATED DIVER SENSORS: MUA/COTF Observation(STRIDENT)	2	2022	2	2022
ADVANCED INTEGRATED DIVER SENSORS: PCA (STRIDENT)	3	2022	3	2022
ADVANCED INTEGRATED DIVER SENSORS: PDR/CDR (STRIDENT)	1	2023	1	2023
ADVANCED INTEGRATED DIVER SENSORS: User Eval/COTF Observation (STRIDENT)	1	2021	1	2027
ADVANCED INTEGRATED DIVER SENSORS: Supportability Review (STRIDENT)	1	2023	1	2023
ADVANCED INTEGRATED DIVER SENSORS: OTA Completions (STRIDENT)	1	2023	1	2023
ADVANCED INTEGRATED DIVER SENSORS: KP2: Production Decision/ECP Approval (STRIDENT)	1	2023	1	2023
ADVANCED INTEGRATED DIVER SENSORS: RFQ Release (STRIDENT)	2	2023	2	2023
ADVANCED INTEGRATED DIVER SENSORS: Production & Fielding Phase (STRIDENT)	2	2023	4	2027
ADVANCED INTEGRATED DIVER SENSORS: Production Award (STRIDENT)	3	2023	3	2023

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 0603654N / *JNT Service EOD Development*	**Project (Number/Name)** 1317 / *Expeditionary Diving Systems*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
ADVANCED INTEGRATED DIVER SENSORS: Acceptance Testing and User Feedback (STRIDENT)	4	2023	4	2027
ADVANCED INTEGRATED DIVER SENSORS: 100% Lot Signature Screening (STRIDENT)	4	2023	4	2027
ADVANCED INTEGRATED DIVER SENSORS: Fleet Deliveries (STRIDENT)	1	2024	4	2027
ADVANCED INTEGRATED DIVER SENSORS: IOC (STRIDENT)	2	2025	2	2025
COMMAND DETONATION SYSTEMS: Market Research	1	2021	1	2023
COMMAND DETONATION SYSTEMS: CDD Approval - Remote Underwater Firing Initiation System (RUFIS)	2	2022	2	2022
COMMAND DETONATION SYSTEMS: Foreign Comparative Test (FCT)/Prototype Evaluations	3	2022	3	2023
COMMAND DETONATION SYSTEMS: Preliminary WSESRB Tech Assist	2	2023	2	2023
COMMAND DETONATION SYSTEMS: Specification Development	2	2023	4	2023
COMMAND DETONATION SYSTEMS: Industry Day	4	2023	4	2023
COMMAND DETONATION SYSTEMS: Prototype RFP Release	2	2024	2	2024
COMMAND DETONATION SYSTEMS: Development Contract Award	3	2024	3	2024
COMMAND DETONATION SYSTEMS: DT&E	4	2024	4	2026
COMMAND DETONATION SYSTEMS: WSESRB Review	4	2025	4	2025

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 0603654N / *JNT Service EOD Development*	Project (Number/Name) 3177 / *Joint Counter Radio-Controlled IED Elec Warfare*	

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
3177: *Joint Counter Radio-Controlled IED Elec Warfare*	102.183	19.597	15.034	11.061	-	11.061	11.178	10.839	10.937	10.962	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Funding for the DRAKE Counter Unmanned Aircraft Systems (CUAS) moved to PE 0604636N/Project 2073 beginning in FY23.

A. Mission Description and Budget Item Justification

This project supports the defense objective of preventing terrorist and near peer operations against the US, allies, and partners. It provides for the research and development of Electronic Warfare (EW) systems, equipment, procedures, and tactical aids for all military services to counter the threat posed by Radio-Controlled Improvised Explosive Devices (RCIEDs) and to prevent initiation of RCIEDs across the spectrum of Joint military operations. It utilizes Joint requirements to provide a system of systems approach for a suite of equipment for mounted, dismounted, and fixed site operations, and develops equipment, procedures, and tactical aids to make rapid improvements to performance, supportability and affordability, while maintaining pace with the evolving global RCIED threat.

Joint Counter RCIED electronic Warfare (JCREW), Increment 1 Block 1 (I1B1) is the next generation of counter RCIED system of systems. JCREW includes fixed site, mounted and dismounted units, which provide countermeasures against the global RCIED threat. Key system design features include significant performance increases over current legacy systems, a modular open architecture system design to facilitate improvements to address current and future advanced threats, robust information assurance and security, and is net-capable for improved Communications and Control (C2). JCREW I1B1 supports global deployment and sustainment for all combatant commands providing increased protection to Warfighter against the evolving worldwide RCIED threats. This project also provides for the research, development, and systems engineering of related CREW systems, providing capability improvements to fielded systems based on ever-changing RCIED threats against EOD technicians. And it provides for research, development, and systems engineering of electronic forensic capabilities related to the technical exploitation of asymmetric threats, including RCIEDs, unmanned systems, and underwater mines. The information generated is used to increase the performance of CREW and other counter-IED systems, as well as enable development of new countermeasure capabilities.

This project also provides for continued development and testing of JCREW Counter-Unmanned Aerial System (C-UAS) capabilities to support Fleet Forces Command C-UAS requirements. This includes the modification of JCREW hardware, software, threat loads, and advanced techniques, integration into JCREW systems, lab verification, and open air testing. Fielded JCREW systems will be upgraded with modified hardware, software and threat loads to keep pace with the evolving C-UAS threat.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Joint Counter Radio-Controlled IED Elec Warfare	17.641	13.754	10.595	0.000	10.595
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 0603654N / *JNT Service EOD Development*	**Project (Number/Name)** 3177 / *Joint Counter Radio-Controlled IED Elec Warfare*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Description: Supports the development, integration and test of Technology Insertion hardware, software, and advanced techniques into JCREW systems. Technology Insertion candidates include Office of Naval Research (ONR) sponsored technologies ready for transition to JCREW including the ENabling Dynamic Operational RF (ENDOR) Future Naval Capability (FNC); and techniques, hardware and software performance improvements developed by United States Government (USG) laboratories, Federally Funded Research and Development Centers (FFRDCs), University Affiliated Research Centers (UARCs), and the JCREW prime contractor. Analysis of Alternatives (AoA) will be conducted to evaluate and select Tech Insertion candidates based on technical maturity, cost, and performance. Hardware and software updates will be integrated, tested, and implemented into CREW systems through Engineering Change Proposals (ECPs). Develop CREW load sets to remain current with continually changing CONUS and OCONUS threats. Develop hardware and software capabilities to enable enhanced cyber and electronics forensics and exploitation of evolving RCIED threats. ***FY 2022 Plans:*** Continue technology insertion package 3 efforts, including testing of the NextGen SDR prototypes and building the production validation modules, and completing Control Display Unit (CDU) 2.0 phase 3 development and integration for C-IED and C-UAS. Continue development and integration of Technology Insertion package 4 efforts, including the Office of Naval Research Future Naval Capability Electronic Warfare Operating Kit (EWOK) and continuing advanced technique development for advanced C-IED and C-UAS threats. ***FY 2023 Base Plans:*** Complete Technology Insertion Package 3 efforts, including the integration and test of NextGen SDR production validation modules, and Phase 4 of the CDU 2.0. Transition the Office of Naval Research Future Naval Capability Electronic Warfare Operating Kit (EWOK) to PMS408 and begin full integration with the NextGen SDR software. Continue development of several advanced techniques for dismounted and mounted JCREW I1B1 systems to stay current with CONUS and OCONUS threats. Continue to provide systems engineering for JCREW Technology Insertion. ***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 0603654N / *JNT Service EOD Development*	**Project (Number/Name)** 3177 / *Joint Counter Radio-Controlled IED Elec Warfare*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
JCREW funding decrease in FY23 is due to funding transfer to a unique CUAS project line in support of DRAKE. DRAKE Counter Unmanned Aircraft Systems (CUAS) funding moved to PE 0604636N/Project 2073 beginning in FY23.					
Title: EOD CREW ***Articles:*** ***FY 2022 Plans:*** Provide systems engineering support for EOD CREW systems. Develop AN/PLT-5 load sets to remain current with continually changing CONUS and OCONUS threats. Develop and validate AN/PLT-4 replacement requirements. ***FY 2023 Base Plans:*** Provide systems engineering support for EOD CREW systems. Develop AN/PLT-5 load sets to remain current with continually changing CONUS and OCONUS threats. Develop and validate AN/PLT-4 replacement requirements. ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** No Significant Change.	0.933 -	0.452 -	0.466 -	0.000 -	0.466 -
Title: HEMLOCK ***Articles:*** ***FY 2022 Plans:*** Refine hardware and software capabilities to enable enhanced cyber and electronics forensics and exploitation of evolving RCIED threats. Finalize Hybrid report upgrade, adding Lexicon increment. Refine stand-alone Helmsman platform (plugin) to interface w/non-Hodor user databases. Develop hardware and software capabilities to enable enhanced cyber and electronics forensics and exploitation of evolving RCIED threats. Further information available at a higher classification.	1.023 -	0.828 -	0.000 -	0.000 -	0.000 -

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 0603654N / *JNT Service EOD Development*	**Project (Number/Name)** 3177 / *Joint Counter Radio-Controlled IED Elec Warfare*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Project completes in FY22. The Hemlock program is no longer required by the Navy's Expeditionary Exploitation Unit ONE to conduct one of its assigned mission of weapons electronics exploitation. ***FY 2023 Base Plans:*** N/A ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** There are no further Navy requirements for the Hemlock program.					
Accomplishments/Planned Programs Subtotals	19.597	15.034	11.061	0.000	11.061

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
• OPN/5509(b): *Explosive Ordnance Disposal Equip*	0.877	0.894	20.912	-	20.912	20.931	0.950	0.000	0.000	0.000	206.567

Remarks

D. Acquisition Strategy

Develop, integrate, test, and field hardware and software upgrades, and advanced techniques in JCREW systems through the JCREW Technology Insertion and Technology Refresh process. Technology insertion candidates include the Office of Naval Research (ONR) the ENabling Dynamic Operational RF (ENDOR) Future Naval Capability (FNC); and techniques, hardware and software performance improvements developed by United States Government (USG) laboratories, Federally Funded Research and Development Centers (FFRDCs), University Affiliated Research Centers (UARCs), and the JCREW prime contractor. Analysis of Alternatives (AoA) will be conducted to evaluate and select Tech Insertion candidates based on technical maturity, cost, and performance. Hardware and software updates will be integrated, tested, and implemented in JCREW via Engineering Change Proposals (ECPs). This also supports the rapid development and testing of JCREW Counter-Unmanned Aerial System (C-UAS) for Fleet Forces Command C-UAS requirements and the CUAS Afloat Top Level Requirements.

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 0603654N / *JNT Service EOD Development*	**Project (Number/Name)** 3177 / *Joint Counter Radio-Controlled IED Elec Warfare*

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
Primary Hardware Development	C/CPFF	Northrop Grumman/ TBD : San Diego, CA	18.930	3.518	Jan 2021	2.749	Jan 2022	2.346	Jan 2023	-		2.346	Continuing	Continuing	Continuing
Systems Engineering	C/CPFF	Northrop Grumman/ TBD : San Diego, CA	10.993	1.714	Jan 2021	1.370	Jan 2022	1.394	Jan 2023	-		1.394	Continuing	Continuing	Continuing
Software Development	C/CPFF	Northrop Grumman/ TBD : San Diego, CA	11.755	2.185	Jan 2021	1.670	Jan 2022	1.489	Jan 2023	-		1.489	Continuing	Continuing	Continuing
System Integration	C/CPFF	Northrop Grumman/ TBD : San Diego, CA	6.746	1.588	Jan 2021	1.227	Jan 2022	0.963	Jan 2023	-		0.963	Continuing	Continuing	Continuing
		Subtotal	48.424	9.005		7.016		6.192		-		6.192	Continuing	Continuing	N/A

Remarks

FY22 to FY23 decrease based on completion of the integration and testing of the NextGen SDR module hardware and software in mid-FY23, and removal of CUAS product development into a new budget line; while continuing CIED advanced threat technique development for current threats and technical insertion 4 development.

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
Loadset Development	FFRDC	JHU/APL : Laurel, MD	8.496	1.425	Nov 2020	1.134	Nov 2021	0.792	Nov 2022	-		0.792	Continuing	Continuing	Continuing
Systems Engineering	WR	NSWC : Various	20.569	3.466	Nov 2020	2.674	Nov 2021	1.804	Nov 2022	-		1.804	Continuing	Continuing	Continuing
Program Management Support	WR	IHEODTD : Indian Head, MD	2.853	0.621	Nov 2020	0.475	Nov 2021	0.346	Nov 2022	-		0.346	Continuing	Continuing	Continuing
		Subtotal	31.918	5.512		4.283		2.942		-		2.942	Continuing	Continuing	N/A

Remarks

FY22 to FY23 decrease based on the removal of CUAS load set development, systems engineering, and program management support into a new budget line.

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 0603654N / *JNT Service EOD Development*	**Project (Number/Name)** 3177 / *Joint Counter Radio-Controlled IED Elec Warfare*

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	WR	NSWC : Various	10.554	2.122	Nov 2020	1.741	Nov 2021	1.132	Nov 2022	-		1.132	Continuing	Continuing	Continuing
Test & Evaluation	MIPR	YPG : Yuma, Arizona	8.058	1.913	Nov 2020	1.309	Nov 2021	0.795	Nov 2022	-		0.795	Continuing	Continuing	Continuing
		Subtotal	18.612	4.035		3.050		1.927		-		1.927	Continuing	Continuing	N/A

Remarks

FY22 to FY23 decrease based on the removal of CUAS test and evaluation into a new budget line.

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/CPFF	Cydecor : Various	1.365	0.430	Nov 2020	0.286	Nov 2021	0.000		-		0.000	Continuing	Continuing	Continuing
Miscellaneous	WR	NSWC : Various	1.864	0.615	Nov 2020	0.399	Nov 2021	0.000		-		0.000	Continuing	Continuing	Continuing
		Subtotal	3.229	1.045		0.685		0.000		-		0.000	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	102.183	19.597		15.034		11.061		-		11.061	Continuing	Continuing	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 0603654N / *JNT Service EOD Development*	**Project (Number/Name)** 3177 / *Joint Counter Radio-Controlled IED Elec Warfare*

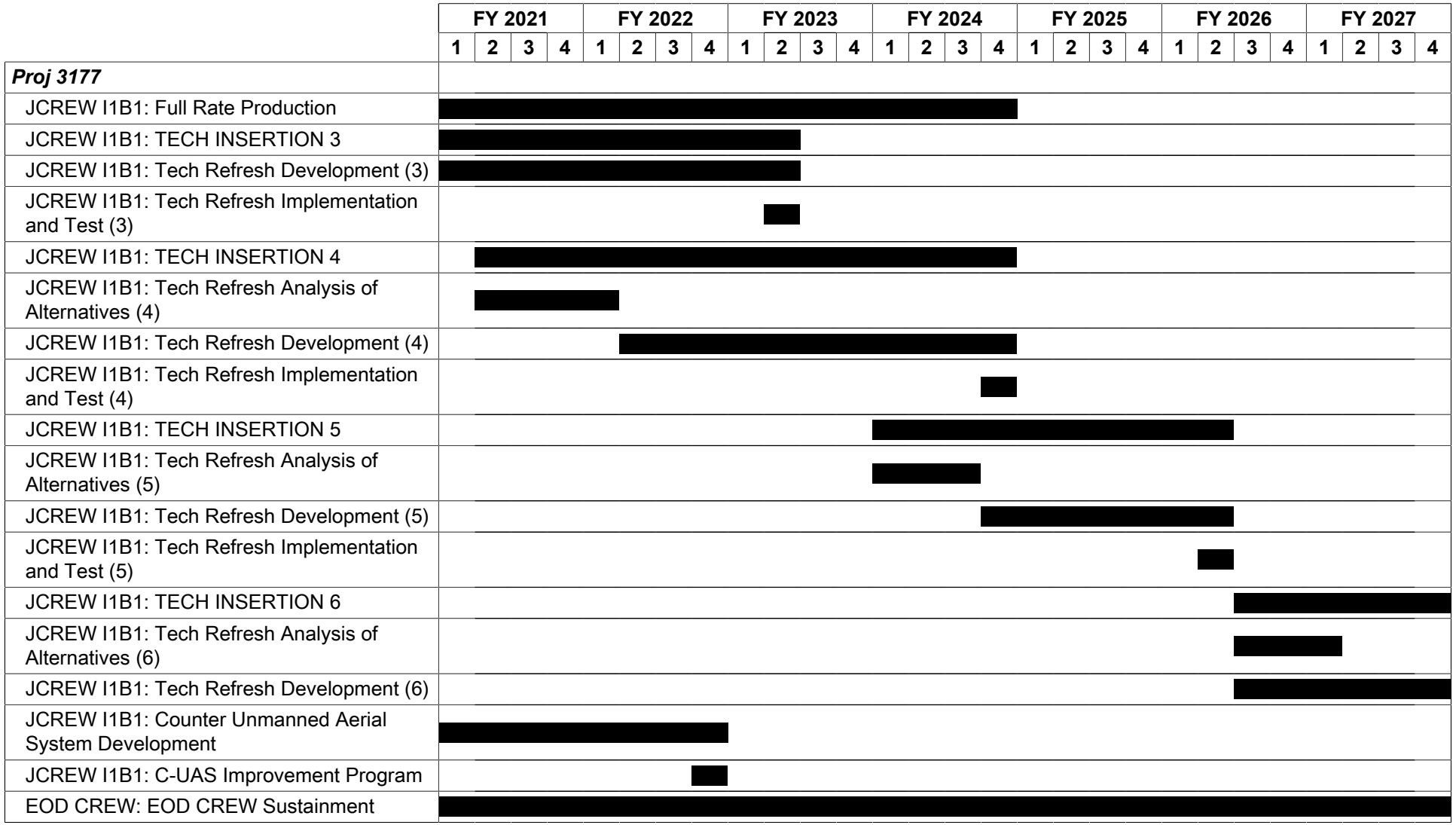

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603654N / *JNT Service EOD Development*	**Project (Number/Name)** 3177 / *Joint Counter Radio-Controlled IED Elec Warfare*

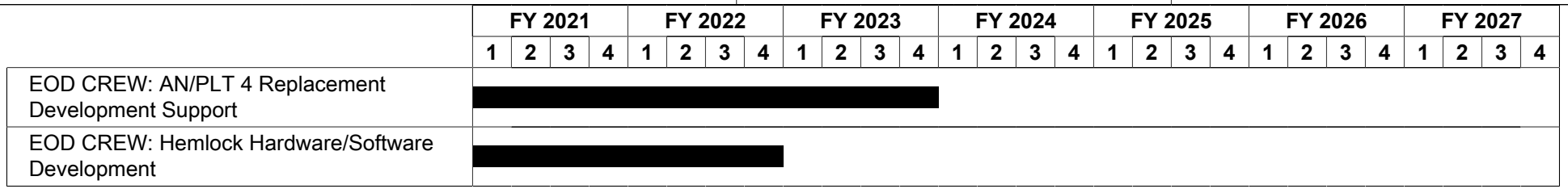

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603654N / *JNT Service EOD Development*	**Project (Number/Name)** 3177 / *Joint Counter Radio-Controlled IED Elec Warfare*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3177				
JCREW I1B1: Full Rate Production	1	2021	4	2024
JCREW I1B1: TECH INSERTION 3	1	2021	2	2023
JCREW I1B1: Tech Refresh Development (3)	1	2021	2	2023
JCREW I1B1: Tech Refresh Implementation and Test (3)	2	2023	2	2023
JCREW I1B1: TECH INSERTION 4	2	2021	4	2024
JCREW I1B1: Tech Refresh Analysis of Alternatives (4)	2	2021	1	2022
JCREW I1B1: Tech Refresh Development (4)	2	2022	4	2024
JCREW I1B1: Tech Refresh Implementation and Test (4)	4	2024	4	2024
JCREW I1B1: TECH INSERTION 5	1	2024	2	2026
JCREW I1B1: Tech Refresh Analysis of Alternatives (5)	1	2024	3	2024
JCREW I1B1: Tech Refresh Development (5)	4	2024	2	2026
JCREW I1B1: Tech Refresh Implementation and Test (5)	2	2026	2	2026
JCREW I1B1: TECH INSERTION 6	3	2026	4	2027
JCREW I1B1: Tech Refresh Analysis of Alternatives (6)	3	2026	1	2027
JCREW I1B1: Tech Refresh Development (6)	3	2026	4	2027
JCREW I1B1: Counter Unmanned Aerial System Development	1	2021	4	2022
JCREW I1B1: C-UAS Improvement Program	4	2022	4	2022
EOD CREW: EOD CREW Sustainment	1	2021	4	2027
EOD CREW: AN/PLT 4 Replacement Development Support	1	2021	4	2023
EOD CREW: Hemlock Hardware/Software Development	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 0603654N / *JNT Service EOD Development*	Project (Number/Name) 3447 / *Mine Expeditionary Response Vehicle (MESR)*	

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
3447: *Mine Expeditionary Response Vehicle (MESR)*	0.000	0.000	8.826	11.066	-	11.066	11.566	12.339	9.935	10.129	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

MESR realigned from Project 4023 beginning in FY22

A. Mission Description and Budget Item Justification

Funding supports the development of unmanned systems for the Navy's expeditionary unmanned underwater Explosive Ordnance Disposal (EOD) and Mine Countermeasures (MCM) capability. Specifically, it provides for development of affordable expeditionary remote stand-off underwater systems to support Navy Expeditionary forces including EOD, Mobile Diving and Salvage, Underwater Construction Teams (UCT), and Expeditionary Mine Countermeasures (ExMCM) mission operations. The equipment must be highly portable in order to support the Navy EOD technician to safely detect, approach, render safe, recover, exploit, and dispose of underwater explosive threats to include sea mines, limpet mines, maritime IEDs, and unexploded ordnance. Provides support for the Navy's high priority missions of Maritime Homeland Defense and MCM. This project directly supports Department of the Navy Strategic Roadmap for Unmanned Systems promulgated in March 2018 and addresses capability gaps defined by the Joint Service EOD (JSEOD) Initial Capabilities Document (ICD), Serial Number 671-75-05 of 3 June 2005, Joint Improvised Explosive Device (IED) Defeat Initial Capabilities Document (ICD) of 23 February 2006/JROCM 070-06, and the Expeditionary MCM ICD of June 2017. This project is being executed in accordance with approved CNO N9I Requirement #056-95-19, "Capability Development Document (CDD) for Maritime Expeditionary Standoff Response Family of Systems (MESR)," July 23, 2019.

Additional efforts continue to execute the open competition process necessary to acquire and verify an EOD Response ROV capability focusing on user effectiveness and operational suitability to provide a ROV based target interdiction capability to address the capability gaps assessed in the previously conducted Expeditionary UUV Neutralization System (EUNS) AoA. This next generation capability is developed to decrease risk when reacquiring/investigating a potential threat (i.e. sea mine or maritime IED).

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: EOD Response ROVs and Maritime Expeditionary Standoff Response System of Systems	0.000	8.826	11.066	0.000	11.066
Articles:	-	-	-	-	-
Description: This program supports development, testing and evaluation of technologies and commercial systems that will provide needed capabilities to EOD and Expeditionary forces in responding to the wide range of underwater threats and operational environments encountered in assigned mission areas to include: confined					

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 0603654N / *JNT Service EOD Development*	**Project (Number/Name)** 3447 / *Mine Expeditionary Response Vehicle (MESR)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
areas, hulls, piers and pilings to detect, search, classify, map, re-acquire, identify, and neutralize sea and limpet mines and underwater improvised explosive devices. ***FY 2022 Plans:*** FY22 efforts will focus on evaluating the operational effectiveness and suitability of the MESR engineering development models that have integrated various payloads to demonstrate potential MESR Increment I performance in accordance with CDD thresholds. Additional efforts in FY22 will focus on DIU cooperative autonomy project and ensuring system design considers cybersecurity compliance, achieving initial Weapon System Explosive Safety Review Board (WSESRB) concurrence, incorporating advances in autonomous behaviors, and conducting evaluations in operationally realistic environments. FY22 efforts will also include conduct of platform environmental testing and conduct of an Alternative System Review (ASR) to inform conceptual design and development of future MESR capability increments. ***FY 2023 Base Plans:*** FY23 efforts will focus on completion of the platform and payload integration testing leading to the Critical Design Review (CDR). Following a successful CDR, full system test and evaluation will be conducted to demonstrate complete compliance with the MESR Increment I CDD KPP thresholds and system performance specification requirements. Environmental testing will also be conducted in FY23 to verify ability to withstand the operational and physical environments in which the system will be employed. ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increase of $2.24M from FY2022 due to a significant ramp up of payload development efforts leading to system level integration testing and evaluation. There is an enhanced level of test and evaluation and integration costs associated with actions needed to achieve WSESRB concurrence to conduct testing and integration of energetic payloads onto candidate MESR Increment I platforms.					
Accomplishments/Planned Programs Subtotals	0.000	8.826	11.066	0.000	11.066

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

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 0603654N / *JNT Service EOD Development*	**Project (Number/Name)** 3447 / *Mine Expeditionary Response Vehicle (MESR)*

D. Acquisition Strategy

Analysis of Alternatives (AOA) studies and/or Alternative System Reviews (ASRs) are conducted prior to the initiation of new sub-projects. The AOA addresses and emphasizes acquisitions strategies of the most cost effective solution over the sub-projects' life-cycle. The acquisition strategies observe the following hierarchy of alternatives: commercial item (including modifications), non-developmental item (including modifications), and lastly, developmental programs. Contracting for RDT&E, if required, is competitive and when feasible, production options are included. This ongoing program capitalizes on a User Operational Evaluation System (UOES) effort involving Fleet operators engaged in tactical experimentation with prototype EOD Response vehicles prior to fielding baseline systems and capability improvement package increments. Operational capabilities with ROVs have been realized at designated operational units, using a competitive, innovative acquisition strategy. The addition of enhanced capabilities through an evolutionary acquisition approach to the EOD Response toolbox is programmed for delivery in accordance with approved CNO requirements and ONR Technology Deployment Agreements (TDAs) which close capability gaps. Further improvements to the toolbox to add basic mine and underwater explosive threats neutralization capabilities will continue to be pursued, including expansion of EOD Response capabilities employing Remotely Operated Vehicles (ROVs) in areas where current UUVs cannot operate. Streamlined acquisition initiatives are in place to quickly evaluate candidate EOD response capabilities while the longer term MESR Family of Systems is developed. A key attribute for these systems is minefield suitability and control of system signatures to counter influence fired ordnance. Influence signatures of subject ROVs will be characterized as a vital component of the acquisition initiatives. Maximum use of innovative contracting mechanisms will be assessed and pursued where applicable and in the best interest of the Navy.

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 0603654N / *JNT Service EOD Development*	**Project (Number/Name)** 3447 / *Mine Expeditionary Response Vehicle (MESR)*

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
Primary Hardware Development	WR	Various : Not Specified	0.000	0.000		1.228	Nov 2021	1.364	Nov 2022	-		1.364	Continuing	Continuing	Continuing
System Engineering	WR	Various : Not Specified	0.000	0.000		2.860	Nov 2021	3.920	Nov 2022	-		3.920	Continuing	Continuing	Continuing
		Subtotal	0.000	0.000		4.088		5.284		-		5.284	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
Technical Support	C/CPFF	PERATON : Herndon, VA	0.000	0.000		0.450	Nov 2021	0.564	Nov 2022	-		0.564	Continuing	Continuing	Continuing
		Subtotal	0.000	0.000		0.450		0.564		-		0.564	Continuing	Continuing	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
Developmental Test & Evaluation	WR	VARIOUS : Not Specified	0.000	0.000		4.288	Nov 2021	5.218	Nov 2022	-		5.218	Continuing	Continuing	Continuing
		Subtotal	0.000	0.000		4.288		5.218		-		5.218	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	0.000	0.000		8.826		11.066		-		11.066	Continuing	Continuing	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 0603654N / *JNT Service EOD Development*	**Project (Number/Name)** 3447 / *Mine Expeditionary Response Vehicle (MESR)*

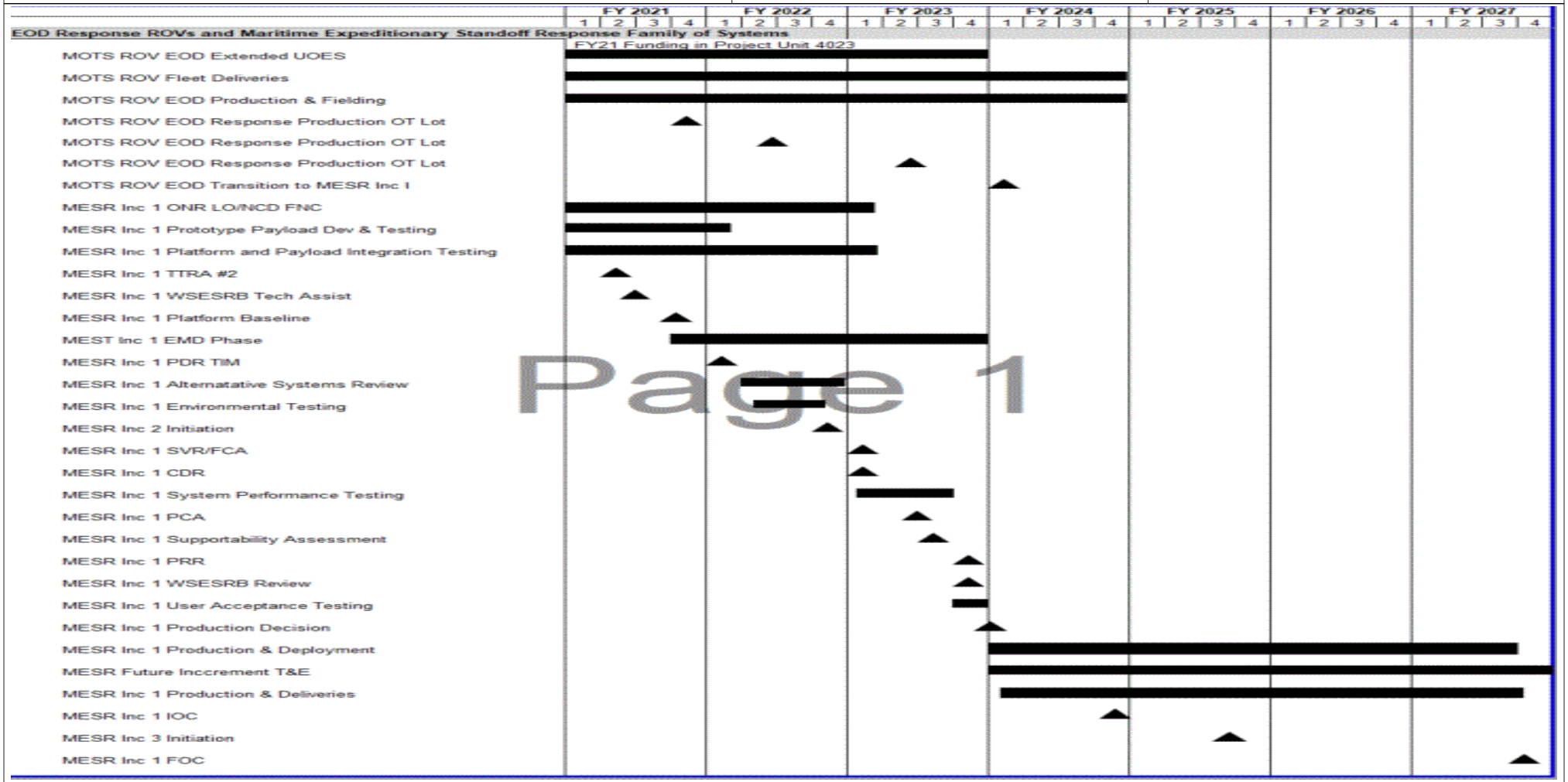

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603654N / *JNT Service EOD Development*	**Project (Number/Name)** 3447 / *Mine Expeditionary Response Vehicle (MESR)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3447				
EOD Response ROVs and Maritime Expeditionary Standoff Response Family of Systems: MOTS ROV EOD Extended UOES	1	2021	4	2023
EOD Response ROVs and Maritime Expeditionary Standoff Response Family of Systems: MOTS ROV Fleet Deliveries	1	2021	4	2024
EOD Response ROVs and Maritime Expeditionary Standoff Response Family of Systems: MOTS ROV EOD Production & Fielding	1	2021	4	2024
EOD Response ROVs and Maritime Expeditionary Standoff Response Family of Systems: MOTS ROV EOD Response Production Lot Award 2	4	2021	4	2021
EOD Response ROVs and Maritime Expeditionary Standoff Response Family of Systems: MOTS ROV EOD Response Production Lot Award 3	3	2022	3	2022
EOD Response ROVs and Maritime Expeditionary Standoff Response Family of Systems: MOTS ROV EOD Response Production Lot Award 4	3	2023	3	2023
EOD Response ROVs and Maritime Expeditionary Standoff Response Family of Systems: MOTS ROV EOD Transition to MESR Inc I	1	2024	1	2024
EOD Response ROVs and Maritime Expeditionary Standoff Response Family of Systems: MESR Inc 1 ONR LO/NCD FNC	1	2021	2	2023
EOD Response ROVs and Maritime Expeditionary Standoff Response Family of Systems: MESR Inc 1 Prototype Payload Dev & Testing	1	2021	1	2022
EOD Response ROVs and Maritime Expeditionary Standoff Response Family of Systems: MESR Inc I Platform and Payload Integration Testing	1	2021	2	2023
EOD Response ROVs and Maritime Expeditionary Standoff Response Family of Systems: MESR Inc 1 TTRA #2	2	2021	2	2021
EOD Response ROVs and Maritime Expeditionary Standoff Response Family of Systems: MESR Inc 1 WSESRB Tech Assist	3	2021	3	2021

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 0603654N / *JNT Service EOD Development*	**Project (Number/Name)** 3447 / *Mine Expeditionary Response Vehicle (MESR)*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
EOD Response ROVs and Maritime Expeditionary Standoff Response Family of Systems: MESR Inc 1 Platform Baseline	4	2021	4	2021
EOD Response ROVs and Maritime Expeditionary Standoff Response Family of Systems: MEST Inc 1 EMD Phase	4	2021	4	2021
EOD Response ROVs and Maritime Expeditionary Standoff Response Family of Systems: MESR Inc 1 PDR Technical Interchange Meeting (TIM)	1	2022	1	2022
EOD Response ROVs and Maritime Expeditionary Standoff Response Family of Systems: MESR Inc 1 Alternative Systems Review	1	2022	4	2022
EOD Response ROVs and Maritime Expeditionary Standoff Response Family of Systems: MESR Inc 1 Environmental Testing	2	2022	4	2022
EOD Response ROVs and Maritime Expeditionary Standoff Response Family of Systems: MESR Inc 2 Initiation	4	2022	4	2022
EOD Response ROVs and Maritime Expeditionary Standoff Response Family of Systems: MESR Inc 1 SVR/FCA	1	2021	1	2021
EOD Response ROVs and Maritime Expeditionary Standoff Response Family of Systems: MESR Inc 1 CDR	1	2023	1	2023
EOD Response ROVs and Maritime Expeditionary Standoff Response Family of Systems: MESR Inc 1 System Performance Testing	1	2023	4	2023
EOD Response ROVs and Maritime Expeditionary Standoff Response Family of Systems: MESR Inc 1 PCA	3	2023	3	2023
EOD Response ROVs and Maritime Expeditionary Standoff Response Family of Systems: MESR Inc 1 Supportability Assessment	3	2023	3	2023
EOD Response ROVs and Maritime Expeditionary Standoff Response Family of Systems: MESR Inc 1 PRR	4	2023	4	2023
EOD Response ROVs and Maritime Expeditionary Standoff Response Family of Systems: MESR Inc 1 WSESRB Review	4	2023	4	2023
EOD Response ROVs and Maritime Expeditionary Standoff Response Family of Systems: MESR Inc 1 User Acceptance Testing	4	2023	1	2024

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 0603654N / *JNT Service EOD Development*	**Project (Number/Name)** 3447 / *Mine Expeditionary Response Vehicle (MESR)*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
EOD Response ROVs and Maritime Expeditionary Standoff Response Family of Systems: MESR Inc 1 Production Decision	1	2024	1	2024
EOD Response ROVs and Maritime Expeditionary Standoff Response Family of Systems: MESR Inc 1 Production & Deployment	1	2024	4	2027
EOD Response ROVs and Maritime Expeditionary Standoff Response Family of Systems: MESR Future Increment T&E	1	2024	1	2027
EOD Response ROVs and Maritime Expeditionary Standoff Response Family of Systems: MESR Inc 1 Production & Deliveries	1	2024	4	2027
EOD Response ROVs and Maritime Expeditionary Standoff Response Family of Systems: MESR Inc 1 IOC	4	2024	4	2024
EOD Response ROVs and Maritime Expeditionary Standoff Response Family of Systems: MESR Inc 3 Initiation	4	2025	4	2025
EOD Response ROVs and Maritime Expeditionary Standoff Response Family of Systems: MESR Inc 1 FOC	4	2027	4	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 0603654N / *JNT Service EOD Development*	Project (Number/Name) 4023 / *Expeditionary Underwater Systems*	

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
4023: *Expeditionary Underwater Systems*	173.179	23.528	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	196.707
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Beginning in FY22, the EOD Response ROV and MESR efforts transition to Project Unit 3447.

A. Mission Description and Budget Item Justification

Funding supports the development of unmanned systems for the Navy's expeditionary unmanned underwater Explosive Ordnance Disposal (EOD) and Mine Countermeasures (MCM) capability. Specifically, it provides for development of affordable expeditionary, unmanned underwater systems to support Navy Expeditionary forces including EOD, Mobile Diving and Salvage, Underwater Construction Teams (UCT), Very Shallow Water (VSW), and Expeditionary Mine Countermeasures (ExMCM) mission operations. The equipment must be highly portable in order to support the Navy EOD technician to safely approach, render safe, recover, exploit, and dispose of underwater explosive threats to include sea mines, limpet mines, and unexploded ordnance. Provides support for the Navy's high priority missions of Maritime Homeland Defense and MCM, including clandestine reconnaissance and mine clearance in support of amphibious operations. Development of Expeditionary UUV systems, including the MK 18 UUV Family of Systems, to support localization render-safe and detailed intelligence gathering of unexploded ordnance (UXO) including Underwater Improvised Explosive Devices (IEDs). This project directly supports Department of the Navy Strategic Roadmap for Unmanned Systems promulgated in March 2018 and the requirements defined by the Maritime Expeditionary MCM UUV (MEMUUV) CDD and is being executed in accordance with approved CNO N9I Requirement #056-95-19, "Capability Development Document for Maritime Expeditionary Standoff Response Family of Systems," July 23 2019.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Expeditionary UUV Family of Systems	15.250	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: This program supports development, testing and Fleet approval for evolving generations of affordable, expeditionary Unmanned Underwater Vehicle (UUVs) systems to address validated requirements in support of expeditionary mission areas defined by the Maritime Expeditionary MCM UUV (MEMUUV) Capability Development Document (CDD) approved in September 2017.					
FY 2022 Plans: Funding moved to PE 0604028N beginning in FY22					
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 0603654N / *JNT Service EOD Development*	**Project (Number/Name)** 4023 / *Expeditionary Underwater Systems*

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 2023 OCO Plans:*** N/A					
Title: EOD Response ROVs and Maritime Expeditionary Standoff Response System of Systems ***Articles:*** ***Description:*** This program supports development, testing and evaluation of technologies and commercial systems that will provide needed capabilities to EOD and Expeditionary forces in responding to the wide range of underwater threats and operational environments encountered in assigned mission areas to include: confined areas, hulls, piers and pilings to search, classify, map, re-acquire, identify, and neutralize sea and limpet mines and underwater improvised explosive devices. ***FY 2022 Plans:*** Funding for MESR has been transitioned to Project Unit 3447 beginning in FY22. ***FY 2023 Base Plans:*** N/A ***FY 2023 OCO Plans:*** N/A	8.278 -	0.000 -	0.000 -	0.000 -	0.000 -
Accomplishments/Planned Programs Subtotals	23.528	0.000	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
• OPN/0977(a): *Underwater EOD Program (Cost Code UQ034)*	4.715	1.939	0.546	-	0.546	0.000	4.200	0.000	0.000	0.000	157.498
• OPN/0977(b): *Expeditionary Mine Countermeasures (ExMCM) (Cost Code UQ038)*	3.903	5.163	10.723	-	10.723	2.175	0.000	0.000	0.000	0.000	98.185
• OPN/1611: *Expeditionary UUV (Cost Code MU002)*	32.550	17.116	9.530	-	9.530	9.721	9.915	0.000	0.000	0.000	78.832

Remarks

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 0603654N / *JNT Service EOD Development*	**Project (Number/Name)** 4023 / *Expeditionary Underwater Systems*

D. Acquisition Strategy

Analysis of Alternatives (AOA) studies are conducted prior to the initiation of new sub-projects. The AOA addresses and emphasizes acquisitions strategies of the most cost-effective solution over the sub-projects' life -cycle. The acquisition strategies observe the following hierarchy of alternatives: commercial item (including modifications), non-developmental item (including modifications), and lastly, developmental programs. Contracting for RDT&E, if required is competitive and when feasible, production options are included. This ongoing program capitalizes on a User Operational Evaluation System (UOES) effort involving Fleet operators engaged in tactical experimentation with prototype UUVs prior to fielding baseline systems and capability improvement package increments. These UUV operators also participate in detailed requirements analyses and definition. Operational capabilities with UUVs have been realized at designated operational units, with a competitive acquisition strategy. The addition of enhanced capabilities through an evolutionary acquisition approach to the UUV toolbox is programmed for delivery in accordance with approved CNO requirements and ONR Technology Deployment Agreements (TDAs) which close capability gaps. Further improvements to the toolbox to add basic mine and underwater explosive threats neutralization capabilities will continue to be pursued. A key attribute for these systems is minefield suitability and control of system signatures to counter influence fired ordnance. Influence signatures of subject UUVs will be characterized as a vital component of the acquisition initiatives. Maximum use of innovative contracting mechanisms will be assessed and pursued where applicable and in the best interest of the Navy.

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 0603654N / *JNT Service EOD Development*	**Project (Number/Name)** 4023 / *Expeditionary Underwater Systems*

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
Primary Hardware Development	WR	Multiple Activities : Not Specified	33.747	5.326	Nov 2020	0.000	Nov 2021	0.000		-		0.000	0.000	39.073	-
Systems Engineering	WR	NSWC Activities : Not Specified	22.532	4.410	Nov 2020	0.000	Nov 2021	0.000		-		0.000	0.000	26.942	-
Primary Hardware Development	WR	NSWCIHEODTD : Indian Head, MD	16.238	0.000		0.000		0.000		-		0.000	0.000	16.238	-
Systems Engineering	WR	NSWC, Activities : Not Specified	31.182	3.574	Nov 2020	0.000	Nov 2021	0.000		-		0.000	0.000	34.756	-
		Subtotal	103.699	13.310		0.000		0.000		-		0.000	0.000	117.009	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
Technical Support	C/CPFF	PERATON : Herndon, VA	7.913	0.519	Nov 2020	0.000	Nov 2021	0.000		-		0.000	0.000	8.432	-
		Subtotal	7.913	0.519		0.000		0.000		-		0.000	0.000	8.432	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
Developmental Test & Evaluation-WR	WR	NSWC Activities : Not Specified	28.000	4.476	Nov 2020	0.000	Nov 2021	0.000		-		0.000	0.000	32.476	-
Independent T&E	WR	NSWC Activities : Not Specified	9.643	1.820	Nov 2020	0.000	Nov 2021	0.000		-		0.000	0.000	11.463	-
Developmental Test & Evaluation	WR	NSWC Activities : Not Specified	13.870	2.837	Nov 2020	0.000	Nov 2021	0.000		-		0.000	0.000	16.707	-
Independent T&E	WR	NSWCIHEODTD : Indian Head, MD	1.424	0.000		0.000		0.000		-		0.000	0.000	1.424	-
		Subtotal	52.937	9.133		0.000		0.000		-		0.000	0.000	62.070	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 0603654N / *JNT Service EOD Development*	Project (Number/Name) 4023 / *Expeditionary Underwater Systems*	

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	WR	NSWCIHEODTD : Indian Head, MD	5.778	0.344	Nov 2020	0.000	Nov 2021	0.000		-		0.000	0.000	6.122	-
Miscellaneous	WR	NSWC Activities : Not Specified	2.834	0.222	Nov 2020	0.000	Nov 2021	0.000		-		0.000	0.000	3.056	-
DAWDF	Various	Not Specified : Not Specified	0.018	0.000		0.000		0.000		-		0.000	0.000	0.018	-
		Subtotal	8.630	0.566		0.000		0.000		-		0.000	0.000	9.196	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	173.179	23.528		0.000		0.000		-		0.000	0.000	196.707	N/A

Remarks

FY20 efforts include use of Defense Innovation Unit (DIU) Other Transactional Agreements (OTAs) to support rapid fielding of MOTS EOD response ROVS and Small UUV Next Generation systems.
FY21 efforts include
FY22 efforts

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 0603654N / *JNT Service EOD Development*	**Project (Number/Name)** 4023 / *Expeditionary Underwater Systems*

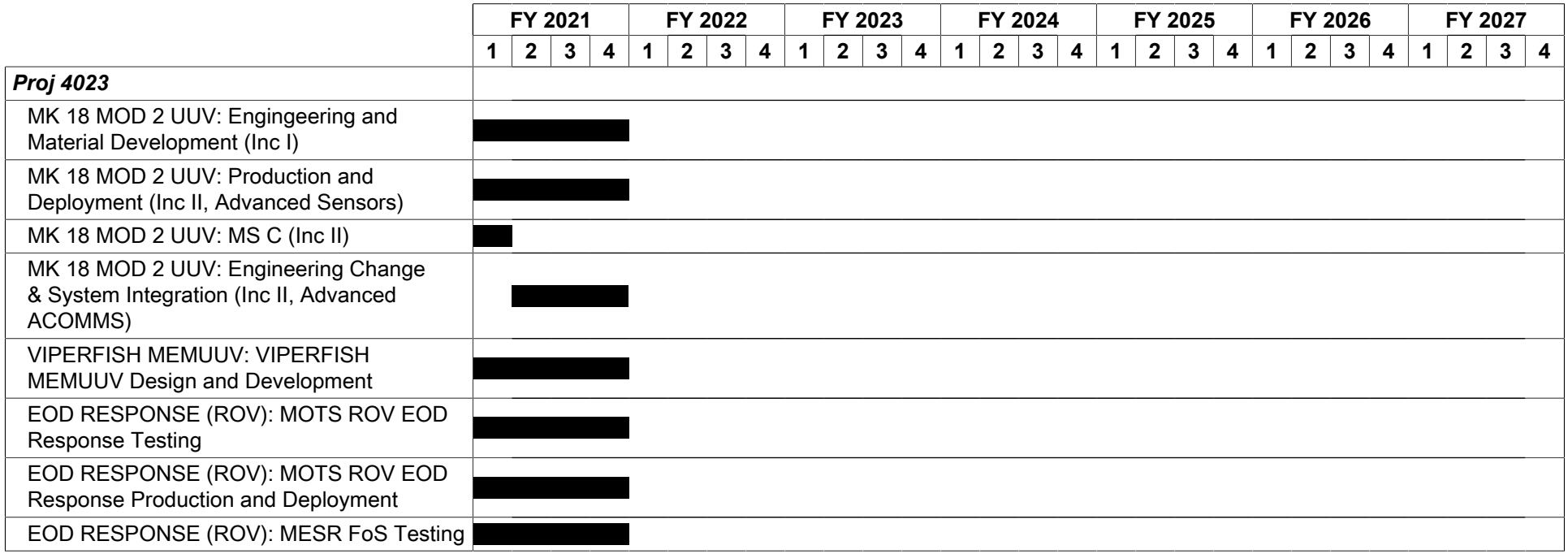

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603654N / *JNT Service EOD Development*	**Project (Number/Name)** 4023 / *Expeditionary Underwater Systems*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 4023				
MK 18 MOD 2 UUV: Engingeering and Material Development (Inc I)	1	2021	4	2021
MK 18 MOD 2 UUV: Production and Deployment (Inc II, Advanced Sensors)	1	2021	4	2021
MK 18 MOD 2 UUV: MS C (Inc II)	1	2021	1	2021
MK 18 MOD 2 UUV: Engineering Change & System Integration (Inc II, Advanced ACOMMS)	2	2021	4	2021
VIPERFISH MEMUUV: VIPERFISH MEMUUV Design and Development	1	2021	4	2021
EOD RESPONSE (ROV): MOTS ROV EOD Response Testing	1	2021	4	2021
EOD RESPONSE (ROV): MOTS ROV EOD Response Production and Deployment	1	2021	4	2021
EOD RESPONSE (ROV): MESR FoS Testing	1	2021	4	2021