Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Navy	Date: March 2024
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604127N / *Surface Mine Countermeasures*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	69.481	12.530	16.127	15.271	-	15.271	13.390	13.489	13.732	14.012	Continuing	Continuing
0530: *Mine Hunt Systems*	36.197	2.039	5.673	5.064	-	5.064	4.241	4.249	4.327	4.414	Continuing	Continuing
1235: *Mine Warfare Planning and Analysis*	33.284	10.491	10.454	10.207	-	10.207	9.149	9.240	9.405	9.598	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Surface Mine Countermeasures (SMCM) Program Element (PE) provides resources in support of development of mine countermeasures systems to provide minehunting and neutralization to counter known and projected mine threats. The mine countermeasures systems provide mobile, quick reaction forces capable of land or sea-based minehunting and neutralizing operations worldwide. Resources are for developing and deploying advanced minehunting and neutralization systems and the intelligence and oceanographic capabilities that will enable mine warfare superiority. Tactics and techniques used vary across a diversity of environments and a diversity of threats, including both asymmetric and emerging. Resources provide for systems and support of mine warfare systems, maritime systems, and expeditionary systems to allow for continuous operations of the Navy's warships and support vessels, other military vessels, and commercial vessels. Increased capability includes conducting minefield reconnaissance (mine density and location) at high area search rates; improving detection capability; decreasing sensor false alarm rates; reducing or eliminating post-mission analysis detect, classify, identify, decide time; improving neutralization time; improving network communications; automatic target recognition; and achieving in-stride detect-to-engage capability. The Surface Mine Countermeasures programs are in general platform independent and will provide detection, classification, localization, identification, neutralization, and influence clearance capabilities. Programs develop: (1) Unmanned minehunting capability for surface platforms; (2) the integration and improvement of new and existing systems (3) support for systems which detect, localize, classify, identify, and neutralize all mine types across MCM Avenger Class, Littoral Combat Ship (LCS) Class and other platforms.

1) The AN/AQS-20 is a minehunting and identification system with sensors housed in an underwater towed body. The sensors are designed for the detection, classification and localization of bottom, close-tethered, and volume targets, and for the identification of bottom targets. The system can be deployed from the Littoral Combat Ship (LCS) as part of the MCM Mission Package or can be deployed from other Vessels of Opportunity (VOO). The MCM USV is the tow platform for the AN/AQS-20.

2) AN/SQQ-32(V)4 High-Frequency, Wide Band (HFWB) is a technology upgrade to the AN/SQQ-32 Towed Body which incorporated HFWB technology into the detection sonar to address performance deficiencies against new mine threats in the littorals. This upgrade was installed on MCM-1 Class ships.

3) AN/SLQ-60 Mine Neutralization System (MNS) Seafox on the MCM Class ships. MNS is the replacement to the existing AN/SLQ-48 Mine Neutralization System.

4) Mine Warfare and Environmental Decision Aids Library (MEDAL) is the U.S. Navy's single Mine Warfare (MIW) tactical decision support system for integrated mission planning, evaluation, and situational awareness. MEDAL provides mine warfare planning and evaluation tools and databases to mine countermeasures (MCM) Commanders and is employed at the unit level to perform MCM sortie planning and evaluation. The current MEDAL increment, known as MEDAL Enterprise

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Navy	Date: March 2024
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604127N / *Surface Mine Countermeasures*

Architecture (EA), is no longer dependent on Global Command and Control System - Maritime (GCCS-M) for fielding to MIW fleet users. MEDAL EA is a family of systems, comprised of the following three components: MINEnet Global, MINEnet Tactical, and Minefield Planning. MINEnet Global is a shore-based website that provides MIW waterspace awareness functionality to support Navy non-MIW forces. MINEnet Global provides downloadable reference databases, MIW reference publications and links to MIW information. The MINEnet Tactical component is a software application which provides MCM tactical planning, situational awareness and post mission evaluation capabilities. It is fielded to standard Navy networks including, Consolidated Afloat Networks and Enterprise Services (CANES), Integrated Shipboard Network System (ISNS), and Navy Marine Corps Intranet (NMCI) servers and uses common web browsers as the user interface. Minefield Planning is also a tactical software application which provides the capability to plan mining operations.

5) MIW Integrated Synthetic Trainer (MIST) will provide integrated phase training for MIW staffs in end-to-end MCM scenarios. This tool will provide the capability to train MIW staffs against near peer threats.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	12.959	16.127	15.442	-	15.442
Current President's Budget	12.530	16.127	15.271	-	15.271
Total Adjustments	-0.429	0.000	-0.171	-	-0.171
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.429	0.000			
• Rate/Misc Adjustments	0.000	0.000	-0.171	-	-0.171

Change Summary Explanation

FY 2023 reflects a net decrease of $429k for SBIR assessments.
FY 2024 no adjustments
FY 2025 reduced by $171K for miscellaneous adjustments.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604127N / *Surface Mine Countermeasures*	**Project (Number/Name)** 0530 / *Mine Hunt Systems*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
0530: *Mine Hunt Systems*	36.197	2.039	5.673	5.064	-	5.064	4.241	4.249	4.327	4.414	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Mine Hunt Systems project contains resources for systems, subsystems, and sensors integrated for use with the Mine Countermeasures Unmanned Surface Vehicle (MCM USV) for mine detection, classification, localization, identification, and neutralization capabilities. Research, development, test, and evaluation efforts are for increasing capability by decreasing time required to conduct Mine Countermeasures (MCM) operations, ensuring low risk to naval and commercial vessels, and removing the man from the minefield. Increased capability includes conducting minefield reconnaissance (mine density and location) at high area search rates, improving detection capability, decreasing sensor false alarm rates, and reducing post-mission analysis time for detection, classification, and identification.

The AN/AQS-20C is a mine hunting and identification system with sensors housed in an underwater towed body. The AN/AQS-20C integrates the Wideband Forward Looking Sonar (WBFLS), multifunction Synthetic Aperture Sonar (SAS), and Digital Gap Fill Sonar (DGFS) for the detection, classification and localization of bottom, close- tethered, volume targets. Integration of the Electro-Optic Identification (EOID) sensor enables identification of bottom targets. The system can be deployed from the Littoral Combat Ship (LCS) as part of the MCM Mission Package (MP) or can be deployed from other Vessels of Opportunity (VOO). The MCM USV is the tow platform for the AN/ AQS-20C. Materiel reliability, obsolescence, and performance Engineering Change Proposal (ECP) efforts continue beyond FY 2027. In FY 2022, the AN/AQS-20 Program completed DT/OT with MCM USV, and supported the MCM Mission Package (MP) IOT&E. Due to successful completion Of DT/OT for the AN/ AQS-20, Initial Operating Capability was declared in March of FY23.

In FY 2025, the AN/AQS-20 program will continue development of Automated Target Recognition (ATR) efforts, Acoustic ID, ensure compliance with cybersecurity requirements, and resolve system obsolescence. Based on MCM MP IOT&E and MCM USV DT/OT, corrective action updates will be integrated and ECPs incorporated in to the system. Offshore integration and test will verify product development efforts, and design upgrades due to obsolescence.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: AN/AQS-20 Product Development	1.161	4.328	3.607	0.000	3.607
Articles:	-	-	-	-	-
FY 2024 Plans: - Continued Improvement of ATR through algorithm refinement for new environments and targets to reduce false calls. ATR integration with MCM USV system verification and test - Improve iPMA sailor experience by reducing workload, complexity and performance through use of automation					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604127N / *Surface Mine Countermeasures*	**Project (Number/Name)** 0530 / *Mine Hunt Systems*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
- Complete ECPs to resolve findings from MCM USV TECHEVAL & IOT&E and MCM MP TECHEVAL & IOT&E for LCS Independence Variant ***FY 2025 Base Plans:*** - Continued Improvement of ATR through algorithm refinement for new environments and targets to reduce false calls. - Acoustic ID CONOPS development and integration with ATR - Improve iPMA based on new capability through ATR and Acoustic ID - Resolution of obsolescence and DMSMS issues within the AN/AQS-20C through ECP incorporation ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease in FY 2025 is associate with starting acoustic ID CONOPS development and integration with ATR.					
Title: AN/AQS-20 Support	0.484	1.180	1.297	0.000	1.297
Articles:	-	-	-	-	-
FY 2024 Plans: - Provide ongoing technical and management support to AN/AQS-20 product development - Provide engineer support, design and upgrade for obsolescence of aging components and software within the Q-20C - Update AN/AQS-20 Block 2 tactics based on new capability provided from ATR, Acoustic ID and Post Mission Analysis performance improvements ***FY 2025 Base Plans:*** - Provide ongoing technical and management support to AN/AQS-20 product development - Provide engineer support, design and upgrade for obsolescence of aging components and software within the Q-20C - Continue development with iPMA for inclusion of new capability ***FY 2025 OCO Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604127N / *Surface Mine Countermeasures*	**Project (Number/Name)** 0530 / *Mine Hunt Systems*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Slight increase due to AN/AQS-20 Engineering Services for aging components.					
Title: AN/AQS-20 Test and Evaluation	0.340	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2024 Plans: N/A ***FY 2025 Base Plans:*** N/A ***FY 2025 OCO Plans:*** N/A					
Title: AN/AQS-20 Management Services	0.054	0.165	0.160	0.000	0.160
Articles:	-	-	-	-	-
FY 2024 Plans: - Provide planning and management for the AN/AQS-20 program - Continue to provide Program Office travel support ***FY 2025 Base Plans:*** - Provide planning and management for the AN/AQS-20 program - Continue to provide Program Office travel support ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease in FY 2025 reflects a prioritization of product development over management services.					
Accomplishments/Planned Programs Subtotals	2.039	5.673	5.064	0.000	5.064

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604127N / *Surface Mine Countermeasures*	**Project (Number/Name)** 0530 / *Mine Hunt Systems*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• OPN/1601: *LCS MCM Mission Modules*	92.495	93.961	118.247	-	118.247	101.172	62.758	60.396	57.096	895.257	2,103.413

Remarks

OPN/1601 - The above funding line accounts for several programs, of which the Mine Hunt Systems program is only a portion.

D. Acquisition Strategy

AN/AQS-20 Low-Rate Initial Production (LRIP) procurement continued following the Block 2 (AQS-20C units) competitive contract award in FY 2014. In FY 2020, the AN/AQS-20 program leveraged the Unmanned Surface Vehicle (USV) Family of Systems (FoS) Indefinite Delivery Indefinite Quantity (IDIQ) Multiple Award Contract (MAC) to award multiple risk reduction efforts. The risk reduction efforts helped increase competition for FY 2025 sonar production. The risk reduction effort transitioned volume sonar capability and familiarized industry to specific sonar requirement based on the finding from FY 2019 market research. In FY 2021, a sole-source AN/AQS-20A (Block 1) to AN/AQS-20C (Block 2) upgrade contract was awarded to Raytheon to continue delivering sonars to support integration and testing for the LCS MCM MP. Risk reduction effort will inform the update of acquisition documentation in 2023 in order to define the next generation Minehunt Towed Sonar and ensure future competition. In the FY 2024 Request for Proposal will initiate competition for the FY 2025 sonar production contract.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604127N / *Surface Mine Countermeasures*	Project (Number/Name) 0530 / *Mine Hunt Systems*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AN/AQS-20 Block 2 MCM USV Integration	C/CPFF	Raytheon : Portsmouth, RI	1.037	0.000		0.423	Dec 2023	0.255	Dec 2024	-		0.255	0.000	1.715	-
AN/AQS-20 Block 2	C/CPFF	Raytheon : Portsmouth, RI	5.274	0.531	Nov 2022	2.167	Dec 2023	1.831	Dec 2024	-		1.831	Continuing	Continuing	Continuing
AN/AQS-20 Block 2	C/CPFF	ARL/UT : Austin, TX	1.835	0.100	Nov 2022	0.263	Dec 2023	0.225	Dec 2024	-		0.225	Continuing	Continuing	Continuing
AN/AQS-20 Block 2 PMA	WR	NSWC, PC : Panama City, FL	2.350	0.300	Oct 2022	0.411	Nov 2023	0.312	Nov 2024	-		0.312	Continuing	Continuing	Continuing
AN/AQS-20 Block 2 PMA	C/CPFF	ARL/UT : Austin, TX	2.528	0.230	Dec 2022	0.252	Dec 2023	0.225	Dec 2024	-		0.225	Continuing	Continuing	Continuing
AN/AQS-20 Risk Reduction	C/FFP	Various : Various	0.500	0.000		0.000		0.000		-		0.000	0.000	0.500	-
AN/AQS-20 Block 2 ATR	C/CPFF	JHU-APL : Laurel, MD	0.000	0.000		0.350	Dec 2023	0.380	Dec 2024	-		0.380	0.000	0.730	-
AN/AQS-20 Block 2 ATR	C/CPFF	NGC : Annapolis, MD	0.000	0.000		0.462	Dec 2023	0.379	Dec 2024	-		0.379	0.000	0.841	-
		Subtotal	13.524	1.161		4.328		3.607		-		3.607	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AN/AQS-20 Engineering Services	WR	NUWC/NPT : Newport, RI	0.365	0.000		0.000		0.000		-		0.000	0.000	0.365	-
AN/AQS-20 Engineering Services	WR	NSWC, PC : Panama City, FL	0.641	0.140	Oct 2022	0.268	Nov 2023	0.355	Dec 2024	-		0.355	Continuing	Continuing	Continuing
AN/AQS-20 Engineering Services	C/CPFF	Raytheon : Portsmouth, RI	0.951	0.200	Nov 2022	0.623	Nov 2023	0.630	Nov 2024	-		0.630	Continuing	Continuing	Continuing
AN/AQS-20 ILS Function	WR	NSWC, PC : Panama City, FL	2.096	0.144	Nov 2022	0.289	Nov 2023	0.312	Nov 2024	-		0.312	Continuing	Continuing	Continuing
		Subtotal	4.053	0.484		1.180		1.297		-		1.297	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604127N / *Surface Mine Countermeasures*	**Project (Number/Name)** 0530 / *Mine Hunt Systems*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	WR	COTF : Norfolk, VA	1.133	0.038	Nov 2022	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	WR	NSWC, PC : Panama City, FL	12.817	0.225	Oct 2022	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	C/CPFF	Raytheon : Portsmouth, RI	2.515	0.077	Nov 2022	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
		Subtotal	16.465	0.340		0.000		0.000		-		0.000	Continuing	Continuing	N/A

Remarks

COTF - Commander Operational Test and Evaluation Force

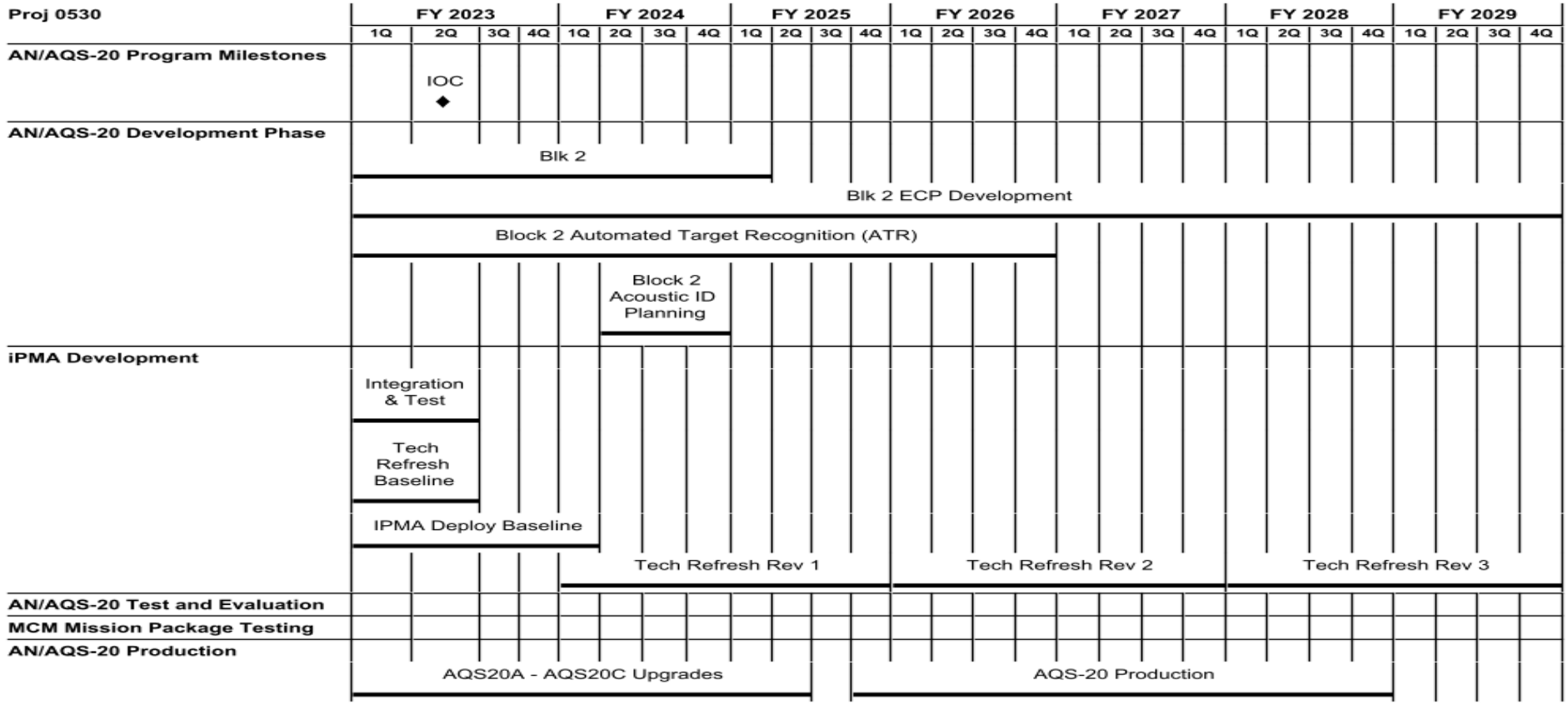
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AN/AQS-20 Management Services	Various	Various : Various	2.014	0.034	Dec 2022	0.145	Dec 2023	0.155	Dec 2024	-		0.155	Continuing	Continuing	Continuing
AN/AQS-20 Travel	Various	Various : Various	0.141	0.020	Mar 2023	0.020	Mar 2024	0.005	Mar 2025	-		0.005	Continuing	Continuing	Continuing
		Subtotal	2.155	0.054		0.165		0.160		-		0.160	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	36.197	2.039		5.673		5.064		-		5.064	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Navy		**Date:** March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604127N / *Surface Mine Countermeasures*	**Project (Number/Name)** 0530 / *Mine Hunt Systems*



2025OSD - 0604127N - 0530

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604127N / *Surface Mine Countermeasures*	**Project (Number/Name)** 0530 / *Mine Hunt Systems*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 0530				
AN/AQS-20 Program Milestones: Initial Operational Capability (IOC)	2	2023	2	2023
AN/AQS-20 Development Phase: AN/AQS-20 Block 2	1	2023	1	2025
AN/AQS-20 Development Phase: AN/AQS-20 Materiel Reliability, Obsolescence, and Performance ECP Development (Block 2)	1	2023	4	2029
AN/AQS-20 Development Phase: AN/AQS-20 Block 2 Automated Target Recognition (ATR)	1	2023	4	2026
AN/AQS-20 Development Phase: AN/AQS-20 Block 2 Acoustic Identification Test Planning	2	2024	4	2024
iPMA Development: iPMA/NSAM Integration and Test	1	2023	2	2023
iPMA Development: iPMA Tech Refresh Baseline	1	2023	2	2023
iPMA Development: iPMA Deployment Baseline	1	2023	1	2024
iPMA Development: Tech Refresh Rev 1	1	2024	4	2025
iPMA Development: Tech Refresh Rev 2	1	2026	4	2027
iPMA Development: Tech Refresh Rev 3	1	2028	4	2029
AN/AQS-20 Production: AN/AQS20A - AQS20C Upgrades	1	2023	2	2025
AN/AQS-20 Production: AQS-20C Production	4	2025	4	2028

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604127N / *Surface Mine Countermeasures*	**Project (Number/Name)** 1235 / *Mine Warfare Planning and Analysis*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
1235: *Mine Warfare Planning and Analysis*	33.284	10.491	10.454	10.207	-	10.207	9.149	9.240	9.405	9.598	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Mine Warfare Planning and Analysis project consists of two projects, the Mine Warfare and Environmental Decision Aids Library (MEDAL) and the Mine Warfare Integrated Synthetic Trainer (MIST). MEDAL is the U.S. Navy's single MIW tactical decision support system for integrated mission planning, evaluation, and situational awareness. MEDAL provides mine warfare planning and evaluation tools and databases to mine countermeasures (MCM) Commanders and is employed at the unit level to perform MCM sortie planning and evaluation. MEDAL Enterprise Architecture (EA) is a family of systems, comprised of the following three components: MINEnet Global, MINEnet Tactical, and Minefield Planning. MINEnet Global is a shore-based website that provides MIW waterspace awareness functionality to support Navy non-MIW forces. MINEnet Global provides downloadable reference databases, MIW reference publications and links to MIW information. The MINEnet Tactical component is a software application which provides MCM tactical planning, situational awareness and post mission evaluation capabilities. It is fielded to standard Navy networks including, Consolidated Afloat Networks and Enterprise Services (CANES), Integrated Shipboard Network System (ISNS), and Navy Marine Corps Intranet (NMCI) servers and uses common web browsers as the user interface. Minefield Planning is also a tactical software application which provides the capability to plan mining operations. MIST will be a synthetic trainer which will provide training via end-to-end MCM scenarios for MIW staffs. This tool will provide the capability to train MIW staffs against near peer threats.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: Product Development	6.173	6.008	5.331	0.000	5.331
Articles:	-	-	-	-	-
FY 2024 Plans: MEDAL: - Complete Minefield Planning (MFP) v1.2 software development, integrating Compact Encapsulated Effector (C-ENCAP) tools and aligning with draft Information System-Capability Development Document (IS-CDD) as applicable. - Begin MINEnet Tactical (MNT) v1.3.5 development. - Continue MNT v2.0 - Modernization software build; deliver prototype to fleet for evaluation as part of Agile software development process. - Conduct design analysis to identify, document, and incorporate fleet user priorities. MIST:					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604127N / *Surface Mine Countermeasures*	**Project (Number/Name)** 1235 / *Mine Warfare Planning and Analysis*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
- Complete v1.0 software development - initial fielding version. - Begin v1.1 - Distributed Simulation Clock. ***FY 2025 Base Plans:*** - Complete MNT v1.3.5 implementing new capabilities in accordance with backlog and user feedback. - Continue MNT v2.0 - modernization software build; deliver prototype to fleet for evaluation as part of Agile software development process. MIST: - Complete v1.1 - Distributed Simulation Clock. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2024 to FY 2025 decrease reflects reduced software development scope in FY 2025.					
Title: Engineering Support	3.374	3.229	3.036	0.000	3.036
Articles:	-	-	-	-	-
FY 2024 Plans: MEDAL: - Continue systems engineering for MFP v1.2 - integration of C-ENCAP tools and IS-CDD alignment. - Conduct systems engineering (requirements analysis) for MNT v1.3.5. - Continue systems engineering analysis to ensure MNT v2.0 system architecture will meet requirements. - Adjudicate test observation reports (TORs) from MNT 2.0 annual prototype and document them as software backlog items. - Conduct annual review of Navy training system plan. - Develop engineering change proposals to update software baselines. MIST: - Continue assessing cybersecurity requirements and following process to obtain an authority to operate. - Conduct requirements analysis for v1.1. - Complete v1.0 training curriculum development.					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604127N / *Surface Mine Countermeasures*	**Project (Number/Name)** 1235 / *Mine Warfare Planning and Analysis*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
- Conduct v1.0 release review. ***FY 2025 Base Plans:*** MEDAL: - Complete systems engineering for MFP v1.2 - integration of C-ENCAP tools and IS-CDD alignment. - Continue systems engineering for MNT v1.3.5. - Continue systems engineering analysis to ensure MNT v2.0 system architecture will meet requirements. - Adjudicate TORs from MNT 2.0 annual prototype and document them as software backlog items. - Conduct annual review of Navy training system plan. - Develop engineering change proposals to update software baselines. MIST: - Conduct systems engineering analysis to ensure v1.1 will meet requirements. - Begin v1.1 updates to training curriculum. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** No significant scope changes from FY 2024 to FY 2025.					
Title: Test and Evaluation	0.365	0.565	1.158	0.000	1.158
Articles:	-	-	-	-	-
FY 2024 Plans: MEDAL: - Evaluate MNT v2.0 prototype. MIST: - Conduct MIST v1.0 developmental testing program. ***FY 2025 Base Plans:*** MEDAL: - Conduct MFP v1.2 developmental testing. - Conduct MNT v1.3.5 development testing.					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604127N / *Surface Mine Countermeasures*	**Project (Number/Name)** 1235 / *Mine Warfare Planning and Analysis*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
- Evaluate MNT v2.0 prototype. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2024 to FY 2025 increase reflects planned scope of testing, two release candidate tests and prototype evaluation efforts for MEDAL.					
Title: Management Services	0.579	0.652	0.682	0.000	0.682
Articles:	-	-	-	-	-
FY 2024 Plans: MEDAL: - Continue to plan, track, follow-up and report on cost, schedule, and performance status. - Conduct management and oversight of MEDAL and MIST programs. - Conduct Milestone B and address actions following the Milestone B review. MIST: - Continue to plan, track, follow-up and report on cost, schedule, and performance status. ***FY 2025 Base Plans:*** MEDAL: - Continue to plan, track, follow-up and report on cost, schedule, and performance status. - Conduct management and oversight of MEDAL and MIST programs. - Address actions following the Milestone B review. MIST: - Continue to plan, track, follow-up and report on cost, schedule, and performance status. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** No significant scope changes from FY 2024 to FY 2025.					
Accomplishments/Planned Programs Subtotals	10.491	10.454	10.207	0.000	10.207

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604127N / *Surface Mine Countermeasures*	**Project (Number/Name)** 1235 / *Mine Warfare Planning and Analysis*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The MEDAL program is government led and executed. NSWC PCD is the lead government activity and awarded a Seaport engineering services contract in FY 2020 to provide additional engineering capacity across disciplines.

MIST is a government product designed, developed, and supported at NSWC PCD.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604127N / *Surface Mine Countermeasures*	**Project (Number/Name)** 1235 / *Mine Warfare Planning and Analysis*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MEDAL EA	C/IDDQ	JHU/APL : Laurel, MD	0.000	0.403	Jul 2023	0.000	Apr 2024	0.000	Apr 2025	-		0.000	0.000	0.403	0.403
MEDAL EA	C/IDDQ	IPS : Panama City, FL	0.980	0.145	Jun 2023	0.681	Jun 2024	0.695	Jun 2025	-		0.695	Continuing	Continuing	Continuing
MEDAL EA & MIW Integrated Synthetic Training (MIST)	WR	NSWC PCD : Panama City, FL	11.907	3.811	Oct 2022	5.327	Oct 2023	4.636	Oct 2024	-		4.636	Continuing	Continuing	Continuing
MEDAL EA & MIW Integrated Synthetic Training (MIST)	WR	Office of Naval Research : Various	0.000	1.814	Oct 2022	0.000	Oct 2023	0.000	Oct 2024	-		0.000	0.000	1.814	1.814
		Subtotal	12.887	6.173		6.008		5.331		-		5.331	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MEDAL EA & MIW Integrated Synthetic Training (MIST)	WR	NSWC PCD : Panama City, FL	14.222	3.026	Oct 2022	2.950	Oct 2023	2.752	Oct 2024	-		2.752	Continuing	Continuing	Continuing
MEDAL EA	C/IDDQ	IPS : Panama City, FL	1.220	0.348	Jun 2023	0.279	Jun 2024	0.284	Jun 2025	-		0.284	Continuing	Continuing	Continuing
		Subtotal	15.442	3.374		3.229		3.036		-		3.036	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NSWC PCD : Panama City, FL	1.503	0.331	Oct 2022	0.532	Oct 2023	1.090	Oct 2024	-		1.090	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	C/IDDQ	IPS : Panama City, FL	0.674	0.034	Jun 2023	0.033	Jun 2024	0.068	Jun 2025	-		0.068	Continuing	Continuing	Continuing
		Subtotal	2.177	0.365		0.565		1.158		-		1.158	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604127N / *Surface Mine Countermeasures*	**Project (Number/Name)** 1235 / *Mine Warfare Planning and Analysis*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MEDAL EA & MIW Integrated Synthetic Training (MIST)	WR	NSWC PCD : Panama City, FL	2.507	0.301	Oct 2022	0.516	Oct 2023	0.544	Oct 2024	-		0.544	Continuing	Continuing	Continuing
MEDAL EA	C/IDDQ	IPS : Panama City, FL	0.271	0.278	Jun 2023	0.136	Jun 2024	0.138	Jun 2025	-		0.138	0.000	0.823	-
		Subtotal	2.778	0.579		0.652		0.682		-		0.682	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	33.284	10.491		10.454		10.207		-		10.207	Continuing	Continuing	N/A

Remarks

MIST v1.0 delivery accelerated from 3QFY25 to 1QFY25. Pre-delivery testing will be completed in FY24. Testing schedule that supports MIST v1.0 delivery has been updated and will require a single development test, not two, before the end-to-end test. Subsequent developmental tests have been renumbered accordingly. Resources previously identified for Test and Evaluation in FY25 will be applied to Product Development as risk reduction.

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Navy		**Date:** March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604127N / *Surface Mine Countermeasures*	**Project (Number/Name)** 1235 / *Mine Warfare Planning and Analysis*

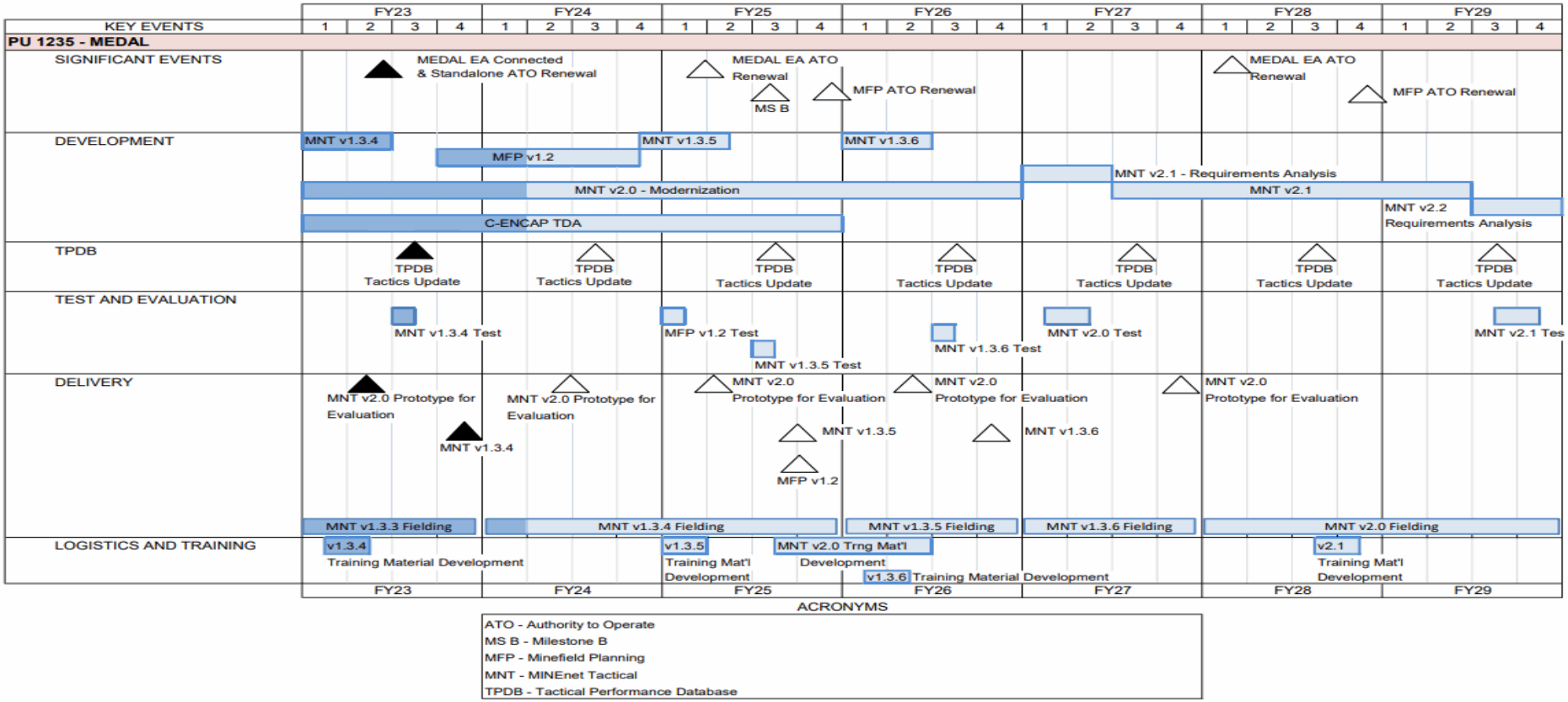


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Navy		**Date:** March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604127N / *Surface Mine Countermeasures*	**Project (Number/Name)** 1235 / *Mine Warfare Planning and Analysis*

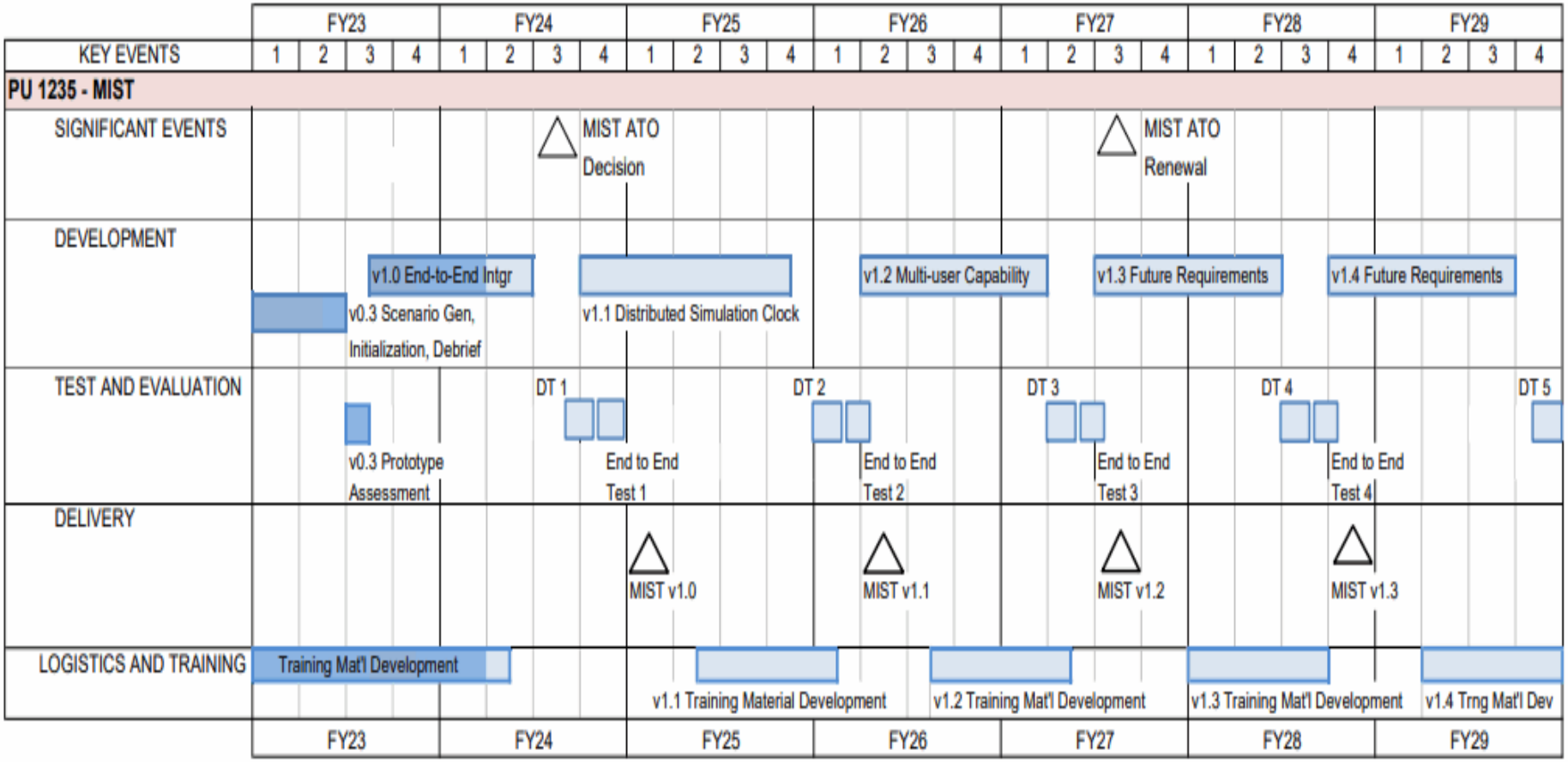


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604127N / *Surface Mine Countermeasures*	**Project (Number/Name)** 1235 / *Mine Warfare Planning and Analysis*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
MEDAL				
Significant Events: Milestone B	3	2025	3	2025
Significant Events: MEDAL EA Connected & Standalone ATO Renewal	2	2023	2	2023
Significant Events: MFP ATO Renewal 2	4	2025	4	2025
Significant Events: MFP ATO Renewal 3	4	2028	4	2028
Significant Events: MEDAL EA Connected & Standalone ATO Renewal 2	1	2025	1	2025
Significant Events: MEDAL EA Connected & Standalone ATO Renewal 3	1	2028	1	2028
System Development: MEDAL EA Development: MINEnet Tactical v2.0 Modernization	1	2023	4	2026
System Development: MEDAL EA Development: MINEnet Tactical v2.1 Requirements Analysis	1	2027	2	2027
System Development: MEDAL EA Development: MINEnet Tactical v2.1	3	2027	2	2029
System Development: MEDAL EA Development: MINEnet Tactical v2.2 Requirements Analysis	3	2029	4	2029
System Development: MEDAL EA Development: MINEnet Tactical v1.3.4	1	2023	2	2023
System Development: MEDAL EA Development: MINEnet Tactical v1.3.5	4	2024	2	2025
System Development: MEDAL EA Development: MINEnet Tactical v1.3.6	1	2026	2	2026
System Development: MEDAL EA Development: Minefield Planning v1.2 (MFP) Development	4	2023	4	2024
System Development: MEDAL EA Development: C-ENCAP TDA	1	2023	4	2025
Test and Evaluation: MEDAL EA T&E: MINEnet Tactical v1.3.4 (MNT) Test	3	2023	3	2023
Test and Evaluation: MEDAL EA T&E: Minefield Planning v1.2 (MFP) Test	1	2025	1	2025
Test and Evaluation: MEDAL EA T&E: MINEnet Tactical v1.3.5 (MNT) Test	3	2025	3	2025
Test and Evaluation: MEDAL EA T&E: MINEnet Tactical v1.3.6 (MNT) Test	3	2026	3	2026

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604127N / *Surface Mine Countermeasures*	**Project (Number/Name)** 1235 / *Mine Warfare Planning and Analysis*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Test and Evaluation: MEDAL EA T&E: MINEnet Tactical v2.0 (MNT) Test	1	2027	2	2027
Test and Evaluation: MEDAL EA T&E: MINEnet Tactical v2.1 (MNT) Test	3	2029	4	2029
Delivery Milestones: MEDAL EA Fielding: MINENet Tactical v2.0 Prototype for Evaluation	2	2023	2	2023
Delivery Milestones: MEDAL EA Fielding: MINENet Tactical v2.0 Prototype for Evaluation 2	2	2024	2	2024
Delivery Milestones: MEDAL EA Fielding: MINENet Tactical v2.0 Prototype for Evaluation 3	2	2025	2	2025
Delivery Milestones: MEDAL EA Fielding: MINENet Tactical v2.0 Prototype for Evaluation 4	2	2026	2	2026
Delivery Milestones: MEDAL EA Fielding: MINENet Tactical v2.0	4	2027	4	2027
Delivery Milestones: MEDAL EA Fielding: MINENet Tactical v1.3.4	4	2023	4	2023
Delivery Milestones: MEDAL EA Fielding: MINENet Tactical v1.3.5	4	2025	4	2025
Delivery Milestones: MEDAL EA Fielding: MFP v1.2	4	2025	4	2025
Delivery Milestones: MEDAL EA Fielding: MINENet Tactical v1.3.6	4	2026	4	2026
Delivery Milestones: MEDAL EA Fielding: MINENet Tactical v1.3.3 Fielding	1	2023	4	2023
Delivery Milestones: MEDAL EA Fielding: MINENet Tactical v1.3.4 Fielding	1	2024	4	2025
Delivery Milestones: MEDAL EA Fielding: MINENet Tactical v1.3.5 Fielding	1	2026	4	2026
Delivery Milestones: MEDAL EA Fielding: MINENet Tactical v1.3.6 Fielding	1	2027	4	2027
Delivery Milestones: MEDAL EA Fielding: MINENet Tactical v2.0 Fielding	1	2028	4	2029
TPDB: TPDB Tactics Updates	3	2023	3	2029
LOGISTICS AND TRAINING: Training Material Development v1.3.4	1	2023	2	2023
LOGISTICS AND TRAINING: Training Material Development v1.3.5	1	2025	1	2025
LOGISTICS AND TRAINING: Training Material Development v1.3.6	1	2026	2	2026
LOGISTICS AND TRAINING: MINENet Tactical v2.0 Training Material Development	3	2025	2	2026
LOGISTICS AND TRAINING: MINENet Tactical v2.1 Training Material Development	3	2028	4	2028

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604127N / *Surface Mine Countermeasures*	**Project (Number/Name)** 1235 / *Mine Warfare Planning and Analysis*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
MIW Integrated Synthetic Training (MIST)				
Significant Events: MIST ATO Decision	3	2024	3	2024
Significant Events: MIST ATO Renewal	3	2027	3	2027
System Development: MIST Development: Development v0.3	1	2023	2	2023
System Development: MIST Development: Development v1.0	3	2023	2	2024
System Development: MIST Development: Development v1.1	4	2024	4	2025
System Development: MIST Development: Development v1.2	2	2026	1	2027
System Development: MIST Development: Development v1.3	3	2027	2	2028
System Development: MIST Development: Development v1.4	4	2028	3	2029
Test & Evaluation: MIST T&E: v0.3 Fleet Prototype Assessment	3	2023	3	2023
Test & Evaluation: MIST T&E: v1.0 Developmental Test 1	3	2024	4	2024
Test & Evaluation: MIST T&E: v1.1 Developmental Test 2	1	2026	1	2026
Test & Evaluation: MIST T&E: v1.2 Developmental Test 3	2	2027	2	2027
Test & Evaluation: MIST T&E: v1.3 Developmental Test 4	3	2028	3	2028
Test & Evaluation: MIST T&E: v1.4 Developmental Test 5	4	2029	4	2029
Test & Evaluation: MIST T&E: v1.0 End to End Test 1	4	2024	4	2024
Test & Evaluation: MIST T&E: v1.1 End to End Test 2	1	2026	2	2026
Test & Evaluation: MIST T&E: v1.2 End to End Test 3	2	2027	3	2027
Test & Evaluation: MIST T&E: v1.3 End to End Test 4	3	2028	4	2028
Delivery Milestones: MIST Fielding: v1.0	1	2025	1	2025
Delivery Milestones: MIST Fielding: v1.1	2	2026	2	2026
Delivery Milestones: MIST Fielding: v1.2	3	2027	3	2027
Delivery Milestones: MIST Fielding: v1.3	4	2028	4	2028
LOGISTICS AND TRAINING: Training Material Development v1.0	1	2023	2	2024
LOGISTICS AND TRAINING: Training Material Development v1.1	2	2025	1	2026

Exhibit R-4A, **RDT&E Schedule Details:** PB 2025 Navy		**Date:** March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604127N / *Surface Mine Countermeasures*	**Project (Number/Name)** 1235 / *Mine Warfare Planning and Analysis*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
LOGISTICS AND TRAINING: Training Material Development v1.2	3	2026	2	2027
LOGISTICS AND TRAINING: Training Material Development v1.3	1	2028	3	2028
LOGISTICS AND TRAINING: Training Material Development v1.4	2	2029	4	2029