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 0603254N *I ASW Systems Development*

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	150.106	18.029	20.598	15.986	-	15.986	17.021	20.065	20.395	20.767	Continuing	Continuing
1292: *Adv ASW Sensors & Proc*	150.106	15.133	17.598	15.986	-	15.986	17.021	20.065	20.395	20.767	Continuing	Continuing
9999: *Congressional Adds*	0.000	2.896	3.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.896

A. Mission Description and Budget Item Justification

Includes RDT&E funds for advanced development and developmental testing of airborne anti-submarine warfare (ASW) systems, including aircraft, equipment, and devices for use against all types of submarine targets.

JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under ADVANCED COMPONENT DEVELOPMENT AND PROTOTYPES because it includes all efforts necessary to evaluate integrated technologies, representative models or prototype systems in a high fidelity and realistic operating environment.

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	18.500	17.612	0.000	-	0.000
Current President's Budget	18.029	20.598	15.986	-	15.986
Total Adjustments	-0.471	2.986	15.986	-	15.986
• Congressional General Reductions	-	-0.014			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	3.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.471	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	-	-	15.986	-	15.986

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2021	FY 2022
Project: 9999: *Congressional Adds*		
Congressional Add: *Program Increase*	2.896	0.000
Congressional Add: *Innovative AWS technologies*	0.000	3.000
Congressional Add Subtotals for Project: 9999	2.896	3.000

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 0603254N *I ASW Systems Development*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2021	FY 2022
Congressional Add Totals for all Projects	2.896	3.000

Change Summary Explanation

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 0603254N / *ASW Systems Development*	Project (Number/Name) 1292 / *Adv ASW Sensors & Proc*	

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
1292: *Adv ASW Sensors & Proc*	150.106	15.133	17.598	15.986	-	15.986	17.021	20.065	20.395	20.767	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This program provides Air Anti-Submarine Warfare (ASW) effectiveness through development and maturation of advanced hardware and software associated with airborne acoustic and non-acoustic systems. This includes sensors and components, processing, post-processing, data recording and display capabilities to address regional threat scenarios against surfaced or submerged conventionally and nuclear powered submarines. Key objectives are platform accommodations of advanced active and passive sensors and components, improved detection, classification, localization and tracking; and increased capacity and flexibility to handle multi-sensor data loads. Furthermore, technologies that can be affordably implemented as payloads across fixed wing, rotary and unmanned platforms engaged in ASW will be pursued. Technology evaluations include Over the Horizon (OTH) communications, sonobuoy communication link to/from aircraft, Distributed Netted Sensors, transient signals, and source and receiver improvement technologies that will enhance passive and multistatic active sensor systems capabilities. Programs being funded during the FYDP will provide for the development and maturation of persistent tactical search technologies that will allow transition to the localization and attack phase in all operationally relevant environments. In addition, the program will provide for the development and subsequent experimentation, including data collection and engineering measurement, of the next generation of Multistatic Active Coherent (MAC) sources and receivers, laser technologies, electro-optical and multi-spectral camera technologies, radar, and Magnetic Anomaly Detection (MAD) sensors. Those technologies that are deemed mature and provide increased operational capability will be approved for transition, maturation, and implementation in a production Rapid Capability Insertion (RCI) build. The test articles, which consist of sensors, components and associated processors, will support at-sea trials and experiments.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: System performance assessments	15.133	17.598	15.986	0.000	15.986
Articles:	100	100	90	-	90
FY 2022 Plans: Continue to develop and validate an air-deployable vertical line array prototype sensor for UnderSea Advantage. Employ the related test articles, models, processors and algorithms in air-deployable demonstrations and related laboratory or in-water experiments to validate technical maturity and assess operational performance. The test articles employed in at-sea experimentation and over-the-side testing consists of prototype components developed for sensor system maturation, verification and performance. Mature prototype signal processing and air-deployable hardware for data collections and at-sea experimentation. Conduct data analyses to evaluate the prototype hardware and mature the associated algorithms leveraging science and technology, research and development, and operational Fleet-collected data. Conduct sensor and system performance assessments, gap analyses of the effects-chains, rapid prototyping and demonstration of the next generation of MAC system					

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 0603254N / *ASW Systems Development*	**Project (Number/Name)** 1292 / *Adv ASW Sensors & Proc*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
components, advancements in passive sensing, and enhancements of other acoustic and non-acoustic for traditional and high altitude airborne ASW operations. ***FY 2023 Base Plans:*** Continue to mature the air-deployable vertical line array prototype sensor for UnderSea Advantage by employing the related test articles, models, processors and algorithms in air-deployable demonstrations to validate technical maturity and assess operational performance. Continue to leverage operational Fleet-collected data, execute test(s) in relevant operational environments, and conduct data analyses to evaluate the prototype hardware and associated algorithms while progressing towards the acquisition-phase by leveraging performance assessments, gap analyses, and rapid prototyping to demonstrate the next generation of MAC system components, through advancements in high-gain passive sensing. ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** The FY23 decrease will delay the maturation and culminating demonstration of the USA prototype capability, therefore, delaying the initial demo to the fourth quarter of FY 2025.					
Accomplishments/Planned Programs Subtotals	15.133	17.598	15.986	0.000	15.986

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
• RDT&E/0480: *ASW Sensors & Proc*	41.860	40.181	46.001	-	46.001	45.176	45.432	46.053	46.815	Continuing	Continuing

Remarks

D. Acquisition Strategy

Develop and mature promising acoustic and non-acoustic ASW technologies that have high potential for meeting documented capability gaps and Fleet requirements. As funding permits, transition those technologies into acquisition programs of record for eventual Fleet release on ASW platforms.

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 0603254N / *ASW Systems Development*	Project (Number/Name) 1292 / *Adv ASW Sensors & Proc*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hdw Development	Various	Various : Various	7.173	5.002	Dec 2020	5.559	Dec 2021	5.066	Dec 2022	-		5.066	Continuing	Continuing	Continuing
		Subtotal	7.173	5.002		5.559		5.066		-		5.066	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
Software Development	WR	NAWCAD : PATUXENT RIVER, MD	8.545	3.243	Dec 2020	3.780	Dec 2021	3.546	Dec 2022	-		3.546	0.000	19.114	-
Studies & Analysis	WR	NAWCAD : PATUXENT RIVER, MD	10.851	1.925	Dec 2020	2.636	Dec 2021	2.363	Dec 2022	-		2.363	Continuing	Continuing	Continuing
		Subtotal	19.396	5.168		6.416		5.909		-		5.909	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
Dev Test & Eval	Various	Various : Various	29.510	3.058	Dec 2020	3.588	Dec 2021	3.150	Dec 2022	-		3.150	Continuing	Continuing	Continuing
		Subtotal	29.510	3.058		3.588		3.150		-		3.150	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
Contractor Eng Spt	Various	Various : Various	24.533	1.057	Dec 2020	1.186	Dec 2021	1.103	Dec 2022	-		1.103	Continuing	Continuing	Continuing
ENG & TECH SVCS (NON-FFRDC)	Various	Various : Various	3.294	0.100	Dec 2020	0.100	Dec 2021	0.100	Dec 2022	-		0.100	Continuing	Continuing	Continuing
MGT & PROF SVCS (FFRDC)	Various	Various : Various	1.757	0.100	Dec 2020	0.100	Dec 2021	0.100	Dec 2022	-		0.100	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 0603254N / *ASW Systems Development*	Project (Number/Name) 1292 / *Adv ASW Sensors & Proc*

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
Government Eng Spt	WR	NAWCAD : PATUXENT RIVER, MD	64.263	0.640	Dec 2020	0.641	Dec 2021	0.550	Dec 2022	-		0.550	Continuing	Continuing	Continuing
Travel	Various	VARIOUS : VARIOUS	0.180	0.008	Dec 2020	0.008	Dec 2021	0.008	Dec 2022	-		0.008	Continuing	Continuing	Continuing
		Subtotal	94.027	1.905		2.035		1.861		-		1.861	Continuing	Continuing	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	150.106	15.133		17.598		15.986		-		15.986	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 0603254N / *ASW Systems Development*	**Project (Number/Name)** 1292 / *Adv ASW Sensors & Proc*

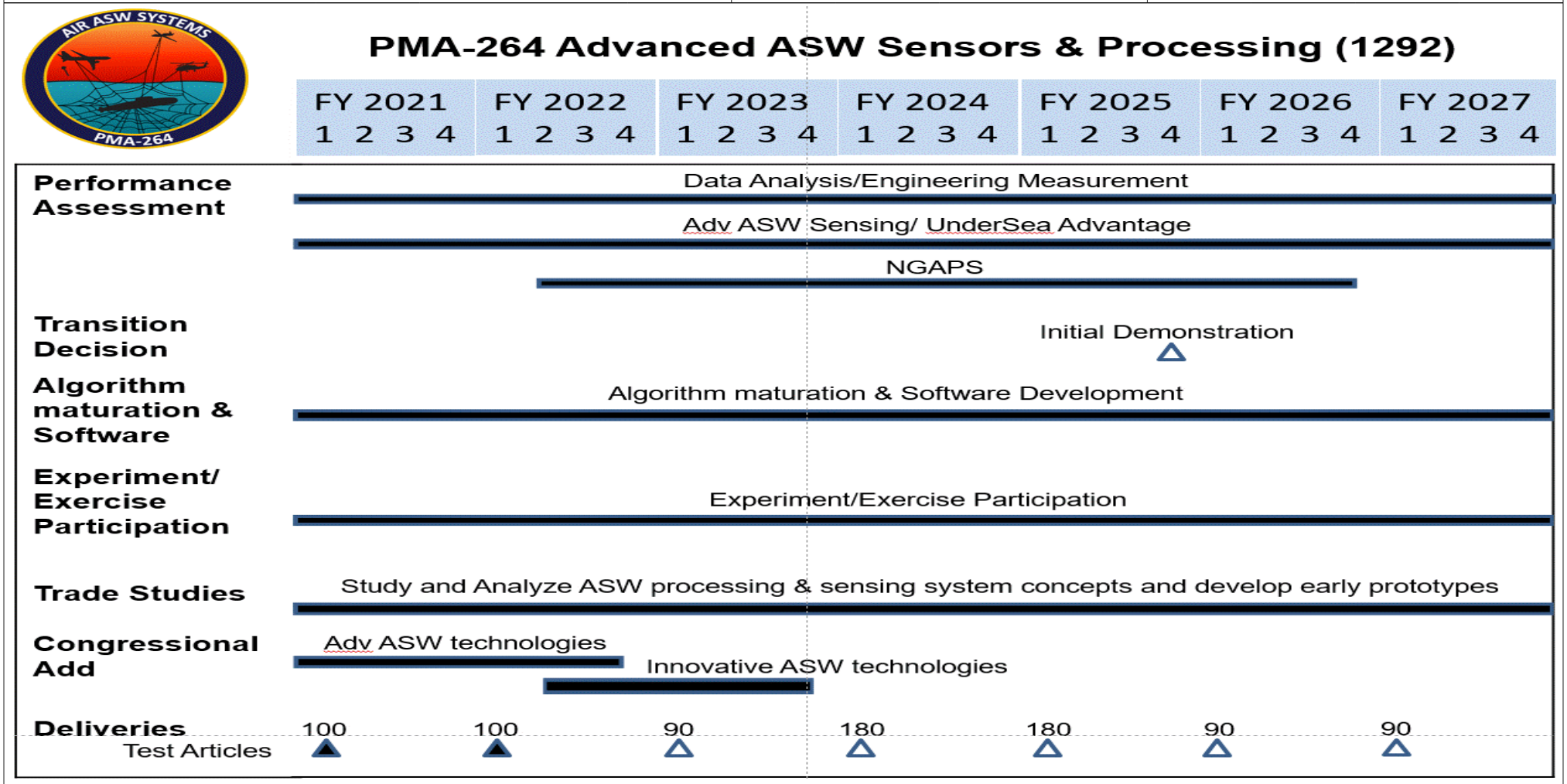

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603254N / *ASW Systems Development*	**Project (Number/Name)** 1292 / *Adv ASW Sensors & Proc*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj: 1292 - Adv ASW Sensors & Processors				
Performance Assessment: Data Analysis/Engineering Measurement	1	2021	4	2027
Performance Assessment: Advanced ASW sensing / Undersea Advantage	1	2021	4	2027
Performance Assessment: Next Generation Airborne Passive System	2	2022	4	2026
Transition Decision: Initial Demonstration	4	2025	4	2025
Algorithm maturation & Software: Algorithm maturation & Software Development	1	2021	4	2027
Experiment/Exercise Participation: Experiment/Exercise Participation	1	2021	4	2027
Trade Studies: Trade Studies	1	2021	4	2027
Congressional Add: Adv ASW technologies	1	2021	4	2022
Congressional Add: Innovative ASW technologies	2	2022	4	2023
Deliveries: Test Articles: Test Article Deliveries (10)	1	2021	1	2021
Deliveries: Test Articles: Test Article Deliveries (11)	1	2022	1	2022
Deliveries: Test Articles: Test Article Deliveries (12)	1	2023	1	2023
Deliveries: Test Articles: Test Article Deliveries (13)	1	2024	1	2024
Deliveries: Test Articles: Test Article Deliveries (14)	1	2025	1	2025
Deliveries: Test Articles: Test Article Deliveries (15)	1	2026	1	2026
Deliveries: Test Articles: Test Article Deliveries (16)	1	2027	1	2027

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy			Date: April 2022
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603254N / *ASW Systems Development*	Project (Number/Name) 9999 / *Congressional Adds*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
9999: *Congressional Adds*	0.000	2.896	3.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.896
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Congressional Add.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022
Congressional Add: Program Increase ***FY 2021 Accomplishments:*** N/A ***FY 2022 Plans:*** N/A	2.896	0.000
Congressional Add: Innovative AWS technologies ***FY 2021 Accomplishments:*** N/A ***FY 2022 Plans:*** Support Congressional Add efforts.	0.000	3.000
Congressional Adds Subtotals	2.896	3.000

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• RDTE/1292: *ASW SYSTEMS DEVELOPMENT*	15.133	17.598	15.986	-	15.986	17.021	20.065	20.395	20.767	Continuing	Continuing

Remarks

D. Acquisition Strategy

Develop and mature promising acoustic and non-acoustic ASW technologies that have high potential for meeting documented capability gaps and Fleet requirements.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603254N / *ASW Systems Development*	Project (Number/Name) 9999 / *Congressional Adds*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	Various : Various	0.000	1.442	Jun 2022	1.500	Jun 2022	0.000		-		0.000	0.000	2.942	-
		Subtotal	0.000	1.442		1.500		0.000		-		0.000	0.000	2.942	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
Software Development	Various	Various : Various	0.000	0.476	May 2021	0.600	Jun 2022	0.000		-		0.000	0.000	1.076	-
Studies and Analysis	Various	Various : Various	0.000	0.678	Aug 2021	0.650	Jun 2022	0.000		-		0.000	0.000	1.328	-
		Subtotal	0.000	1.154		1.250		0.000		-		0.000	0.000	2.404	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
Government Engineering Spt	WR	NAWCAD : PATUXENT RIVER, MD	0.000	0.300	Nov 2021	0.250	May 2022	0.000		-		0.000	0.000	0.550	-
		Subtotal	0.000	0.300		0.250		0.000		-		0.000	0.000	0.550	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	2.896		3.000		0.000		-		0.000	0.000	5.896	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 0603254N / *ASW Systems Development*	**Project (Number/Name)** 9999 / *Congressional Adds*

PMA-264 Advanced ASW Sensors & Processing (1292)

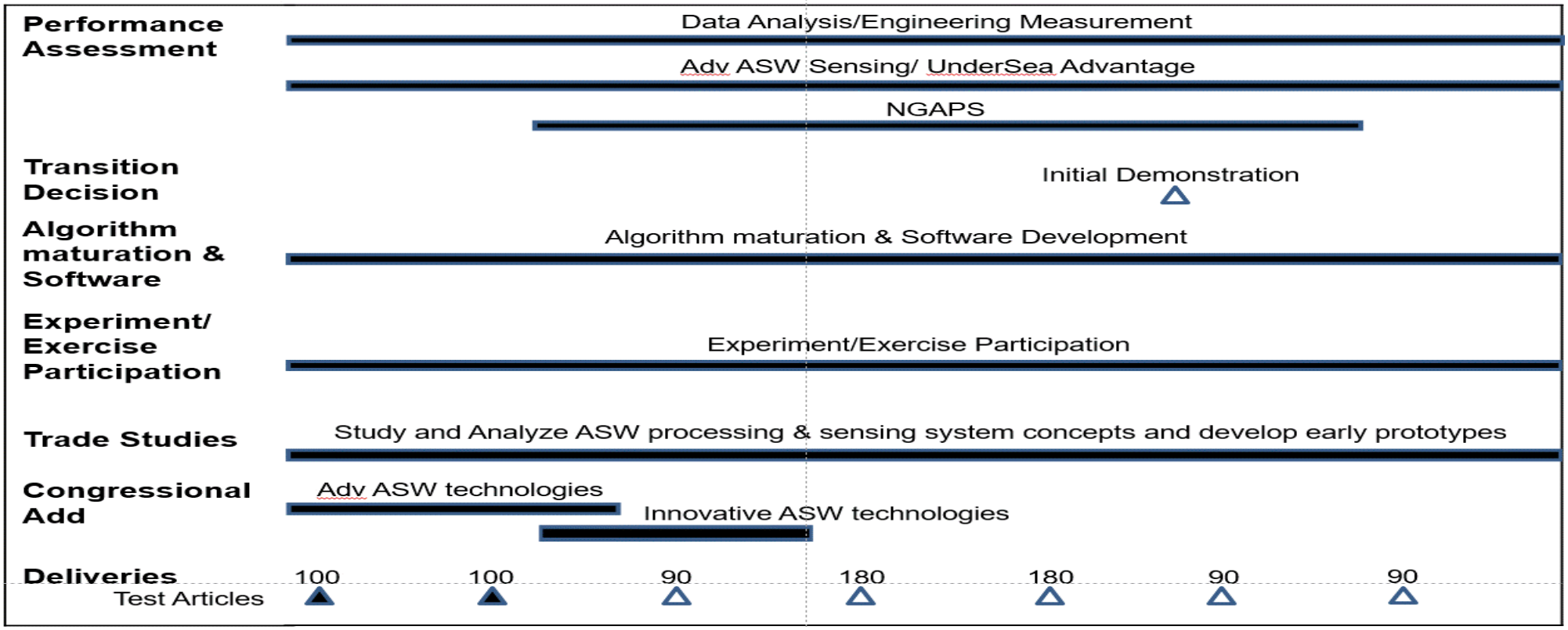

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603254N / *ASW Systems Development*	**Project (Number/Name)** 9999 / *Congressional Adds*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj: 1292 - Adv ASW Sensors & Processors				
Performance Assessment: Data Analysis/Engineering Measurement	1	2021	4	2027
Performance Assessment: Advanced ASW sensing / Undersea Advantage	1	2021	4	2027
Performance Assessment: Next Generation Airborne Passive System	2	2022	4	2026
Transition Decision: Initial Demonstration	4	2025	4	2025
Algorithm maturation & Software: Algorithm maturation & Software Development	1	2021	4	2027
Experiment/Exercise Participation: Experiment/Exercise Participation	1	2021	4	2027
Trade Studies: Trade Studies	1	2021	4	2027
Congressional Add: Adv ASW technologies	1	2021	4	2022
Congressional Add: Innovative ASW technologies	2	2022	4	2023
Deliveries: Test Article Deliveries (10)	1	2021	1	2021
Deliveries: Test Article Deliveries (11)	1	2022	1	2022
Deliveries: Test Article Deliveries (12)	1	2023	1	2023
Deliveries: Test Article Deliveries (13)	1	2024	1	2024
Deliveries: Test Article Deliveries (14)	1	2025	1	2025
Deliveries: Test Article Deliveries (15)	1	2026	1	2026
Deliveries: Test Article Deliveries (16)	1	2027	1	2027