Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Navy											Date: February 2020	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0604373N *I Airborne Mine Countermeasures*							
COST ($ in Millions)	**Prior Years**	**FY 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**Cost To Complete**	**Total Cost**
Total Program Element	63.930	8.024	10.916	10.909	-	10.909	11.092	11.322	11.550	11.782	Continuing	Continuing
4026: *Net-Centric Sensor Analysis for Mine Warfare (NSAM)*	55.608	7.148	9.984	9.956	-	9.956	10.120	10.330	10.538	10.749	Continuing	Continuing
9179: *Surf Navy Integ Undersea Tactical Tech*	8.322	0.876	0.932	0.953	-	0.953	0.972	0.992	1.012	1.033	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Airborne Mine Countermeasures (AMCM) Program Element (PE) provides resources to develop an advanced Mine Countermeasures (MCM) system to counter known and projected mine threats, as well as to develop post mission analysis software, integrated tactics and tactics training for mine warfare operations, and post mission analysis proficiency training.

The MCM systems provide mobile, quick reaction forces capable of land or sea-based minehunting and minesweeping operations worldwide. Resources are for developing and deploying advanced mine-sweeping systems and the intelligence and oceanographic capabilities that will enable mine warfare superiority. Tactics and techniques used vary across a diversity of environments and threats, including both asymmetric and emerging.

Resources provide for systems and support of mine warfare systems and expeditionary systems to allow for continuous operations of the Navy's warships and support vessels, other military vessels, and commercial vessels. Core capabilities include forward presence, deterrence, sea control, power projection, maritime security, humanitarian assistance and disaster response to maintain freedom of the seas. Capability improvements include reducing post-mission analysis time, reducing detect, classify, and identify decision time, improving neutralization time, improving network communications, automatic target recognition, and achieving in-stride detect-to-engage capability. Concept of operations includes development of cooperative, modular systems with a common post mission analysis system providing advanced tools to automate the complex problem of contact management for the thousands of recorded detections, the establishment of capable networked command and control systems, and standing up an accurate and interactive environmental system with the ability to form and disseminate a Common Environmental Picture. Efforts benefit the MCM force by transforming the Navy from the platform-centered legacy set of systems to a capability-centered force that is distributed, networked, and able to provide unique maritime influence and access across the entire maritime domain. The Airborne Mine Countermeasures (AMCM) programs will provide detection, classification, localization, identification, neutralization, influence sweep, and post mission analysis capabilities. This capability will be of critical importance in littoral zones, confined straits, choke points, and the Amphibious Objective Area (AOA).

Project 4026 Strat Into Medal, Tactics & Trng Organic Force has been renamed Net-Centric Sensor Analysis for Mine Warfare (NSAM). Post Mission Analysis (PMA) currently includes two projects: the legacy Organic Post Mission Analysis (OPMA) system and the next generation Net-Centric Sensor Analysis for Mine Warfare (NSAM) system.

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Navy	Date: February 2020
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604373N *I Airborne Mine Countermeasures*

Post mission analysis software is transitioning from legacy Organic Post Mission Analysis system to a next generation system called Net-centric Sensor Analysis for Mine Warfare (NSAM). NSAM will be the single tactical and environmental PMA system for all Mine Warfare (MIW) sensor data, and provide integrated contact management capabilities, which will automate contact management for the thousands of recorded detections by the MCM sensor systems. This next generation system will provide an extensible architecture to integrate current and future sensors and advanced algorithms. It will also create a collaborative, multi-user environment with the purpose of reducing the PMA timeline.

The Integrated Tactics project develops MIW tactics across multiple MCM communities, namely, airborne MCM, surface MCM, underwater and remote off-board. The project develops new tactics theory for emerging systems and operations and provides Fleet reach-back support and Fleet tactics training. Theory and tactics are documented and published into doctrine for Fleet users.

Project 9179 Surface Navy Integrated Undersea Tactical Technology (SNIUTT) is a software-only tool which provides PMA proficiency training. SNIUTT resides as a plug-in on existing PMA systems and focuses on providing contact recognition training, which is a perishable skill.

B. Program Change Summary ($ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	8.351	10.916	10.916	-	10.916
Current President's Budget	8.024	10.916	10.909	-	10.909
Total Adjustments	-0.327	0.000	-0.007	-	-0.007
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.327	0.000			
• Rate/Misc Adjustments	0.000	0.000	-0.007	-	-0.007

Change Summary Explanation

Program Adjustments:
FY19: $327K SBIR
FY20: No changes
FY21: $7K rate adjustment

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy			Date: February 2020
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604373N / *Airborne Mine Countermeasures*	Project (Number/Name) 4026 / *Net-Centric Sensor Analysis for Mine Warfare (NSAM)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
4026: *Net-Centric Sensor Analysis for Mine Warfare (NSAM)*	55.608	7.148	9.984	9.956	-	9.956	10.120	10.330	10.538	10.749	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Post Mission Analysis (PMA) currently includes two projects: the legacy Organic Post Mission Analysis (OPMA) system and the next generation Net-Centric Sensor Analysis for Mine Warfare (NSAM) system. OPMA provides PMA capabilities for the Airborne Laser Mine Detection System (ALMDS), the AN/AQS-20A sensor, and the Airborne Mine Neutralization System (AMNS); OPMA also contains a separate module for contact management. NSAM will be the replacement for OPMA and will begin fielding in FY21. NSAM will be the single tactical and environmental PMA system for all MIW sensor data and will provide integrated contact management capabilities. NSAM creates a collaborative, multi-data set, multi-user environment with the goal of reducing the mission timeline and increasing the mission effectiveness. Additionally, NSAM provides a training mode for operators to maintain proficiency and PMA skill sets.

NSAM is designed with an extensible architecture, to ease integration of additional sensors and advanced algorithms. The NSAM architecture and software development processes will reduce the cost for adding PMA and contact management capabilities of future MCM systems.

NSAM will be developed in incremental builds; efforts through FY19 integrated ALMDS, AMNS, AN/AQS-20A sensor PMA and contact management (B1.0); efforts through FY20 will add contact management for the AN/AQS-20C sensors (B1.1) and begin full AN/AQS-20C PMA integration (B1.3); FY21 efforts will begin UISS contact management (B1.2). Future incremental builds will add support for additional MCM sensor weapons systems. Additionally, NSAM will implement cybersecurity requirements using the new Risk Management Framework (RMF) process.

The Integrated Tactics project comprises integrated tactics development, theory development, and integrated tactics training. To date, the project has been focused on the Littoral Combat Ship (LCS) MCM Mission Module (MM), and all the related integrated tactics support from planning, execution, post-mission analysis and includes contact management automation methods. Additionally, the project develops doctrinal updates as well as new overall MCM theory.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: NSAM Product Development	3.815	5.127	5.114	0.000	5.114
Articles:	-	-	-	-	-
FY 2020 Plans: Continue NSAM software development based on the requirements package for Build 1.1 to integrate AN/AQS-20C contact management. Begin software development based on the requirements package for B1.3, AN/					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604373N / *Airborne Mine Countermeasures*	**Project (Number/Name)** 4026 / *Net-Centric Sensor Analysis for Mine Warfare (NSAM)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
AQS-20C PMA integration. Continue applying RMF guidelines and implement continuous monitoring strategy to continue to adhere to the ATO requirements. Continue annual update to add four chapters to the "Susceptibility of Ships to Threat Mines," Navy Tactical Reference Publication (NTRP) 3-15.2.2. Develop threat-specific tactics and procedures against Fleet validated threat list. Support tactics training needs for the LCS MCM mission package, and MIW Staffs by conducting tactics training continuums and wargames. ***FY 2021 Base Plans:*** Continue NSAM software development based on the requirements package for Build 1.3 AN/AQS-20C PMA; Begin software development for Build 1.2 UISS contact management. Continue applying RMF guidelines and implement continuous monitoring strategy to continue to adhere to the ATO requirements. Continue annual update to add four chapters to the "Susceptibility of Ships to Threat Mines," Navy Tactical Reference Publication (NTRP) 3-15.2.2. Develop tactical memorandum to document threat-specific tactics and procedures against Fleet validated threat list. Support tactics training needs for the LCS MCM mission package, and MIW Staffs by developing wargame scenarios and conducting wargames. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Funding level remains consistent for NSAM development efforts.					
Title: Engineering Services/ILS:	1.904	3.285	3.280	0.000	3.280
Articles:	-	-	-	-	-
FY 2020 Plans: Perform systems engineering and cybersecurity tasks to support NSAM Build 1.1 AN/AQS-20C contact management development. Develop specifications and interface documentation to inform future systems' integration with NSAM. Commence NSAM systems engineering and requirements analysis for B1.3 AN/ AQS-20C PMA. Continue updates to required logistics documents. Prepare NSAM training curriculum for B1.0 and B1.1. ***FY 2021 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604373N / *Airborne Mine Countermeasures*	**Project (Number/Name)** 4026 / *Net-Centric Sensor Analysis for Mine Warfare (NSAM)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Perform systems engineering and cybersecurity tasks to support B1.2 UISS contact management and B1.3 AN/AQS-20C PMA development. Support NSAM IOC. Complete training curriculum for B1.0 and B1.1. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Funding level remains consistent for NSAM engineering efforts.					
Title: Test and Evaluation	1.138	1.249	1.242	0.000	1.242
Articles:	-	-	-	-	-
FY 2020 Plans: Provide NSAM B1.0 ALMDS, AMNS, AN/AQS-20A test report. Develop NSAM Build 1.1 AN/AQS-20C contact management test procedures and support quarterly engineering deliveries to the LCS mission package application software lab. Conduct NSAM Build 1.1 AN/AQS-20C contact management testing and provide final test report. ***FY 2021 Base Plans:*** Develop NSAM Build 1.2 UISS contact management test procedures and support quarterly engineering deliveries to the LCS mission package application software lab. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Funding level remains consistent for NSAM test and evaluation efforts.					
Title: Management Support	0.291	0.323	0.320	0.000	0.320
Articles:	-	-	-	-	-
FY 2020 Plans: Continue to plan, track, follow-up and report on cost, schedule, and performance status of the project. Continue preparations for Milestone B. ***FY 2021 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604373N / *Airborne Mine Countermeasures*	**Project (Number/Name)** 4026 / *Net-Centric Sensor Analysis for Mine Warfare (NSAM)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Continue to plan, track, follow-up and report on cost, schedule, and performance status of the project. Conduct Milestone B and close-out actions following the Milestone B review. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Funding level remains consistent for NSAM management efforts.					
Accomplishments/Planned Programs Subtotals	7.148	9.984	9.956	0.000	9.956

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The Organic Post-Mission Analysis (OPMA) capability was developed by the Naval Surface Warfare Center (NSWC) Panama City Division (PCD), Panama City, FL. NSAM is the follow-on system to OPMA and is intended to be the Navy's single mine warfare post mission analysis system. NSAM will utilize government teams at NSWC PCD and Naval Research Laboratory - Stennis Space Center (NRL-SSC) to develop the system and provide significant improvements to OPMA for ALMDS, AMNS, and AN/AQS-20A with regards to contact management, data fusion techniques, and environmental PMA. NSAM is currently a pre-acquisition category IV-monitor program and plans to enter the acquisition process at Milestone B. NSAM will follow the DoD acquisition model for incrementally deployed software-intensive systems.

The Integrated Tactics project is a Fleet support project, executed by NSWC PCD. The project is an on-going/continuous project, which provides mine warfare tactics for areas where multiple MCM communities intersect. The project requirements and priorities are identified through close coordination and regular meetings with fleet users. Operational fleet units identify requirements and the project consults with fleet users to prioritize individual tasks each year. The project develops and updates tactics as fleet needs evolve, provides MCM tactics training to the fleet users, and updates tactics algorithms and databases with new threats, environmental data and system performance.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy			Date: February 2020
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604373N / *Airborne Mine Countermeasures*	Project (Number/Name) 4026 / *Net-Centric Sensor Analysis for Mine Warfare (NSAM)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware Software Development	WR	NSWC PCD : Panama City FL	29.127	3.225	Nov 2018	4.230	Nov 2019	4.220	Nov 2020	-		4.220	Continuing	Continuing	Continuing
Hardware/Software Development	WR	NRL-SSC : Bay St. Louis, MS	3.451	0.590	Dec 2018	0.897	Nov 2019	0.894	Nov 2020	-		0.894	Continuing	Continuing	Continuing
		Subtotal	32.578	3.815		5.127		5.114		-		5.114	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Services	WR	SSC-PAC : Various	0.040	0.000		0.000		0.000		-		0.000	0.000	0.040	-
Engineering Services	WR	NSWC PCD : Panama City FL	14.529	1.011	Nov 2018	2.098	Nov 2019	2.095	Nov 2020	-		2.095	Continuing	Continuing	Continuing
Engineering Services	WR	NRL-SSC : Bay St. Louis, MS	1.082	0.327	Dec 2018	0.328	Nov 2019	0.328	Nov 2020	-		0.328	Continuing	Continuing	Continuing
ILS	WR	NSWC PC : Panama City FL	2.939	0.566	Nov 2018	0.859	Nov 2019	0.857	Nov 2020	-		0.857	Continuing	Continuing	Continuing
		Subtotal	18.590	1.904		3.285		3.280		-		3.280	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NSAM Test and Evaluation	WR	NSWC PC : Panama City, FL	1.660	1.023	Nov 2018	0.775	Nov 2019	0.770	Nov 2020	-		0.770	0.000	4.228	-
NSAM Test and Evaluation	WR	NRL-SSC : Bay St Louis, MS	0.532	0.115	Dec 2018	0.124	Nov 2019	0.122	Nov 2020	-		0.122	0.000	0.893	-
NSAM Test & Evaluation	WR	JHU-APL : Laurel, MD	0.000	0.000		0.350	Nov 2019	0.350	Nov 2020	-		0.350	0.000	0.700	-
		Subtotal	2.192	1.138		1.249		1.242		-		1.242	0.000	5.821	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604373N / *Airborne Mine Countermeasures*	**Project (Number/Name)** 4026 / *Net-Centric Sensor Analysis for Mine Warfare (NSAM)*

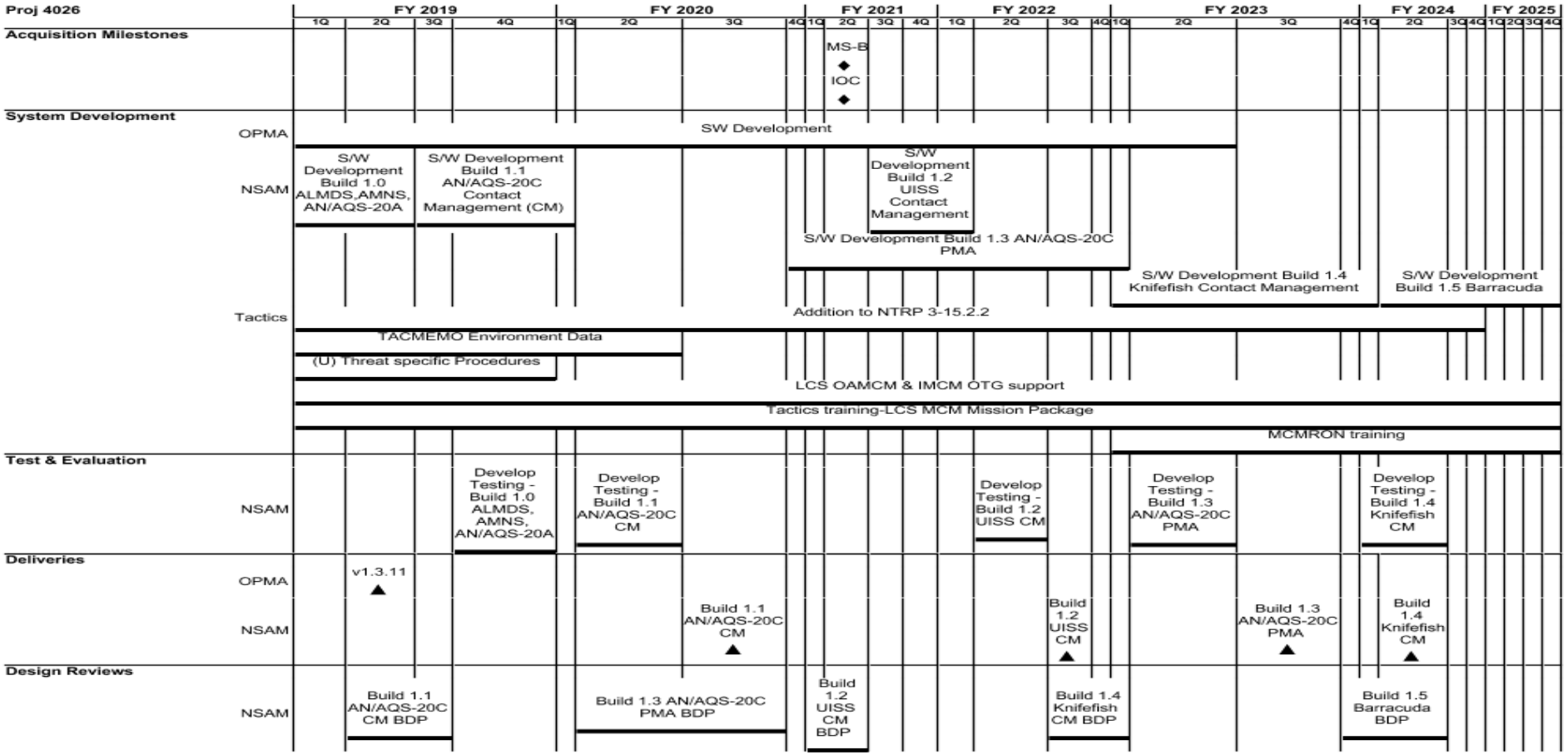
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Management Support	WR	NSWC PC : Panama City FL	2.235	0.291	Nov 2018	0.323	Nov 2019	0.320	Nov 2020	-		0.320	Continuing	Continuing	Continuing
Acquisition Workforce Fund	Various	Various : Various	0.013	0.000		0.000		0.000		-		0.000	0.000	0.013	-
		Subtotal	2.248	0.291		0.323		0.320		-		0.320	Continuing	Continuing	N/A

	Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	55.608	7.148		9.984		9.956		-		9.956	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604373N / *Airborne Mine Countermeasures*	**Project (Number/Name)** 4026 / *Net-Centric Sensor Analysis for Mine Warfare (NSAM)*



2021PB - 0604373N - 4026

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604373N / *Airborne Mine Countermeasures*	**Project (Number/Name)** 4026 / *Net-Centric Sensor Analysis for Mine Warfare (NSAM)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 4026				
Acquisition Milestones: NSAM: Milestone B	2	2021	2	2021
Acquisition Milestones: NSAM: Initial Operational Capability	2	2021	2	2021
System Development: OPMA: OPMA: Maintain & Support; Software	1	2019	2	2023
System Development: NSAM: NSAM: S/W Development Build 1.0 ALMDS,AMNS, AN/AQS-20A	1	2019	2	2019
System Development: NSAM: NSAM: S/W Development Build 1.1 AN/AQS-20C Contact Management (CM)	3	2019	1	2020
System Development: NSAM: NSAM: S/W Development Build 1.2 UISS Contact Management	3	2021	1	2022
System Development: NSAM: NSAM: S/W Development Build 1.3 AN/AQS-20C PMA	4	2020	1	2023
System Development: NSAM: NSAM: S/W Development Build 1.4 Knifefish Contact Management	1	2023	1	2024
System Development: NSAM: NSAM: S/W Development Build 1.5 Barracuda	2	2024	4	2025
System Development: Tactics: Add additional Mines to NTRP 3-15.2.2 Susceptibility of Ships to Threat Mines	1	2019	4	2024
System Development: Tactics: Tactics: TACMEMO Environment Data for LCS MCM Systems	1	2019	2	2020
System Development: Tactics: Tactics: (U) Threat specific Tactics and Procedures	1	2019	4	2019
System Development: Tactics: Tactics: Reachback LCS OAMCM & IMCM OTG support	1	2019	4	2025
System Development: Tactics: Tactics: Conduct contact management tactics and integrated tactics training for LCS MCM Mission Package	1	2019	4	2025

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604373N / *Airborne Mine Countermeasures*	**Project (Number/Name)** 4026 / *Net-Centric Sensor Analysis for Mine Warfare (NSAM)*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
System Development: Tactics: Tactics: Transition wargame functionality into official MCMRON training	1	2023	4	2025
Test & Evaluation: NSAM: NSAM: Developmental Testing Build 1.0 ALMDS, AMNS, AN/AQS-20A	4	2019	4	2019
Test & Evaluation: NSAM: NSAM: Developmental Testing Build 1.1 AN/AQS-20C Contact	2	2020	2	2020
Test & Evaluation: NSAM: NSAM: Developmental Testing Build 1.2 UISS Contact Management	2	2022	2	2022
Test & Evaluation: NSAM: NSAM: Developmental Testing Build 1.3 AN/AQS-20C PMA	2	2023	2	2023
Test & Evaluation: NSAM: NSAM: Developmental Testing Build 1.4 Knifefish Contact Management	1	2024	2	2024
Deliveries: OPMA: OPMA: Update OPMA v1.3.11 for LCS	2	2019	2	2019
Deliveries: NSAM: NSAM: Build 1.1 AN/AQS-20C Contact Management	3	2020	3	2020
Deliveries: NSAM: NSAM: Build 1.2 UISS Contact Management	3	2022	3	2022
Deliveries: NSAM: NSAM: Build 1.3 AN/AQS-20C PMA	3	2023	3	2023
Deliveries: NSAM: NSAM: Build 1.4 Knifefish Contact Management	2	2024	2	2024
Design Reviews: NSAM: NSAM: Build 1.1 AN/AQS-20C Contact Management Build Development Package (BDP)	2	2019	3	2019
Design Reviews: NSAM: NSAM: Build 1.2 UISS Contact Management Build Development Package (BDP)	1	2021	2	2021
Design Reviews: NSAM: NSAM: Build 1.3 AN/AQS-20C PMA Build Development Package (BDP)	2	2020	3	2020
Design Reviews: NSAM: NSAM: Build 1.4 Knifefish Contact Management Build Development Package (BDP)	3	2022	1	2023
Design Reviews: NSAM: NSAM: Build 1.5 Barracuda Build Development Package (BDP)	4	2023	2	2024

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy			Date: February 2020
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604373N / *Airborne Mine Countermeasures*	Project (Number/Name) 9179 / *Surf Navy Integ Undersea Tactical Tech*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
9179: *Surf Navy Integ Undersea Tactical Tech*	8.322	0.876	0.932	0.953	-	0.953	0.972	0.992	1.012	1.033	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Surface Navy Integrated Undersea Tactical Technology (SNIUTT) is a software-only tool, which develops post mission analysis (PMA) software training modules for MCM sensor systems. SNIUTT provides PMA classroom and operator training to teach mine contact recognition when performing PMA. The software runs in conjunction with existing PMA systems to reinforce training of PMA procedures and operator target recognition, either in the classroom or at the squadrons. SNIUTT currently provides PMA proficiency training for the legacy AN/AQS-24A/B sensors, and for ALMDS, COBRA and MCM-USV towed AN/AQS-20A/C sensor training modules.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Engineering and Integration and Logistics Services	0.057	0.105	0.118	0.000	0.118
Articles:	-	-	-	-	-
FY 2020 Plans: Develop high-level and derived requirements for SNIUTT software products. Continue to maintain and update the current online source code repository and SNIUTT requirements and documents. Continue SNIUTT software testing as part of the Agile software development process. Develop test cases and follow a test-fix-test process on beta builds; provide updated beta build to tactics teams for validation. Provide test results and generate test reports. Continue risk management framework process to obtain SNIUTT authority to operate.					
FY 2021 Base Plans: Develop high-level and derived requirements for SNIUTT software products. Continue to maintain and update the current online source code repository and SNIUTT requirements and documents. Continue SNIUTT software testing as part of the Agile software development process. Develop test cases and follow a test-fix-test process on beta builds; provide updated beta build to tactics teams for validation. Provide					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604373N / *Airborne Mine Countermeasures*	**Project (Number/Name)** 9179 / *Surf Navy Integ Undersea Tactical Tech*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
test results and generate test reports. Continue risk management framework process and ensure SNIUTT compliance with authority to operate. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Funding level remains consistent for SNUITT development efforts.					
Title: Hardware and Software Development	0.819	0.827	0.835	0.000	0.835
Articles:	-	-	-	-	-
FY 2020 Plans: Complete development of embedded operator training and plug-ins to support proficiency training for the Net-Centric Sensor Analysis for Mine Warfare (NSAM) application. Embedded training includes capabilities to launch and auto-grade training lessons for the ALMDS and AN/AQS-20A sensors; the plug-ins include the capability to create the training lessons for these sensors. Commence embedded training capability for NSAM. Complete refresher scenario trainer modules for COBRA and AN/AQS-24B. ***FY 2021 Base Plans:*** Commence embedded training capability for COBRA BLK 2 and AN/AQS-20C. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Funding level remains consistent for SNUITT development efforts.					
Accomplishments/Planned Programs Subtotals	0.876	0.932	0.953	0.000	0.953

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Surface Navy Integrated Undersea Tactical Technology (SNIUTT) is a software-only PMA proficiency training tool, developed by NSWC PCD. SNIUTT is an on-going project and continues to develop new training modules as new sensors become available. To date, SNIUTT has developed PMA training modules for AN/SQQ-32,

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604373N / *Airborne Mine Countermeasures*	**Project (Number/Name)** 9179 / *Surf Navy Integ Undersea Tactical Tech*

Remote Environmental Measuring Units (REMUS), AN/AQS-24A, AN/AQS-20A, ALMDS, and COBRA sensors. Specific SNIUTT training capabilities include refresher scenario-based contact recognition training, and the update and modification of contact recognition training (interactive web-based training) to support fleet operators. Continued funding will develop training SNIUTT modules for additional NSAM systems.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604373N / *Airborne Mine Countermeasures*	**Project (Number/Name)** 9179 / *Surf Navy Integ Undersea Tactical Tech*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware Software Development	WR	NSWC PC : Panama City FL	7.053	0.819	Oct 2018	0.827	Oct 2019	0.835	Oct 2020	-		0.835	Continuing	Continuing	Continuing
		Subtotal	7.053	0.819		0.827		0.835		-		0.835	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ISEA	WR	NSWC, PC : Panama City FL	1.266	0.057	Oct 2018	0.105	Oct 2019	0.118	Oct 2020	-		0.118	Continuing	Continuing	Continuing
		Subtotal	1.266	0.057		0.105		0.118		-		0.118	Continuing	Continuing	N/A

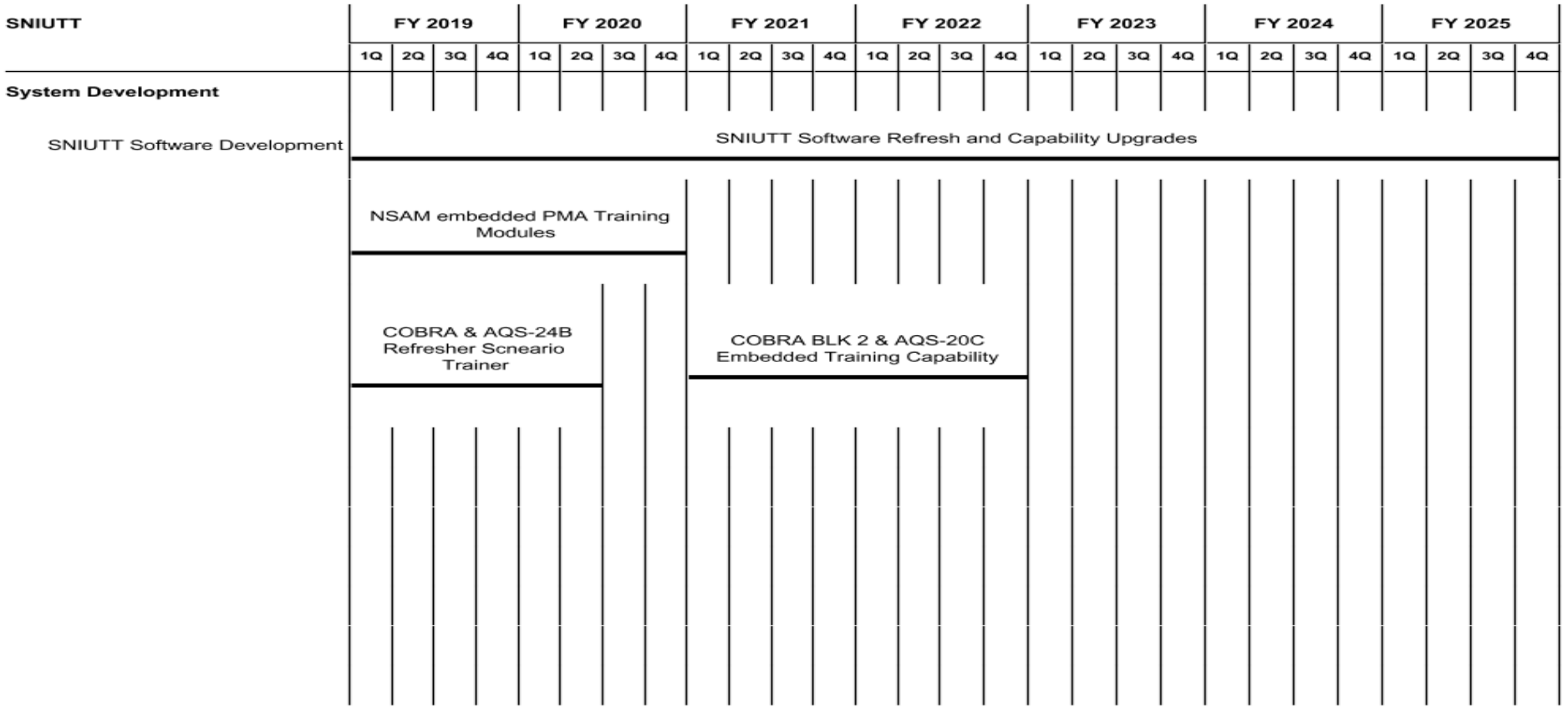
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DAWDF	Various	Various : Various	0.003	0.000		0.000		0.000		-		0.000	0.000	0.003	-
		Subtotal	0.003	0.000		0.000		0.000		-		0.000	0.000	0.003	N/A

	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	8.322	0.876		0.932		0.953		-		0.953	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604373N / *Airborne Mine Countermeasures*	**Project (Number/Name)** 9179 / *Surf Navy Integ Undersea Tactical Tech*



2021PB - 0604373N - 9179

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604373N / *Airborne Mine Countermeasures*	**Project (Number/Name)** 9179 / *Surf Navy Integ Undersea Tactical Tech*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
SNIUTT				
System Development: SNIUTT Software Development: SNIUTT Software Refresh and Capability Upgrades	1	2019	4	2025
System Development: SNIUTT Software Development: NSAM embedded PMA Training Modules	1	2019	4	2020
System Development: SNIUTT Software Development: Refresher scenario trainer for COBRA and AQS-24B	1	2019	2	2020
System Development: SNIUTT Software Development: COBRA BLK 2 & AQS-20C Embedded Training Capability	1	2021	4	2022