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 0603502N *I Surface & Shallow Water MCM*							
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	237.262	46.005	53.327	87.825	-	87.825	63.558	62.469	21.407	20.590	Continuing	Continuing
1234: *Unmanned Surface Vehicle (USV)*	161.432	18.463	20.277	24.887	-	24.887	23.211	19.058	19.336	18.838	Continuing	Continuing
2989: *Barracuda*	75.830	27.542	33.050	62.938	-	62.938	40.347	43.411	2.071	1.752	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element provides resources for development of unmanned mine countermeasures systems to provide minehunting, minesweeping, and mine neutralization to counter known and projected mine threats. The mine countermeasures systems provide mobile, quick reaction forces capable of land-based or sea-based minehunting and minesweeping operations worldwide. Resources are for developing and deploying advanced minehunting and minesweeping 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. Core capabilities include forward presence, deterrence, sea control, power projection, maritime security, humanitarian assistance and disaster response to maintain freedom of the seas. 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. Concept of operations includes development of cooperative, unmanned, modular systems; the establishment of a capable networked command and control system; and standing up an accurate and interactive environmental system with the ability to form and disseminate a Common Environmental Picture. Efforts benefit the Mine Countermeasure (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 Surface and Shallow Water MCM systems consist of two programs: The USV program develops: (1) unmanned surface minehunting capability USVs designed to integrate MCM systems employed by the Littoral Combat Ship (LCS) Class and other vessels of opportunity (VOO) platforms and (2) the integration and improvement of new and existing MCM capabilities and payloads (Minesweeping Payload Deployment System [PDS] , Minehunting PDS, and Mine Neutralization PDS) to provide detection, classification, localization, identification, neutralization, and influence clearance capabilities.

The Barracuda system is an expendable, modular, mine neutralizer launched from the Mine Countermeasures (MCM) Unmanned Surface Vessel (USV) as part of the Littoral Combat Ship (LCS) MCM Mission Package (MP) to autonomously reacquire and neutralize previously detected near-surface mines. Upon entering the water, the vehicle will conduct a search, capture an image, and use a communications buoy to send the image to the operator in the MCM MP to evaluate the image and order the weapon to fire, abort, or continue searching. Future capabilities may include launch from manned or unmanned aircraft or vessels of opportunity as well as the ability to neutralize mines in volume and on the bottom.

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 0603502N *I Surface & Shallow Water MCM*

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	47.575	58.013	0.000	-	0.000
Current President's Budget	46.005	53.327	87.825	-	87.825
Total Adjustments	-1.570	-4.686	87.825	-	87.825
• Congressional General Reductions	-	-0.064			
• Congressional Directed Reductions	-	-4.622			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.010	0.000			
• SBIR/STTR Transfer	-1.560	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	-	-	87.825	-	87.825

Change Summary Explanation

FY 2021: reduced by $1,560K for SBIR assessments and $10K for reprogramming actions.
FY 2022: reduced by $4,622K for Barracuda schedule delays and $64K for Congressional General Reductions.

Technical: Not applicable.
Schedule: Not applicable.

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 0603502N / *Surface & Shallow Water MCM*				Project (Number/Name) 1234 / *Unmanned Surface Vehicle (USV)*			
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**
1234: *Unmanned Surface Vehicle (USV)*	161.432	18.463	20.277	24.887	-	24.887	23.211	19.058	19.336	18.838	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

In FY20, the UISS program was subsumed into the MCM USV program.

A. Mission Description and Budget Item Justification

The MCM USV program consists of Unmanned Surface Vehicles (USVs) with Mine Countermeasures (MCM) payloads. The program began as the Unmanned Influence Sweep System (UISS) program which consisted of a USV paired with a magnetic and acoustic sweep capability. As the USV progressed, the Navy modified the program so the craft would integrated
and operate other payloads. The UISS program has been subsumed by the MCM USV program.
The program consists of four products:
1) The MCM USV is a semi-autonomous dual drive, 38 foot long, 10 foot wide aluminum hulled craft powered by two diesel engines. The craft contains a situational awareness and contact avoidance suite consisting of optical, radar, and GPS and is directed and monitored by line of sight radio with a host station, such as LCS, Vessel of Opportunity (VOO), or
shore site. The reconfigurable payload pay adds a modular mission capability enabling multiple payloads (mine sweep, mine hunt, mine neutralize).
2) The Mine Sweep Payload Delivery System (PDS) brings magnetic and acoustic mine influence sweep capability to the MCM USV. The PDS includes a winch, a magnetic
sweepcable, and a towed acoustic generator along with capability to deploy and retrieve the towed equipment.
3) The Mine Hunt PDS brings a mine hunting capability by integrating the existing AN/AQS-20 on to the craft. The PDS includes a winch, cable and tow body handling equipment.
4) The Mine Neutralization PDS will neutralize mines previously identified throughout the water column using the Barracuda Mine Neutralizer. The PDS will consist of a launcher and communications gear to communicate with the neutralizer in the water.

The program completed IOT&E in FY21 will declare Initial Operational Capability Full-Rate Production Decision (FRPD). Mine Hunt integration was completed in Q1FY22. Shipbased TECHEVAL and IOT&E will complete in FY22. The UISS program reduced funding for Mine Neutralization Payload development prioritizing the completion of Minesweeping and Minehunting capabilities. This will extend Mine Neutralization payload design activities and Engineering Development Model (EDM) into early FY25. MCM USV and Mine Neutralization Payload Integration and Payload qualification will occur in FY26 and developmental testing with the Barracuda Mine Neutralizer in FY27.

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 0603502N / *Surface & Shallow Water MCM*	**Project (Number/Name)** 1234 / *Unmanned Surface Vehicle (USV)*

The MCM USV program will have a continuing reliability, autonomy and cyber-security engineering changes process. The program has developed improvements to address IOT&E findings. Leveraging ongoing developments for autonomous systems, the program will continue to develop performance improvements into improvement upgrade blocks. The blocks will consist
of processing and sensing hardware, autonomy and situational awareness/contact avoidance algorithms, and command and control software improvements for the MCM USV and associated payloads. Engineering Change Proposals (ECPs) will be delivered in blocks over a two year cycle. Cybersecurity ECPs will be developed, tested, and released twice a year starting in FY23.

The MCM USV program will support LCS MCM MP IOT&E on the Independence variant in FY22 with two craft providing both Minesweep and Minehunt capability to the Mission Package. The program will support test analysis, reporting, and address findings in FY23.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: MCM USV Product Development	10.841	13.562	16.661	0.000	16.661
Articles:	-	-	-	-	-
FY 2022 Plans: - Continue tactics development, requirements definition, and design of Mine Neutralization (Barracuda) payload and integration with MCM USV. Design reference mission profile. - Deliver Top-level requirements for Barracuda integration. - Continue initial design of Mine Neutralization (Barracuda) payload and integration with MCM USV. - Develop reliability directed Engineering Change Proposal (ECPs).					
FY 2023 Base Plans: - Complete Top-Level Requirements for Barracuda effort. - Continue initial design of Mine Neutralization (Barracuda) payload and integration with MCM USV. - Commence USV Advance Autonomy Development effort					
FY 2023 OCO Plans: N/A					
FY 2022 to FY 2023 Increase/Decrease Statement: - Funding increased to accelerate Barracuda Neutralization payload and Advanced Autonomy development.					
Title: MCM USV Support	3.295	3.256	7.455	0.000	7.455
Articles:	-	-	-	-	-
FY 2022 Plans: - Continue to support integration, testing, and assessment of system capabilities with MCM Mission Package. - Update MCM USV documentation to include Mine Neutralization, Minehunting, and Minesweeping.					

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 0603502N / *Surface & Shallow Water MCM*	**Project (Number/Name)** 1234 / *Unmanned Surface Vehicle (USV)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
- Commence Engineering Change Proposal (ECP) development based on UISS test reporting. ***FY 2023 Base Plans:*** - Execute performance, autonomy, and cybersecurity improvement process for ECPs. - Design and deliver hardware improvements for ECPs. - Develop preliminary software build plan for ECPs. - Develop, test, and release Cybersecurity ECPs. - Develop, test and release reliability ECPs. - Develop Maintainability enhancements ECPs ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding increased to support Engineering Change Proposal (ECP) stack development process.					
Title: MCM USV Test and Evaluation	3.255	3.313	0.625	0.000	0.625
Articles:	-	-	-	-	-
FY 2022 Plans: - Conduct Minehunting TECHEVAL and Initial Operation Test and Evaluation (IOT&E). - Support of MCM MP End to End IOT&E efforts. - Support MCM MP IOT&E. ***FY 2023 Base Plans:*** - Conduct integration related test analysis, reporting, and address findings from Minehunt TECHEVAL and IOT&E as well as MCM MP testing. ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding decrease due to a reduction in scheduled test events in FY23.					
Title: MCM USV Management Services	0.146	0.146	0.146	0.000	0.146
Articles:	-	-	-	-	-
FY 2022 Plans: - Provide program planning, management and acquisition document updates for the MCM USV program.					

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 0603502N / *Surface & Shallow Water MCM*	**Project (Number/Name)** 1234 / *Unmanned Surface Vehicle (USV)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
- Manage payload development contract and options. ***FY 2023 Base Plans:*** - Provide program planning, management and acquisition document updates for the MCM USV program. - Manage payload development contract and options. ***FY 2023 OCO Plans:*** N/A					
Title: MHU Support	0.926	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2022 Plans: N/A ***FY 2023 Base Plans:*** N/A ***FY 2023 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	18.463	20.277	24.887	0.000	24.887

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/1601: *LCS MCM Mission Modules*	189.397	30.119	94.987	-	94.987	165.038	180.874	163.658	121.516	1,496.842	2,855.192

Remarks

RDT&E/0603596N - Funding shown only reflects funding for required USV development efforts.

OPN/1601 - The above funding line accounts for several programs, of which the Unmanned Surface Vehicle programs are only a portion.

OPN/2622 - The above funding line accounts for several programs, of which the Unmanned Surface Vehicle programs are only a portion.

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 0603502N / *Surface & Shallow Water MCM*	**Project (Number/Name)** 1234 / *Unmanned Surface Vehicle (USV)*

D. Acquisition Strategy

UISS - Requirements are documented in the Unmanned Influence Sweep System (UISS) Capability Production Document (CPD). An Engineering and Manufacturing Development (E&MD) contract was awarded in FY14 with options for Low Rate Initial Production (LRIP) in FY19.

In FY20, Mine Countermeasure Unmanned Surface Vehicle (MCM USV) awarded three LRIP craft with sweep payload, following a Milestone C Decision on development contract.

In FY20-21, MCM USV developed a Capability Production Document (CPD) Annex leveraging existing requirements (UISS, AN/AQS-20, MCM MP, etc.).

In FY21, MCM USV craft and Minesweep Payload completed IOT&E testing, validating technical data package for production. Program transitioned from concept development to mine neutralization initial requirements definition and design. Based on demonstrated performance improvements, a fourth LRIP was authorized and procured.

In FY22, MCM USV will accomplish IOT&E for Minehunt Payload (with AN/AQS-20). MCM USV will complete Full Rate Production (FRP) decision and award a craft production contract via a full and open competition. Program will continue development and design of the mine neutralization payload. Minehunt Payload LRIP/s will be procured to support MP requirements.

In FY23, MCM USV will continue mine neutralization payload design and development,

In FY24, The program will complete Barracuda launcher Payload Delivery System Design. Minesweep Payload and Minehunt Payload FR production will be procured under the Multiple Award Contracts (MAC) Indefinite Delivery Indefinite Quantity (IDIQ) USV Family of Systems Contract.

In FY25, the program will start Engineering Design Model Fabrication and integration onto the craft.

In FY26, MCM USV craft and payload integration will complete to support Barracuda Mine Neutralizer testing in FY27.

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 0603502N / *Surface & Shallow Water MCM*	**Project (Number/Name)** 1234 / *Unmanned Surface Vehicle (USV)*

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
UISS: Product Development	C/CPIF	Textron Systems, Inc : Hunt Valley, MD	33.145	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
MHU: Product Development	SS/CPFF	JHU APL : Laurel, MD	12.215	0.000		0.000		0.000		-		0.000	0.000	12.215	-
MHU: Product Development	C/FPIF	Textron Systems, Inc : Hunt Valley, MD	7.545	0.000		0.000		0.000		-		0.000	0.000	7.545	-
MHU: Product Development	WR	NSWC PC : Panama City, FL	0.922	0.000		0.000		0.000		-		0.000	0.000	0.922	-
MHU: Product Development	WR	NUWC N : Newport, RI	0.740	0.000		0.000		0.000		-		0.000	0.000	0.740	-
MHU: Product Development	WR	NSWC CD : Bethesda, MD	0.235	0.000		0.000		0.000		-		0.000	0.000	0.235	-
MHU: Product Development	WR	Various : Various	0.570	0.000		0.000		0.000		-		0.000	0.000	0.570	-
MCM USV: Product Development 1	C/CPIF	Textron Systems, Inc : Hunt Valley, MD	2.050	0.000		0.000		0.000		-		0.000	0.000	2.050	-
MCM USV: Product Development 2	C/FPIF	Textron Systems, Inc : Hunt Valley, MD	15.559	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
MCM USV: Product Development1	C/CPFF	Textron Systems, Inc : Hunt Valley, MD	12.075	5.346	Nov 2020	1.021	Nov 2021	0.000		-		0.000	Continuing	Continuing	Continuing
MCM USV: Product Development	SS/CPFF	Raytheon : Portsmouth, RI	13.977	1.000	Feb 2021	0.300	Feb 2022	0.000		-		0.000	Continuing	Continuing	Continuing
MCM USV: Product Development	SS/CPFF	JHU APL : Laurel, MD	2.250	1.000	Feb 2021	1.235	Feb 2022	1.316	Feb 2023	-		1.316	Continuing	Continuing	Continuing
MCM USV: Product Development	WR	NSWC PC : Panama City, FL	6.535	2.441	Nov 2020	1.652	Nov 2021	3.552	Dec 2022	-		3.552	Continuing	Continuing	Continuing
MCM USV: Product Development	WR	NUWC N : Newport, RI	1.695	0.296	Nov 2020	0.323	Nov 2021	0.078	Dec 2022	-		0.078	Continuing	Continuing	Continuing
MCM USV: Product Development	WR	NSWC CD : Bethesda, MD	3.569	0.758	Nov 2020	0.443	Nov 2021	0.892	Dec 2022	-		0.892	Continuing	Continuing	Continuing
MCM USV: Product Development	C/IDIQ	TBD : TBD	0.000	0.000		8.588	Jan 2022	9.881	Jan 2023	-		9.881	0.000	18.469	-

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 0603502N / *Surface & Shallow Water MCM*	**Project (Number/Name)** 1234 / *Unmanned Surface Vehicle (USV)*

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
MCM USV: Product Development	WR	NSWC PH : Philadelphia, PA	0.000	0.000		0.000		0.899	Oct 2022	-		0.899	0.000	0.899	-
		Subtotal	113.082	10.841		13.562		16.618		-		16.618	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
UISS: Engineering Support	WR	NUWC N : Newport, RI	0.850	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
UISS: Engineering Support	WR	NSWC PC : Panama City, FL	2.289	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
UISS: Engineering Support	WR	NSWC CD : Bethesda, MD	1.911	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
UISS: Engineering Support	C/CPFF	Textron Systems, Inc : Hunt Valley, MD	1.270	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
UISS: Integrated Logistics	WR	NSWC PC : Panama City, FL	0.665	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
UISS: Integrated Logistics	WR	NSWC CD : Bethesda, MD	0.951	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
UISS: Integrated Logistics	C/CPFF	Textron Systems, Inc : Hunt Valley, MD	1.128	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
MHU: Engineering Support	WR	SSC PAC : San Diego, CA	0.404	0.040	Dec 2020	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
MHU: Engineering Support	WR	NSWC PC : Panama City, FL	2.614	0.846	Feb 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
MHU: Engineering Support	WR	NUWC N : Newport, RI	0.853	0.000		0.000		0.000		-		0.000	0.000	0.853	-
MHU: Engineering Support	WR	NSWC CD : Bethesda, MD	0.344	0.040	Dec 2020	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
MHU: Engineering Support	WR	Various : Various	0.520	0.000		0.000		0.000		-		0.000	0.000	0.520	-

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 0603502N / *Surface & Shallow Water MCM*	**Project (Number/Name)** 1234 / *Unmanned Surface Vehicle (USV)*	

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
MCM USV: Engineering Support	WR	NSWC PC : Panama City, FL	6.878	1.038	Nov 2020	1.354	Nov 2021	3.149	Dec 2022	-		3.149	Continuing	Continuing	Continuing
MCM USV: Engineering Support	WR	NUWC N : Newport, RI	3.670	0.443	Nov 2020	0.434	Nov 2021	0.230	Dec 2022	-		0.230	Continuing	Continuing	Continuing
MCM USV: Engineering Support	WR	NSWC CD : Bethesda, MD	0.700	0.235	Nov 2020	0.232	Nov 2021	2.597	Dec 2022	-		2.597	0.000	3.764	-
MCM USV: Engineering Support	C/CPFF	Textron Systems, Inc : Hunt Valley, MD	1.215	0.590	Nov 2020	0.423	Nov 2021	1.522	Dec 2022	-		1.522	Continuing	Continuing	Continuing
MCM USV: Integrated Logistics	WR	NSWC PC : Panama City, FL	0.062	0.099	Nov 2020	0.219	Nov 2021	0.000		-		0.000	0.000	0.380	-
MCM USV: Integrated Logistics	WR	NSWC CD : Bethesda, MD	0.061	0.089	Nov 2020	0.092	Nov 2021	0.000		-		0.000	0.000	0.242	-
MCM USV: Integrated Logistics	SS/CPFF	Raytheon : Portsmouth, RI	0.800	0.178	Jan 2021	0.050	Jan 2022	0.000		-		0.000	Continuing	Continuing	Continuing
MCM USV: Integrated Logistics	SS/CPFF	Northrup Grumman : Annapolis, MD	0.600	0.178	Jan 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
MCM USV: Integrated Logistics	C/CPFF	Textron Systems, Inc : Hunt Valley, MD	1.794	0.445	Dec 2020	0.452	Dec 2021	0.000		-		0.000	Continuing	Continuing	Continuing
		Subtotal	29.579	4.221		3.256		7.498		-		7.498	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
UISS: Test and Evaluation	WR	NSWC PC : Panama City, FL	2.055	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
UISS: Test and Evaluation	WR	NSWC CD : Bethesda, MD	1.731	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
UISS: Test and Evaluation	C/CPIF	Textron Systems, Inc : Hunt Valley, MD	1.884	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
MCM USV: Test and Evaluation	WR	NSWC PC : Panama City, FL	4.550	1.465	Dec 2020	1.495	Dec 2021	0.343	Dec 2022	-		0.343	Continuing	Continuing	Continuing

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 0603502N / *Surface & Shallow Water MCM*	**Project (Number/Name)** 1234 / *Unmanned Surface Vehicle (USV)*

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
MCM USV: Test and Evaluation	WR	NSWC CD : Bethesda, MD	1.700	0.879	Dec 2020	0.897	Dec 2021	0.282	Dec 2022	-		0.282	Continuing	Continuing	Continuing
MCM USV: Test and Evaluation	SS/CPFF	Raytheon : Portsmouth, RI	0.900	0.325	Dec 2020	0.323	Dec 2021	0.000		-		0.000	Continuing	Continuing	Continuing
MCM USV: Test and Evaluation	C/CPFF	Textron Systems, Inc : Hunt Valley, MD	2.500	0.586	Dec 2020	0.598	Dec 2021	0.000		-		0.000	0.000	3.684	-
		Subtotal	15.320	3.255		3.313		0.625		-		0.625	Continuing	Continuing	N/A

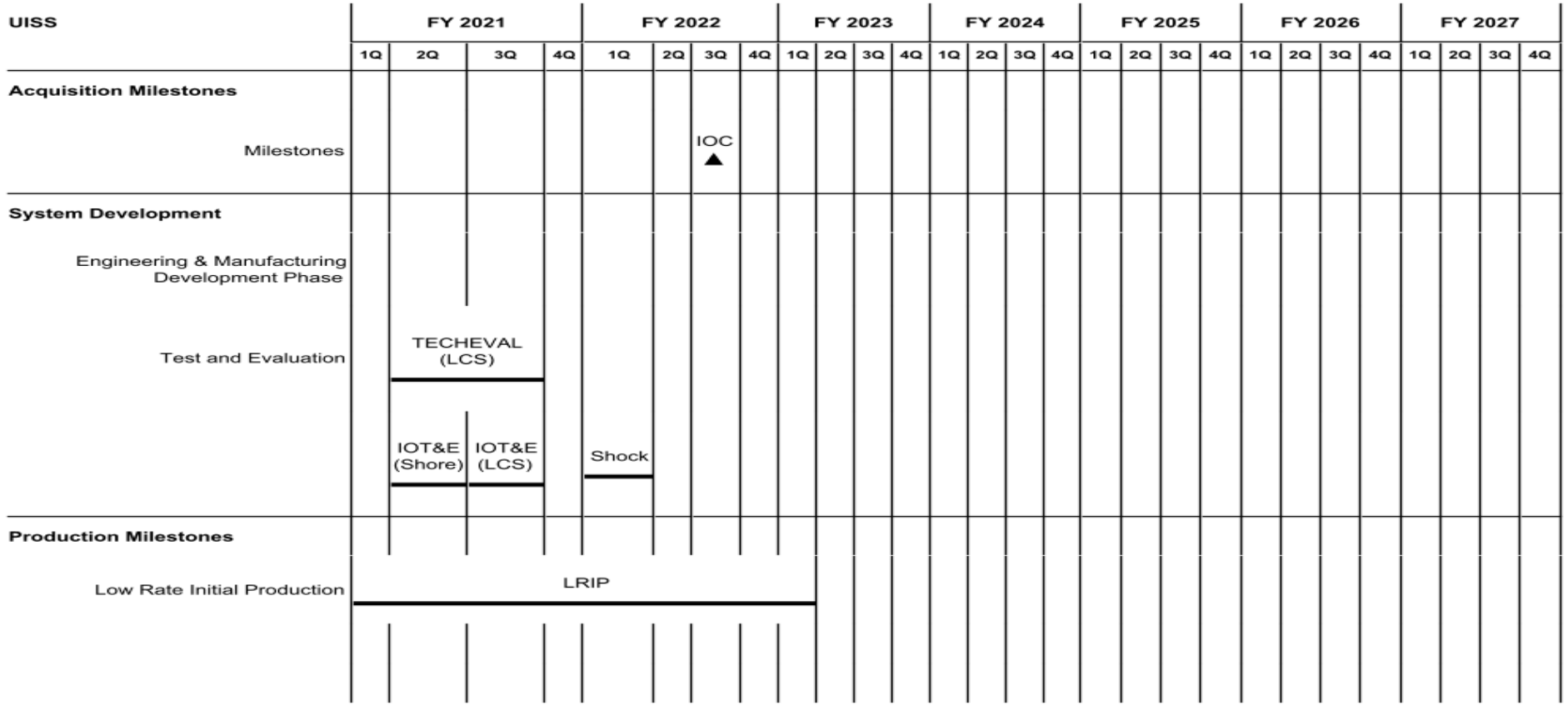
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
UISS: Travel	WR	NAVSEA : Washington, DC	0.295	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
UISS: Management	C/CPAF	TBD : TBD	2.274	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
MCM USV: Travel	WR	NAVSEA : Washington, DC	0.320	0.069	Jan 2021	0.069	Jan 2022	0.055	Jan 2023	-		0.055	Continuing	Continuing	Continuing
MCM USV: Management	C/CPAF	TBD : TBD	0.562	0.077	Nov 2020	0.077	Nov 2021	0.091	Nov 2022	-		0.091	Continuing	Continuing	Continuing
		Subtotal	3.451	0.146		0.146		0.146		-		0.146	Continuing	Continuing	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	161.432	18.463		20.277		24.887		-		24.887	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 0603502N / *Surface & Shallow Water MCM*	**Project (Number/Name)** 1234 / *Unmanned Surface Vehicle (USV)*



2023PB - 0603502N - 1234

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 0603502N / *Surface & Shallow Water MCM*	**Project (Number/Name)** 1234 / *Unmanned Surface Vehicle (USV)*

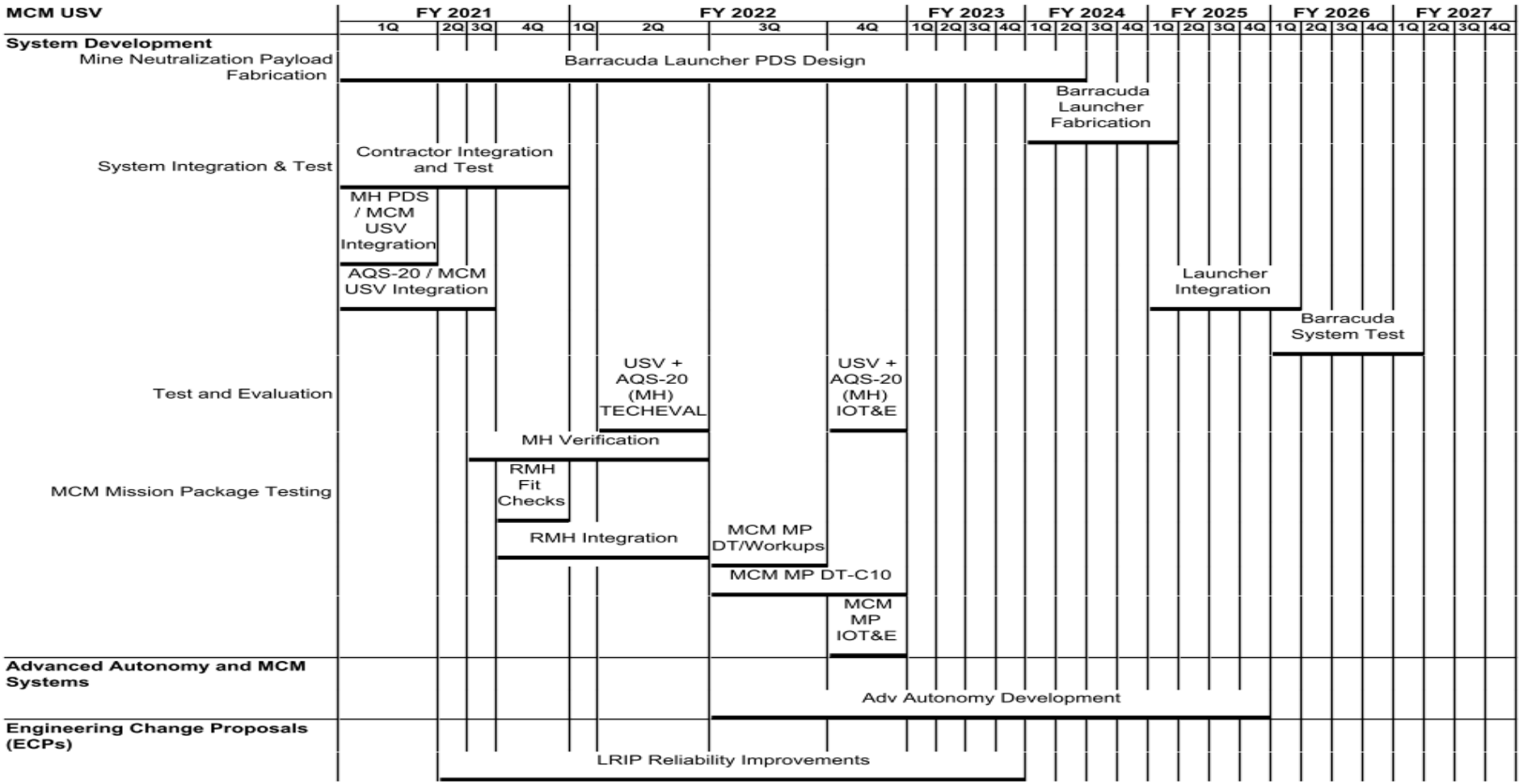
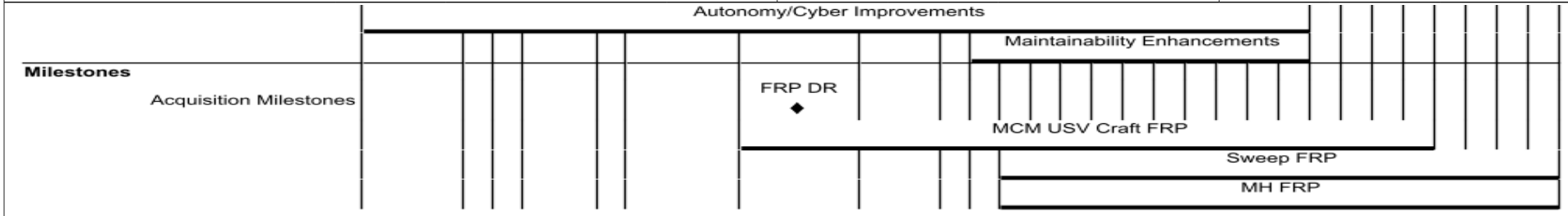


Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603502N / *Surface & Shallow Water MCM*	**Project (Number/Name)** 1234 / *Unmanned Surface Vehicle (USV)*



2023PB - 0603502N - 1234

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 0603502N / *Surface & Shallow Water MCM*	**Project (Number/Name)** 1234 / *Unmanned Surface Vehicle (USV)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
UISS				
Acquisition Milestones: Milestones: Initial Operational Capability	3	2022	3	2022
System Development: Test and Evaluation: TECHEVAL (LCS-Based San Diego)	2	2021	3	2021
System Development: Test and Evaluation: IOT&E (Shore-Based NSWC PCD)	2	2021	2	2021
System Development: Test and Evaluation: IOT&E (LCS-Based San Diego)	3	2021	3	2021
System Development: Test and Evaluation: Shock Testing	1	2022	1	2022
Production Milestones: Low Rate Initial Production: LRIP Production	1	2021	1	2023
MCM USV				
System Development: Mine Neutralization Payload Fabrication: Barracuda Launcher / Payload Delivery System (PDS) Design	1	2021	2	2024
System Development: Mine Neutralization Payload Fabrication: Barracuda Launcher Fabrication	1	2024	1	2025
System Development: System Integration & Test: System Integration and Test	1	2021	4	2021
System Development: System Integration & Test: Minehunting Payload Delivery System (PDS) / MCM USV Integration	1	2021	1	2021
System Development: System Integration & Test: AQS-20 / MCM USV Integration (Lab, Pier-Side, At-Sea)	1	2021	3	2021
System Development: System Integration & Test: Barracuda Launcher Integration	1	2025	1	2026
System Development: System Integration & Test: Barracuda System Test	1	2026	1	2027
System Development: Test and Evaluation: USV + AQS-20 (Minehunting) TECHEVAL	2	2022	2	2022
System Development: Test and Evaluation: USV + AQS-20 (Minehunting) IOT&E	4	2022	4	2022
System Development: Test and Evaluation: MH Performance Verification Testing	3	2021	2	2022
System Development: MCM Mission Package Testing: RMH MM / LCS Fit Checks	4	2021	4	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 0603502N / *Surface & Shallow Water MCM*	**Project (Number/Name)** 1234 / *Unmanned Surface Vehicle (USV)*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
System Development: MCM Mission Package Testing: RMH MM / LCS Integration Testing	4	2021	2	2022
System Development: MCM Mission Package Testing: Developmental Testing	3	2022	3	2022
System Development: MCM Mission Package Testing: MCM MP DT-C10	3	2022	4	2022
System Development: MCM Mission Package Testing: IOT&E	4	2022	4	2022
Advanced Autonomy and MCM Systems: Advanced Autonomy Development	3	2022	4	2025
Engineering Change Proposals (ECPs): LRIP Reliability Improvements	2	2021	4	2023
Engineering Change Proposals (ECPs): Autonomy/Cyber Improvements (Ongoing)	1	2021	4	2025
Engineering Change Proposals (ECPs): Long-Term Maintainability Enhancements (Ongoing)	2	2023	4	2025
Milestones: Acquisition Milestones: MCM USV Full Rate Production Decision Review	3	2022	3	2022
Milestones: Acquisition Milestones: MCM USV Full Rate Production	3	2022	4	2026
Milestones: Acquisition Milestones: Minesweeping PDS Full Rate Production	3	2023	4	2027
Milestones: Acquisition Milestones: Minehunting PDS Full Rate Production	3	2023	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 0603502N / *Surface & Shallow Water MCM*	Project (Number/Name) 2989 / *Barracuda*	

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
2989: *Barracuda*	75.830	27.542	33.050	62.938	-	62.938	40.347	43.411	2.071	1.752	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

FY 2023 reflects a net increase of $29.888 million which supports the development and contract option award of Barracuda Engineering Development Models (EDMs) and associated support equipment to support Government Developmental Testing (DT), starting in FY 2024.

The Barracuda system is an expendable, modular, mine neutralizer launched from the Mine Countermeasures (MCM) Unmanned Surface Vessel (USV) as part of the Littoral Combat Ship (LCS) MCM Mission Package (MP) to autonomously reacquire and neutralize previously detected near-surface mines. Upon entering the water, the vehicle will conduct a search, capture an image, and use a communications buoy to send the image to the operator in the MCM MP to evaluate the image and order the weapon to fire, abort, or continue searching.

Future capabilities may include launch from manned or unmanned aircraft or vessels of opportunity as well as the ability to neutralize mines in volume and on the bottom.

The Barracuda detailed design and development contract includes system design, program management, systems engineering, software development, integrated product support and contractor testing.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Barracuda: Product Development	24.552	28.966	58.740	0.000	58.740
Articles:	-	-	-	-	-
FY 2022 Plans: - Complete system prototyping and development and initiate subsystem qualification and system design verification. - Complete the design of the SIL, PSE, and TSE. - Commence initial Critical Design Reviews (CDR) for incremental approach to detailed system design. - Conduct battery integration, initiate coordination with host and deployment platform integration, commence training and technical manual documentation as part of Barracuda system development.					
FY 2023 Base Plans: - Complete final Critical Design Review for detailed design and initial product baseline.					

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 0603502N / *Surface & Shallow Water MCM*	**Project (Number/Name)** 2989 / *Barracuda*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
- Develop and award contract option for Barracuda Engineering Development Models (EDMs) for planned FY 2024 delivery. - Conduct full vehicle assembly, integration, and checkout of contractor test assets based on the detailed design delivered to the Government at the Critical Design Review. - Commence qualification testing of contractor test assets to verify the detailed design, assembly, and integration of vehicles and support equipment against contract requirements. ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY 2022 to FY 2023 increase is due to contract option award for Barracuda Engineering Development Models (EDMs).					
Title: Barracuda: Engineering Support	2.745	3.774	3.881	0.000	3.881
Articles:	-	-	-	-	-
FY 2022 Plans: - Continue to conduct and manage technical and safety reviews as design matures. - Continue evaluation and management of contractor deliverables, overseeing system engineering design and maintain system configuration management. - Continue management of detailed system design and commence initial Critical Design Reviews for incremental approach to detailed system design. - Coordinate host and deployment platform integration including the C2 functionality. ***FY 2023 Base Plans:*** - Support final Critical Design Review for approval of detailed design and initial product baseline. - Continue to conduct and manage technical documents, safety reviews, and contractor test plans and reports. - Continue management of contract deliverables and begin transition of system configuration management to the Government. - Continue to coordinate host and deployment platform compatibility and integration efforts. ***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 0603502N / *Surface & Shallow Water MCM*	**Project (Number/Name)** 2989 / *Barracuda*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
FY 2022 to FY 2023 increase is associated with the transition of system configuration management to the Government.					
Title: Barracuda: Management Services	0.245	0.310	0.317	0.000	0.317
Articles:	-	-	-	-	-
FY 2022 Plans: - Continue to provide program management, financial management and engineering support.					
FY 2023 Base Plans: - Continue to provide program management, financial management and engineering support.					
FY 2023 OCO Plans: N/A					
FY 2022 to FY 2023 Increase/Decrease Statement: FY 2022 to FY 2023 increase is associated with support of Engineering Development Model (EDM) procurement.					
Accomplishments/Planned Programs Subtotals	27.542	33.050	62.938	0.000	62.938

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The Barracuda program awarded a competitive contract in FY 2018 to Raytheon Technologies Missiles and Defense (formerly Raytheon Integrated Defense Systems) in Portsmouth, RI. The Barracuda program is developing a semi-autonomous mine neutralization system that will be incorporated in LCS MCM MP. Initial concepts were based on small UUVs developed as part of the ONR Single Sortie, Detect to Engage Future Naval Capabilities project (FY 2015-FY 2018).

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 0603502N / *Surface & Shallow Water MCM*	**Project (Number/Name)** 2989 / *Barracuda*

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
Barracuda Hardware/ Support	C/CPIF	Raytheon (Integrated Defense Systems) : Portsmouth, RI	62.120	24.552	Dec 2020	28.966	Dec 2021	58.740	Dec 2022	-		58.740	Continuing	Continuing	Continuing
		Subtotal	62.120	24.552		28.966		58.740		-		58.740	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
Barracuda Engineering Support	WR	NUWC NPT : Newport, RI	1.330	0.344	Dec 2020	0.409	Dec 2021	0.412	Dec 2022	-		0.412	0.425	2.920	-
Barracuda Engineering Services	C/CPIF	JHU APL : Baltimore, MD	1.767	0.263	Dec 2020	0.532	Dec 2021	0.543	Dec 2022	-		0.543	0.576	3.681	-
Barracuda Engineering Support	WR	NSWC, PC : Panama City, FL	5.196	1.587	Nov 2020	2.088	Nov 2021	2.174	Nov 2022	-		2.174	3.361	14.406	-
Barracuda Support	WR	NSWC, IHD : Indian Head, MD	2.912	0.262	Nov 2020	0.330	Nov 2021	0.333	Nov 2022	-		0.333	0.357	4.194	-
Barracuda Support	WR	Naval Research Lab : Washington, DC	0.865	0.061	Dec 2020	0.109	Dec 2021	0.111	Dec 2022	-		0.111	0.118	1.264	-
Barracuda Support	WR	NSWC, Carderock : Bethesda, MD	0.841	0.228	Nov 2020	0.306	Nov 2021	0.308	Nov 2022	-		0.308	3.331	5.014	-
		Subtotal	12.911	2.745		3.774		3.881		-		3.881	8.168	31.479	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Barracuda Management Support	WR	NSWC, PC : Panama City, FL	0.799	0.245	Nov 2020	0.310	Nov 2021	0.317	Nov 2022	-		0.317	1.674	3.345	-
		Subtotal	0.799	0.245		0.310		0.317		-		0.317	1.674	3.345	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 0603502N / *Surface & Shallow Water MCM*	Project (Number/Name) 2989 / *Barracuda*	

	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	75.830	27.542		33.050		62.938		-		62.938	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 0603502N / *Surface & Shallow Water MCM*	**Project (Number/Name)** 2989 / *Barracuda*

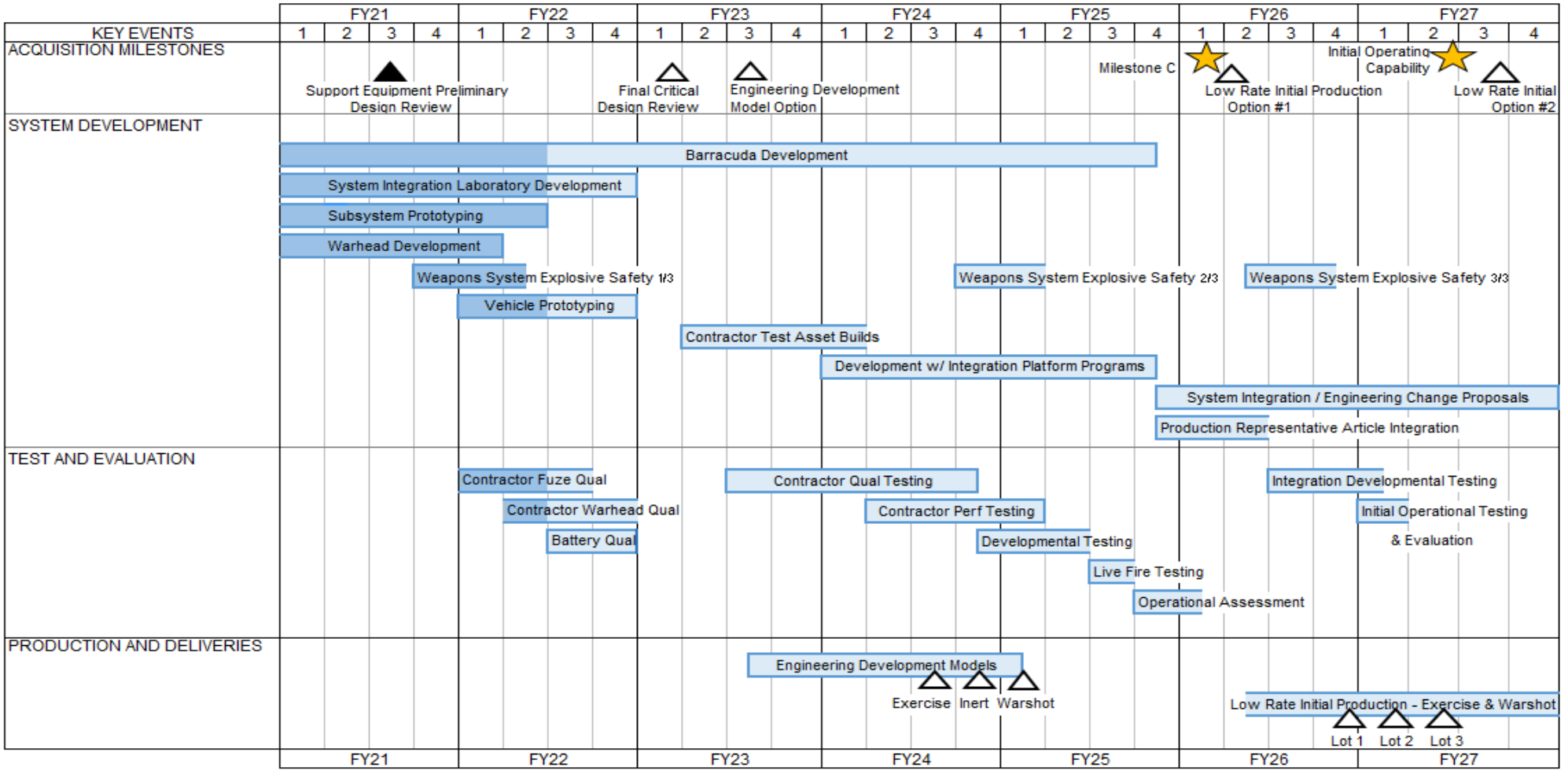


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603502N / *Surface & Shallow Water MCM*	**Project (Number/Name)** 2989 / *Barracuda*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Acquisition Milestones				
Barracuda Acquisition Milestones: Support Equipment Preliminary Design Review	3	2021	3	2021
Barracuda Acquisition Milestones: Final Critical Design Review	1	2023	1	2023
Barracuda Acquisition Milestones: Engineering Development Models (EDM) Contract Option	3	2023	3	2023
Barracuda Acquisition Milestones: Milestone C	1	2026	1	2026
Barracuda Acquisition Milestones: Low Rate Initial Production Units Contract Option #1	2	2026	2	2026
Barracuda Acquisition Milestones: Initial Operating Capability	2	2027	2	2027
Barracuda Acquisition Milestones: Low Rate Initial Production Units Contract Option #2	3	2027	3	2027
System Development: Barracuda Development	1	2021	4	2025
System Development: Systems Integration Laboratory Development	1	2021	4	2022
System Development: Subsystem Prototyping	1	2021	2	2022
System Development: Warhead Development	1	2021	1	2022
System Development: Weapons Systems Explosive Safety Review Board 1/3	1	2021	2	2022
System Development: Vehicle Prototyping	1	2022	4	2022
System Development: Contractor Test Asset Builds	2	2023	1	2024
System Development: Development with Integration Platform Programs	1	2024	4	2025
System Development: Weapons Systems Explosive Safety Review Board 2/3	4	2024	1	2025
System Development: System Integration/Engineering Change Proposals	4	2025	4	2027
System Development: Production Representative Article Integration	4	2025	2	2026
System Development: Weapons Systems Explosive Safety Review Board 3/3	2	2026	4	2026
Test and Evaluation: Contractor Fuze Qualification	1	2022	3	2022

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 0603502N / *Surface & Shallow Water MCM*	**Project (Number/Name)** 2989 / *Barracuda*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Test and Evaluation: Contractor Warhead Qualification	2	2022	4	2022
Test and Evaluation: Contractor Battery Qualification	3	2022	4	2022
Test and Evaluation: Contractor System Qualification	3	2023	4	2024
Test and Evaluation: Contractor System Performance	2	2024	1	2025
Test and Evaluation: Developmental Testing	4	2024	2	2025
Test and Evaluation: Live Fire Testing	3	2025	3	2025
Test and Evaluation: Operational Assessment	4	2025	1	2026
Test and Evaluation: Integration Developmental Testing	3	2026	1	2027
Test and Evaluation: Initial Operational Test and Evaluation	1	2027	1	2027
Production and Deliveries: Engineering Development Models (EDMs) Production	3	2023	1	2025
Production and Deliveries: Exercise Variant EDMs Delivery	3	2024	3	2024
Production and Deliveries: Inert Variant EDMs Delivery	4	2024	4	2024
Production and Deliveries: Warshot Variant EDMs Delivery	1	2025	1	2025
Production and Deliveries: Low Rate Initial Production (LRIP)	2	2026	4	2027
Production and Deliveries: LRIP Lot 1 Unit Delivery	4	2026	4	2026
Production and Deliveries: LRIP Lot 2 Unit Delivery	1	2027	1	2027
Production and Deliveries: LRIP Lot 3 Unit Delivery	2	2027	2	2027