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 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605500N *I Multi-Mission Maritime Aircraft (MMA) (P-8A)*

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	52.622	23.266	27.279	37.939	-	37.939	38.661	45.053	47.065	47.853	Continuing	Continuing
3368: *P-8 Improvements*	52.622	23.266	27.279	37.939	-	37.939	38.661	45.053	47.065	47.853	Continuing	Continuing

Program MDAP/MAIS Code:
Project MDAP/MAIS Code(s): 334

A. Mission Description and Budget Item Justification

The P-8A Multi-mission Maritime Aircraft (MMA) program was initiated in response to the Joint Requirements Oversight Council (JROC) validated Mission Needs Statement, "Broad Area Maritime and Littoral Armed Intelligence, Surveillance and Reconnaissance" and the requirements for the program are defined in the P-8A Capability Production Document #791-88-09, validated and approved on 22 June 2009. A successful Critical Design Review was completed in June 2007. In August 2007 the Design Readiness Review was conducted and resulted in approval to obligate funding for the fabrication of the Stage II flight test aircraft. The first flight of P-8A occurred on 25 Apr 2009. Milestone C was successfully completed on 11 August 2010. The program completed Initial Operational Test and Evaluation (IOT&E) in March 2013 and achieved Initial Operational Capability (IOC) in November 2013. The Acquisition Decision Memorandum approved entry into Full Rate Production on January 3, 2014.

The primary objectives of Systems Development and Demonstration (SDD) are to perform the system detailed design, develop and produce Systems Integration Labs, develop and build ground and flight test articles, and conduct ground and flight tests to successfully achieve program milestones. Ground testing includes the conduct of static testing, fatigue testing and Live Fire Test and Evaluation. Six flight test aircraft have been built during SDD (PU 2696). These test aircraft are grouped into two stages based on which phase of the test program the aircraft will support. SDD Stage I flight test aircraft (FY06/Qty-3) support Integrated Test and Evaluation (IT&E). SDD Stage II flight test aircraft (FY09/Qty-3) supported the completion of IT&E and IOT&E after being updated to the production configuration. The SDD contract includes the development and initial building of training devices to support IOT&E. The scope of SDD includes activities necessary to facilitate an efficient transition of the fleet to achieve the P-8A IOC of SDD (PU 2696) in CY13. The scope of SDD also includes the engineering and verification of corrected deficiencies identified in testing and Fleet operational use. P-8A entered Production and Deployment phase in the 4th quarter of FY10 and entered Full Rate Production in 2nd quarter of FY14.

The P-8A MMA program's Assured Maritime Dominance Anti-Submarine Warfare (ASW), Anti-Surface Warfare (ASuW), and Intelligence, Surveillance, and Reconnaissance (ISR) activities include a sequence of Rapid Capability Insertions (RCI) and rapid development efforts to respond to evolving threats and adversary capabilities, which will retain cost effectiveness for winning major combat operations. In order to pace the threat, these efforts will incorporate incremental software and/or hardware improvements to existing sensor capabilities, communications systems, mission systems, weapons capabilities, training systems and Tactical Operations Center (TOC) /Tacmobile support to build on the P-8A capability baseline. These planned and emergent requirements will be prioritized through either the Navy Integration and interoperability (I&I) aligned Capability Prioritization Process (CPP), P-8A Tier 3 Capability Roadmap and/or through Fleet identification of an Urgent Operational Need. The CPP process is supported by detailed analysis and the maturations of developing technologies.

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 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605500N *I Multi-Mission Maritime Aircraft (MMA) (P-8A)*

Assured Maritime Dominance activities include principal mission lethality, survivability against kinetic and non-kinetic threats, and capability persistence in high-level threat environments. Rapid Development efforts increase lethality through optimization of kill-chain software systems, employment of Long Range Anti-Ship Missile (LRASM), Sonobuoy Rotary Launcher (SRL) improvements, and other weapon systems and Airborne Weapon Simulator (AWS) capabilities. RCI4 capabilities include kill-chain/gap analysis, ASW Enhancements, common weapons synchronization, and AWS continuation. RCI5 capabilities increase P-8A survivability through Radio Frequency Counter Measure (RFCM), P-8A Survivability Assurance and distributed sensor network improvements.

Budget Activity 5.
JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under SYSTEM DEVELOPMENT AND DEMONSTRATION because it includes those projects that have passed Milestone B approval and are conducting engineering and manufacturing development tasks aimed at meeting validated requirement prior to full-rate production decision.

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	24.084	27.279	0.000	-	0.000
Current President's Budget	23.266	27.279	37.939	-	37.939
Total Adjustments	-0.818	0.000	37.939	-	37.939
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.818	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	-	-	37.939	-	37.939

Change Summary Explanation

N/A

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 / 5	R-1 Program Element (Number/Name) PE 0605500N / *Multi-Mission Maritime Aircraft (MMA) (P-8A)*	Project (Number/Name) 3368 / *P-8 Improvements*	

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
3368: *P-8 Improvements*	52.622	23.266	27.279	37.939	-	37.939	38.661	45.053	47.065	47.853	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Project MDAP/MAIS Code: 334

A. Mission Description and Budget Item Justification

The P-8A MMA program's Assured Maritime Dominance Anti-Submarine Warfare (ASW), Anti-Surface Warfare (ASuW), and Intelligence, Surveillance, and Reconnaissance (ISR) activities include a sequence of Rapid Capability Insertions (RCI) and rapid development efforts to respond to evolving threats and adversary capabilities, which will retain cost effectiveness for winning major combat operations. In order to pace the threat, these efforts will incorporate incremental software and/or hardware improvements to existing sensor capabilities, communications systems, mission systems, weapons capabilities, training systems and Tactical Operations Center (TOC) /Tacmobile support to build on the P-8A capability baseline. These planned and emergent requirements will be prioritized through either the Navy Integration and interoperability (I&I) aligned Capability Prioritization Process (CPP), P-8A Tier 3 Capability Roadmap and/or through Fleet identification of an Urgent Operational Need. The CPP process is supported by detailed analysis and the maturations of developing technologies.

Assured Maritime Dominance activities include principal mission lethality, survivability against kinetic and non-kinetic threats, and capability persistence in high-level threat environments. Rapid Development efforts increase lethality through optimization of kill-chain software systems, employment of LRASM, Sonobuoy Rotary Launcher (SRL) improvements, and other weapon systems and Airborne Weapon Simulator capabilities. RCI4 capabilities include kill-chain/gap analysis, ASW Enhancements, common weapons synchronization, and Airborne Weapon Simulator continuation. RCI5 capabilities increase P-8A survivability through Radio Frequency Counter Measure (RFCM), P-8A Survivability Assurance and distributed sensor network improvements.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Perform technology demonstrations and analyses of proposed new capabilities	22.487	22.227	33.476	0.000	33.476
Articles:	-	-	-	-	-
FY 2022 Plans: Continue to develop RCI packages and rapid development efforts to incrementally incorporate software and hardware capability improvements, building on the P-8A Baseline to ensure ongoing relevance of the P-8A capability. Continue efforts to support required analysis for integration of ASW weapon airworthiness. Complete development, integration, and fielding of Airborne Weapon Simulator capability. Begin RCI-4 development to include aircraft-to-aircraft Multi-Static Active Coherent (MAC) pattern swaps and Sonobuoy Rotary Launcher (SRL) weapons systems reliability/capability improvements including development of items required for CONUS organic repair capabilities. Begin RCI-5 development with Kill-Chain gap analysis for survivability / self-protection					

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605500N / *Multi-Mission Maritime Aircraft (MMA) (P-8A)*	**Project (Number/Name)** 3368 / *P-8 Improvements*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
capabilities. Complete LRASM airworthiness flight test and continue platform integration, software development efforts, and lab/ground test for LRASM integration into the P-8 mission systems. ***FY 2023 Base Plans:*** Continue to develop RCI packages and rapid/urgent development efforts to incrementally incorporate software and hardware capability improvements, building on the P-8A Baseline to ensure ongoing relevance of the P-8A capability. Continue LRASM efforts to include analysis of airworthiness data to support fleet flight clearance, software development and platform integration efforts, commence flight test for integrated LRASM capabilities, and support test planning for LRASM OT&E. Continue RCI-4 efforts for SRL improvements and MAC pattern swaps. Complete RCI-5 analysis for survivability improvements/kill chain gap analysis. Commence RCI-5 development efforts for analysis and hardware/software integration of preferred survivability solution onto the P-8A weapons system. Perform early activities in support of planned ASW improvements to support theater ASW common operational picture enhancements. ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** The increase of $11.249 million from FY 2022 to FY2023 is funding associated with ramping up of activities for SRL improvement efforts and the commencement of RCI-5 hardware/software development activities for P-8 survivability improvements.					
Title: Conduct technical, cost, risk, test, and logistics analysis of proposed technologies	0.779	5.052	4.463	0.000	4.463
Articles:	-	-	-	-	-
FY 2022 Plans: Conduct technical, cost, risk and logistics analysis of proposed technologies. Evaluate system requirements through cost/performance trade-off analysis. Begin technical execution of LRASM government-led flight test and post-test analysis. ***FY 2023 Base Plans:*** Conduct technical, cost, risk and logistics analysis of proposed technologies. Evaluate system requirements through cost/performance trade-off analysis. Continue technical execution of LRASM government-led flight test and post-test analysis. ***FY 2023 OCO Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605500N / *Multi-Mission Maritime Aircraft (MMA) (P-8A)*	**Project (Number/Name)** 3368 / *P-8 Improvements*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** The decrease of $0.589 million from FY 2022 to FY 2023 is associated with natural completion of LRASM airworthiness flight tests.					
Accomplishments/Planned Programs Subtotals	23.266	27.279	37.939	0.000	37.939

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The P-8A acquisition strategy is designed to deliver the required capabilities while introducing additional competition throughout the program. Government Lead Capability Integrator (LCI) control over the designs and information promote cost-effectiveness, rapid capability fielding, and reduced acquisition and life-cycle costs. Additionally, technologies for P-8 modernization improvements are compartmentalized and delivered independently of one another as a series of ECPs, without risk to the overall program schedule or procurement cost. This tailoring approach is effective in accommodating an emergent Fleet requirement and serve as an example that the flexibility inherent in this ECP-based Acquisition Strategy is responsive to Fleet customer concerns.

The P-8A Acquisition Strategy (AS), first approved by the Under Secretary of Defense for Acquisition, Technology and Logistics (USD (AT&L)) at Milestone B in 2004, establishes the strategy to deliver full P-8A capability via three increments (then Block 1, Spiral 1 and Spiral 2 and now called Increments 1, 2, and 3). Increment 1 (Block 1) provided persistent ASW, ASuW, and ISR. Increment 2 (Spiral 1) provided improved ASW capabilities via multiple ECPs. On 4 April 2016, the MDA (USD AT&L) approved the incorporation of Increment 3 (Spiral 2 - under PE 0605504N) communications, Combat Systems Architecture, ASW Signals Intelligence, ASuW Net Enabled Weapon, Wideband SATCOM, Higher than Secret security enclave and Enhanced Multi-static Active Coherent (MAC-E) as ECPs (ECP 4-7) within the existing P-8A program as defined in the approved AS. RCI, rapid development, and future emergent capabilities will continue to be developed in an evolutionary manner similar to Increments 1-3 ECPs. Work is not initiated under this incremental acquisition process until the capabilities are first approved in P-8A Joint Capabilities Integration and Development System (JCIDS) documentation or the Navy's I&I CPP, approval obtained through an OPNAV Configuration Steering Board (CSB) and the phase of work approved by the Milestone Decision Authority (MDA). On 10 May 2016, P-8A was redesignated an ACAT 1C program and the MDA assigned to the Assistant Secretary of the Navy for Research, Development and Acquisition (ASN (RDA)).

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605500N / *Multi-Mission Maritime Aircraft (MMA) (P-8A)*	**Project (Number/Name)** 3368 / *P-8 Improvements*

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 HW/SW Dev - P-8 Improvements/Increased Capability	Various	Various : Various	3.185	0.332	Nov 2020	2.000	Mar 2022	4.150	Mar 2023	-		4.150	0.000	9.667	9.667
Primary HW/SW Dev - ASW Enhancements	Various	Various : Various	4.650	1.473	Feb 2021	1.217	Feb 2022	1.301	Feb 2023	-		1.301	0.591	9.232	9.232
Primary SW Dev- Airborne Weapons Simulator/ Correction of Deficiencies/ RFCM	Various	Various : Various	31.371	0.371	May 2021	0.000		0.000		-		0.000	0.000	31.742	31.742
Primary HW/SW Dev -RCI	Various	Various : Various	3.200	0.800	Mar 2021	5.129	Dec 2021	16.011	Dec 2022	-		16.011	Continuing	Continuing	Continuing
Primary SW Dev -LRASM	Various	Boeing : Seattle, WA	0.000	17.582	Mar 2021	11.482	Dec 2021	9.461	Dec 2022	-		9.461	46.122	84.647	84.647
Sys Eng - Gov	WR	NAWCAD : Pax River, MD	5.763	1.929	Nov 2020	2.399	Nov 2021	2.553	Nov 2022	-		2.553	Continuing	Continuing	Continuing
		Subtotal	48.169	22.487		22.227		33.476		-		33.476	Continuing	Continuing	N/A

Remarks

RCI-5 contract award occurs in 3Q FY 2023 begins the hardware and software development.

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 - LRASM	WR	NAWCAD : Pax River, MD	0.000	0.000		4.318	Jan 2022	3.817	Dec 2022	-		3.817	Continuing	Continuing	Continuing
		Subtotal	0.000	0.000		4.318		3.817		-		3.817	Continuing	Continuing	N/A

Remarks

Technical execution of LRASM government-led flight test and post-test analysis.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605500N / *Multi-Mission Maritime Aircraft (MMA) (P-8A)*	**Project (Number/Name)** 3368 / *P-8 Improvements*

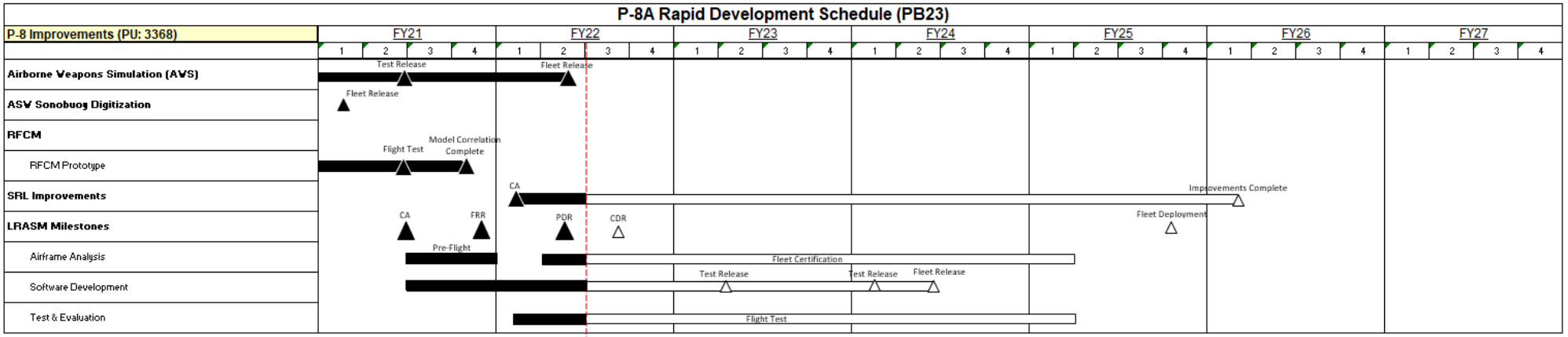
Management Services ($ in Millions)

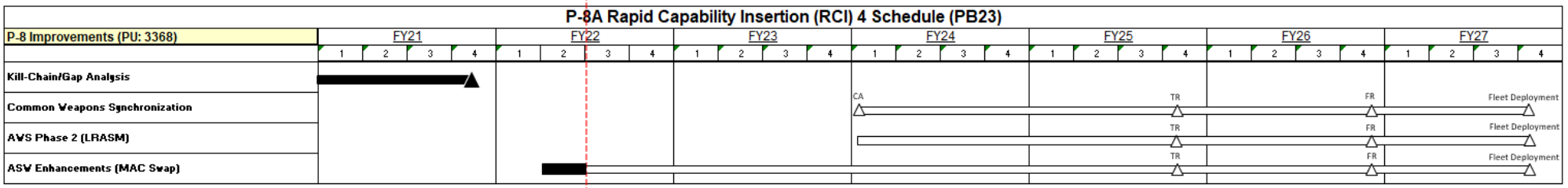
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Eng Tech Serv (NON-FFRDC)	Various	Various : Various	1.318	0.180	Nov 2020	0.000		0.000		-		0.000	0.984	2.482	-
Mgmt Support Serv	C/CPFF	RBC : Alexandria, VA	1.258	0.393	Nov 2020	0.500	Nov 2021	0.416	Nov 2022	-		0.416	Continuing	Continuing	Continuing
Program Mgmt Support	WR	NAWCAD : Pax River, MD	1.877	0.206	Nov 2020	0.234	Nov 2021	0.230	Nov 2022	-		0.230	Continuing	Continuing	Continuing
		Subtotal	4.453	0.779		0.734		0.646		-		0.646	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	52.622	23.266		27.279		37.939		-		37.939	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605500N / *Multi-Mission Maritime Aircraft (MMA) (P-8A)*	**Project (Number/Name)** 3368 / *P-8 Improvements*





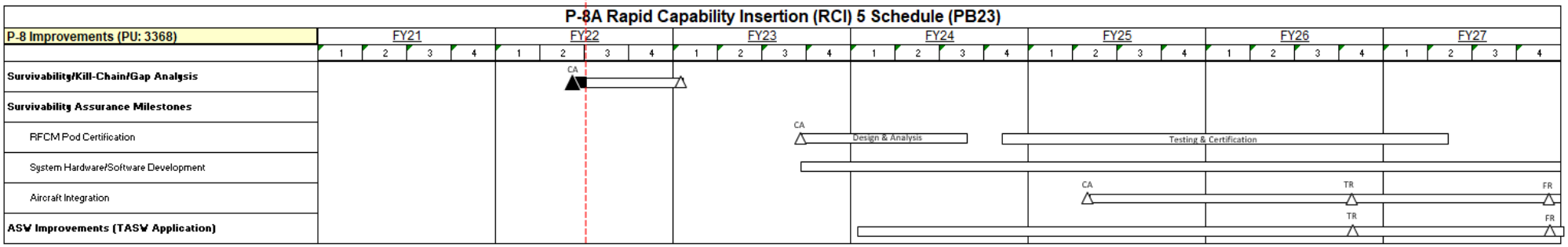


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605500N / *Multi-Mission Maritime Aircraft (MMA) (P-8A)*	**Project (Number/Name)** 3368 / *P-8 Improvements*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
P-8 Improvements				
Rapid Development: Airborne Weapons Simulator: Test Release	2	2021	2	2021
Rapid Development: Airborne Weapons Simulator: Fleet Release	2	2022	2	2022
Rapid Development: ASW Digitization: Fleet Release	1	2021	1	2021
Rapid Development: RFCM Prototype: Contract Award	1	2021	1	2021
Rapid Development: RFCM Prototype: Development	1	2021	4	2021
Rapid Development: SRL Improvements: Contract Award	1	2022	1	2022
Rapid Development: SRL Improvements: Development	1	2022	4	2024
Rapid Development: SRL Improvements: Improvements Complete	1	2026	1	2026
Rapid Development: LRASM: Contract Award	2	2021	2	2021
Rapid Development: LRASM: Pre Flight Analysis	2	2021	4	2021
Rapid Development: LRASM: FRR	4	2022	4	2022
Rapid Development: LRASM: Fleet Certification	2	2022	2	2025
Rapid Development: LRASM: Software Development	2	2021	2	2024
Rapid Development: LRASM: Test Release.1	2	2023	2	2023
Rapid Development: LRASM: Test Release.2	1	2024	1	2024
Rapid Development: LRASM: Fleet Release	1	2024	1	2024
Rapid Development: LRASM: Testing	1	2022	1	2025
Rapid Development: LRASM: Fleet Deployment	4	2025	4	2025
RCI4: Kill-Chain/Gap Analysis: Analysis	1	2021	4	2021
RCI4: Common Weapons Synchronization: Development	1	2024	1	2027
RCI4: Common Weapons Synchronization: Test Release	4	2025	4	2025

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605500N / *Multi-Mission Maritime Aircraft (MMA) (P-8A)*	**Project (Number/Name)** 3368 / *P-8 Improvements*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
RCI4: Common Weapons Synchronization: Fleet Release	4	2026	4	2026
RCI4: Common Weapons Synchronization: Fleet Deployment	4	2027	4	2027
RCI4: ASW Phase 2: Development	1	2024	1	2027
RCI4: ASW Phase 2: Test Release	4	2025	4	2025
RCI4: ASW Phase 2: Fleet Release	4	2026	4	2026
RCI4: ASW Phase 2: Fleet Deployment	4	2027	4	2027
RCI4: ASW Enhancements: Development	2	2022	4	2027
RCI4: ASW Enhancements: Test Release	4	2025	4	2025
RCI4: ASW Enhancements: Fleet Release	4	2026	4	2026
RCI4: ASW Enhancements: Fleet Deployment	4	2027	4	2027
RCI5: Survivability Gap Analysis: Contract Award	1	2022	1	2022
RCI5: Survivability Gap Analysis: Analysis	1	2022	1	2023
RCI5: Survivability Assurance: Contract Award	3	2023	3	2023
RCI5: Survivability Assurance: Design & Analysis	3	2023	3	2024
RCI5: Survivability Assurance: Testing & Certification	4	2024	2	2027
RCI5: Survivability Assurance: Hardware & Software Development	3	2023	4	2027
RCI5: Survivability Assurance: Aircraft Integration Contract Award	2	2025	2	2025
RCI5: Survivability Assurance: Aircraft Integration	2	2025	4	2027
RCI5: Survivability Assurance: Test Release	4	2026	4	2026
RCI5: ASW Improvements: Development	1	2024	4	2027
RCI5: ASW Improvements: Test Release	4	2027	4	2027