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 0603860N *I JNT Precision Approach & Ldg Sys*							
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	1,379.495	30.853	22.950	18.628	-	18.628	13.297	7.707	7.641	7.639	Continuing	Continuing
2329: *JPALS*	1,379.495	30.853	22.950	18.628	-	18.628	13.297	7.707	7.641	7.639	Continuing	Continuing
Program MDAP/MAIS Code: **Project MDAP/MAIS Code(s):** 238												

A. Mission Description and Budget Item Justification

A. Mission Description and Budget Item Justification

The Joint Precision Approach and Landing System (JPALS) is the primary precision approach and landing system for CVN and LHA/D ships to support aircraft without AN/SPN-46 Automatic Carrier Landing Systems (ACLS) capability including F-35B, F-35C, MQ-25A and future platforms. JPALS ship systems are required to provide CVN and LHA/D ships a primary precision approach capability during night and instrument flight conditions, including coupled approach capability to a hover transition point for LHA/D ships, and coupled approach to the deck (auto-land) capability aboard CVN ships, and contested environments. JPALS also provides the over-the-air inertial alignment capability for CVN and LHA/D ships to support aircraft platforms without Link-4A capability, including F-35, MQ-25A and future platforms. JPALS efforts include addressing broadened CyberSecurity requirements to remain compliant with software CyberSecurity directives and Information Assurance mandates.
This budget also ensures required capability improvements to JPALS shipboard systems is accomplished, to ensure the successful integration of Landing Autonomous Navigation Technology for Enhanced Recovery to Navy Ships (LANTERNS). LANTERNS is a technological improvement being researched by Future Naval Capabilities/Advanced Technology Development (PE 0603673N) to ensure the continued development of enhanced, Precise Ship-Relative Navigation (PS-RN) for reliable autonomous ship recovery of Unmanned Aerial Systems (UAS) in all weather, high deck motion environments.

The FNC research is centered on aircraft systems.

The JPALS RDT&E supports integration of LANTERNS into the JPALS shipboard systems, delivering lethality through resilient launch and recovery operations in contested environments and during Distributed Maritime Operations.

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 high fidelity and realistic operating environments.

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 0603860N *I JNT Precision Approach & Ldg Sys*		
B. Program Change Summary ($ in Millions)	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**
Previous President's Budget	33.612	24.450	0.000	-	0.000
Current President's Budget	30.853	22.950	18.628	-	18.628
Total Adjustments	-2.759	-1.500	18.628	-	18.628
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-1.500			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-1.950	0.000			
• SBIR/STTR Transfer	-0.809	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	-	-	18.628	-	18.628

Change Summary Explanation

Technical: N/A

Schedule: N/A

Financial: 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 / 4	R-1 Program Element (Number/Name) PE 0603860N / *JNT Precision Approach & Ldg Sys*	Project (Number/Name) 2329 / *JPALS*	

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
2329: *JPALS*	1,379.495	30.853	22.950	18.628	-	18.628	13.297	7.707	7.641	7.639	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Project MDAP/MAIS Code: 238

A. Mission Description and Budget Item Justification

This budget reflects the Department of Defense certified Component Cost Position of the restructured Joint Precision Approach and Landing System (JPALS) program that funds the developmental, testing, and integration activities to implement and field JPALS ship systems that deliver the primary precision approach, landing, on-deck inertial alignment, surveillance, and auto-land capability for current and future low observable manned and unmanned platforms onboard all CVN and LHA/D ships. JPALS provides for development, integration, installation, and test of JPALS on CVN and LHA/D ships in accordance with the Joint Requirements Oversight Council (JROC) March 2016 approved JPALS Capability Development Document (CDD). JPALS Engineering Development Model (EDM) articles have been delivered to support JPALS EMD activities.

JPALS EDMs have been installed at shore based test facilities and (temporarily) on CVN and LHA/D ships to support F-35B/C developmental and operational testing and MQ-25A concept refinement, system requirements identification, allocation, surrogate risk reduction, and test. Two JPALS EDMs were procured in FY 2017 to support testing and F-35 shipboard operational deployments. JPALS will continue to invest in software development in direct support of precision approach and auto-land capabilities for the F-35B/C, MQ-25A, and future air platforms. JPALS effort includes addressing broadened CyberSecurity requirements to remain compliant with software CyberSecurity directives and Information Assurance mandates. Remaining costs are associated with the completion of the test and support to fielded EDM units and to develop, test, and transition JPALS to use GPS M-Code. Additionally, costs are to enhance Precision Ship-Relative Navigation (PS-RN) for Navy and Marine Corps unmanned, and potentially manned, platforms, enabling resilient Distributed Maritime Operations (DMO) via the Landing Autonomous Navigation Technology for Enhanced Recovery to Navy Ships (LANTERNS) Future Naval Capabilities (FNC) and other system 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: JPALS Ship Systems and Test	24.943	15.921	11.105	0.000	11.105
Articles:	-	-	-	-	-
Description: JPALS provides for development, integration, installation, and test of Sea-Based JPALS on CVN and LHA/D ships.					
FY 2022 Plans: Complete EMD phase. Continue to support F-35 operational deployments. Begin research and evaluation of M-Code for implementation into the JPALS ship systems.					
FY 2023 Base Plans:					

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 0603860N / *JNT Precision Approach & Ldg Sys*	**Project (Number/Name)** 2329 / *JPALS*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Continue research and evaluation of GPS M-Code for implementation into the JPALS system. Continue analysis of available M-code capable GOTS receivers and development of JPALS-capable receiver interfaces and output requirements. ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Decrease of $4.816M is due to the completion of the JPALS EMD phase.					
Title: Joint Strike Fighter (JSF) F-35B Marine Corp STOVL and F-35C Navy Carrier Variant Support	4.180	4.264	1.500	0.000	1.500
Articles:	-	-	-	-	-
Description: Provide technical development, shore based, and ship based support for F-35B and F-35C JPALS Integration and Developmental Test (DT) and Operational Test (OT) events. Provide JPALS system certification and documentation to certify shipboard all weather precision approach capability for F-35 operational test and deployments. ***FY 2022 Plans:*** Complete support of operational deployments of JPALS UDB capable F-35 aircraft including delivery, installation, and ship rider technical support of the JPALS Early Operational Capability (EOC) units onto ships. Continue development of JPALS two-way and autoland implementation into F-35 aircraft. ***FY 2023 Base Plans:*** Continue development of JPALS two-way and autoland implementation into F-35 aircraft. ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Decrease of $2.764 from FY 2022 to FY 2023 is due to completion of EOC deployments.					
Title: MQ-25 Support	1.730	1.765	1.800	0.000	1.800
Articles:	-	-	-	-	-
Description: Provide technical support, lab support, requirements identification, allocation and test activities for MQ-25. Support MQ-25 concept refinement, requirements development, integration specifications, and					

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 0603860N / *JNT Precision Approach & Ldg Sys*	**Project (Number/Name)** 2329 / *JPALS*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
risk reduction activities for JPALS integration. Support MQ-25 concept refinement and JPALS integration and developmental activities. ***FY 2022 Plans:*** Continue JPALS algorithm integration support and testing. Continue preparation of JPALS system integration lab at Patuxent River for MQ-25 shore testing. ***FY 2023 Base Plans:*** Continue JPALS algorithm integration support and testing. Continue preparation of JPALS system integration lab at Patuxent River for MQ-25 shore testing. ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increase of $.035M from FY 2022 to FY 2023 is due to inflation.					
Title: Advanced Technology Integration	0.000	1.000	4.223	0.000	4.223
Articles:	-	1	-	-	-
Description: This project provides funding for integrating and transitioning new capabilities into the JPALS ship system requirements. ***FY 2022 Plans:*** Perform simulation analysis, evaluate prototype concepts to select preferred hardware/software solution. Demonstrate interoperability within target ship and aircraft architecture. Validate compatibility of legacy message structure with prototype system and exercise the most promising solution concept. ***FY 2023 Base Plans:*** Surrogate aircraft engineering and modification, CVN ship flight test planning and execution, and post test data analysis. The system will be tested at-sea and baselined into the appropriate programs of record. ***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 0603860N / *JNT Precision Approach & Ldg Sys*	**Project (Number/Name)** 2329 / *JPALS*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Increase of $3.223M from FY 2022 to FY 2023 is due to the increased testing of the LANTERNS integration effort with the specific ship system requirements.					
Accomplishments/Planned Programs Subtotals	30.853	22.950	18.628	0.000	18.628

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/2867: *JPALS*	96.751	35.386	8.186	-	8.186	3.993	3.977	4.111	4.177	Continuing	Continuing

Remarks

D. Acquisition Strategy

Technology Development phase was conducted jointly by NAVAIRSYSCOM (PMA-213), USAF Electronic Systems Command (Global Air) and multiple industry partners. This effort provided the concept of operations, performance specifications and technology readiness levels necessary to provide the foundation from which to launch the Increment 1 System Development and Demonstration (SDD) phase development. Joint Precision Approach and Landing System (JPALS) reached MS-B on 14 July 2008 and the SDD phase development contract was awarded on 17 July 2008. Tasking consisted of sea-based JPALS, related ship and airborne reference systems, end-to-end software algorithms, necessary ship installation hardware, test equipment, system simulation software, and other RDT&E deliverable products. The SDD contract was awarded after full and open competition. JPALS is being developed by the Navy with an open system architecture in order to facilitate the compatible integration of many different aircraft and avionics architectures. JPALS provides for development, integration, installation, and test of Sea-Based JPALS to meet Initial Operation Capability of CVN and LHA/D ships in accordance with the JPALS Capability Development Document (CDD). Additionally, this requirement provides critical enabling technology for Joint Strike Fighter (JSF) F-35B Marine Corps Short Take-Off and Vertical Landing (STOVL) and F-35C Navy Carrier Variant, ship-based MQ-25A, and future Navy and Marine Corps air platforms.

As a result of the DON Resource and Requirements Review Board approved PALC Roadmap, the JPALS production phase was deferred to include design improvements to provide manned and unmanned aircraft with autoland capabilities. The current Engineering and Manufacturing Development (EMD) contract was modified in FY14 to add detailed requirements and design trade studies to identify specific system design improvements. An extension for pre-Milestone B efforts was awarded in fourth quarter FY15.

A Development RFP Release Decision Point (DRRDP) Defense Acquisition Board (DAB) was completed and the RFP for JPALS EMD 16 was released on 24 November 2015. A Milestone B (MS B) DAB was completed 02 June 2016. The MS B Acquisition Decision Memorandum (ADM) was approved 27 June 2016, which granted entry into the EMD phase for the restructured JPALS program and officially completed all actions required to exit Nunn-McCurdy. JPALS now has an approved Acquisition Program Baseline (APB) and has been designated an Acquisition Category (ACAT) 1C program. Sole Source contract was awarded to Raytheon in fourth quarter FY 2016. Completed Milestone C in April 2019.

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 0603860N / *JNT Precision Approach & Ldg Sys*	**Project (Number/Name)** 2329 / *JPALS*

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
Ship Integration	WR	NAWCAD : Pax River, MD	81.520	0.533	Nov 2020	0.000		0.000		-		0.000	0.000	82.053	-
Primary Hardware Development - EMD Phase I	C/CPIF	Raytheon : Fullerton, CA	410.181	0.000		0.000		0.000		-		0.000	0.000	410.181	410.181
Primary Hardware Development - New EMD Contract	C/CPIF	Raytheon : Fullerton, CA	234.267	21.021	Nov 2020	17.288	Nov 2021	0.000		-		0.000	0.000	272.576	272.576
JPALS Modifications for ARC-210	C/CPFF	RCI : Cedar Rapids, IA	8.603	0.000	Nov 2020	0.000		0.000		-		0.000	0.758	9.361	10.119
Risk Reduction for Auto-land - FFRDC Support	FFRDC	JHU : Laurel, MD	0.493	0.000		0.000		0.000		-		0.000	0.000	0.493	-
Primary Hardware Development - M-Code	TBD	Various : Various	0.000	0.000		0.000		8.689	Nov 2022	-		8.689	0.000	8.689	-
Prior Year Prod Dev no longer funded in the FYDP	TBD	Various : Various	249.870	0.000		0.000		0.000		-		0.000	0.000	249.870	-
		Subtotal	984.934	21.554		17.288		8.689		-		8.689	0.758	1,033.223	N/A

Remarks

Decrease in Primary Hardware Development from FY 2022 to FY 2023 is due to the completion of the JPALS EMD phase. Prior to FY 2023, the M-Code effort was budgeted within Systems Engineering Support for the research and evaluation of GPS M-Code implementation. In FY 2023, the effort was moved and captured in Product Development to continue analysis of available M-code capable GOTS receivers and development of JPALS-capable receiver interfaces and output requirements.

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
Systems Engineering Support - JPALS	WR	NAWCAD : Pax River, MD	215.613	5.605	Nov 2020	2.967	Nov 2021	3.948	Nov 2022	-		3.948	Continuing	Continuing	Continuing
Integrated Logistics Support	WR	NAWCAD : Pax River, MD	22.779	0.000		0.000		0.000		-		0.000	0.000	22.779	-

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 0603860N / *JNT Precision Approach & Ldg Sys*	**Project (Number/Name)** 2329 / *JPALS*

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
Systems Engineering Suppt - Advanced Technologies	TBD	Various : Various	0.000	0.000		1.000	Nov 2021	3.951	Nov 2022	-		3.951	0.000	4.951	-
Prior Year Support Costs non longer funded in FYDP	Various	Various : Various	21.514	0.000		0.000		0.000		-		0.000	0.000	21.514	-
		Subtotal	259.906	5.605		3.967		7.899		-		7.899	Continuing	Continuing	N/A

Remarks

Increase in Systems Engineering support between FY 2022 and FY 2023 is due to the research and evaluation of GPS M-Code implementation.
$2.5M in FY 2022 has been recategorized from product development to the support section to properly align with the work being accomplished.
FY 2023 continues the research and evaluation to incorporate new capabilities (such as LANTERNS) into the JPALS Ship System.

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
Developmental Test & Evaluation	WR	NAWCAD : Pax River, MD	76.770	0.000		0.000		0.000		-		0.000	0.000	76.770	-
Operational Test & Evaluation	WR	COMOPTEVFOR : Norfolk, VA	6.309	0.394	Nov 2020	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Operational Test & Evaluation	WR	NAWCAD : Pax River, MD	6.387	2.246	Nov 2020	0.716	Nov 2021	1.413	Nov 2022	-		1.413	Continuing	Continuing	Continuing
		Subtotal	89.466	2.640		0.716		1.413		-		1.413	Continuing	Continuing	N/A

Remarks

Increase in Test and Evaluation between FY 2022 and FY 2023 is due to the research and evaluation of GPS M-Code implementation.

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 0603860N / *JNT Precision Approach & Ldg Sys*	**Project (Number/Name)** 2329 / *JPALS*

Management Services ($ in Millions)

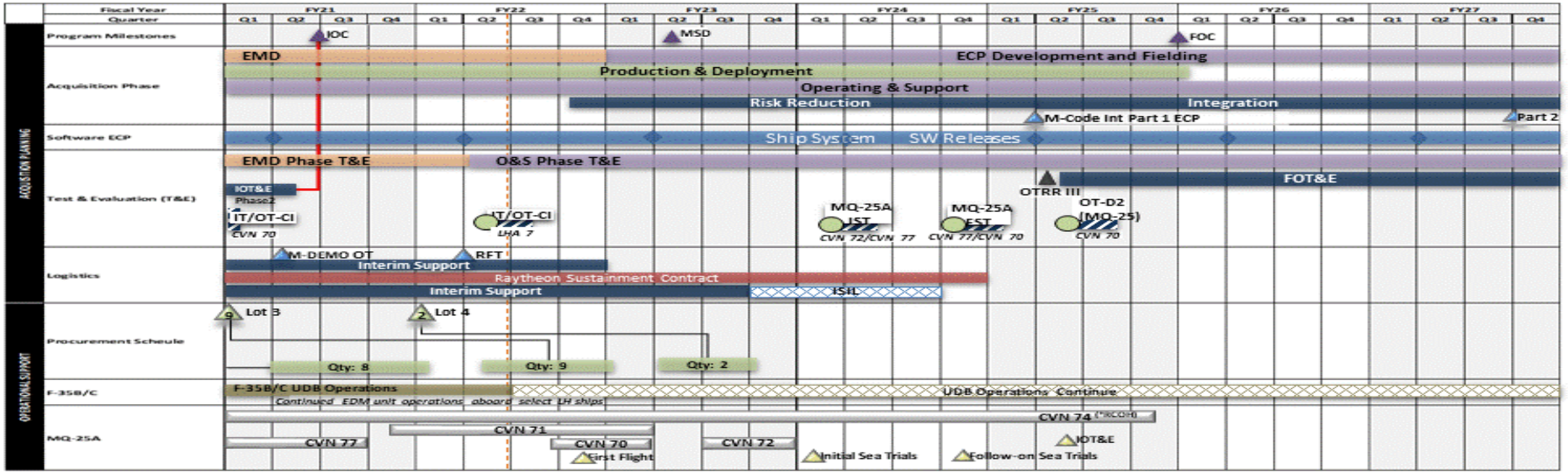
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	WR	NAWCAD : Pax River, MD	29.719	0.899	Nov 2020	0.837	Nov 2021	0.617	Nov 2022	-		0.617	0.000	32.072	-
PM Support - MSS	C/CPFF	Amelex : Pax River, MD	10.753	0.000		0.000		0.000		-		0.000	0.000	10.753	-
PM Support - MSS	C/CPFF	Avian : Pax River, MD	1.592	0.000		0.000		0.000		-		0.000	0.000	1.592	-
PM Support - MSS	C/CPFF	SAIC : Pax River, MD	2.487	0.000		0.000		0.000		-		0.000	0.000	2.487	-
PM Support - MSS	C/CPFF	DDG : Pax River, MD	0.133	0.130	Jan 2021	0.127	Nov 2021	0.000		-		0.000	0.000	0.390	-
Travel	WR	NAVAIR : Pax River, MD	0.505	0.025	Nov 2020	0.015	Nov 2021	0.010	Nov 2022	-		0.010	0.000	0.555	-
		Subtotal	45.189	1.054		0.979		0.627		-		0.627	0.000	47.849	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	1,379.495	30.853		22.950		18.628		-		18.628	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 0603860N / *JNT Precision Approach & Ldg Sys*	**Project (Number/Name)** 2329 / *JPALS*

JPALS Program Schedule



Notes:
M-Code schedule based on notional planning package

Legend:
Critical Path to JPALS IOC
EDM Unit
Production Unit
System Build 4.x.y
Lot Buys
Unit Delivery
Projected Test/Cert

Revision Date: Mar 2022

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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 0603860N / *JNT Precision Approach & Ldg Sys*	**Project (Number/Name)** 2329 / *JPALS*

Advanced Technology Integration

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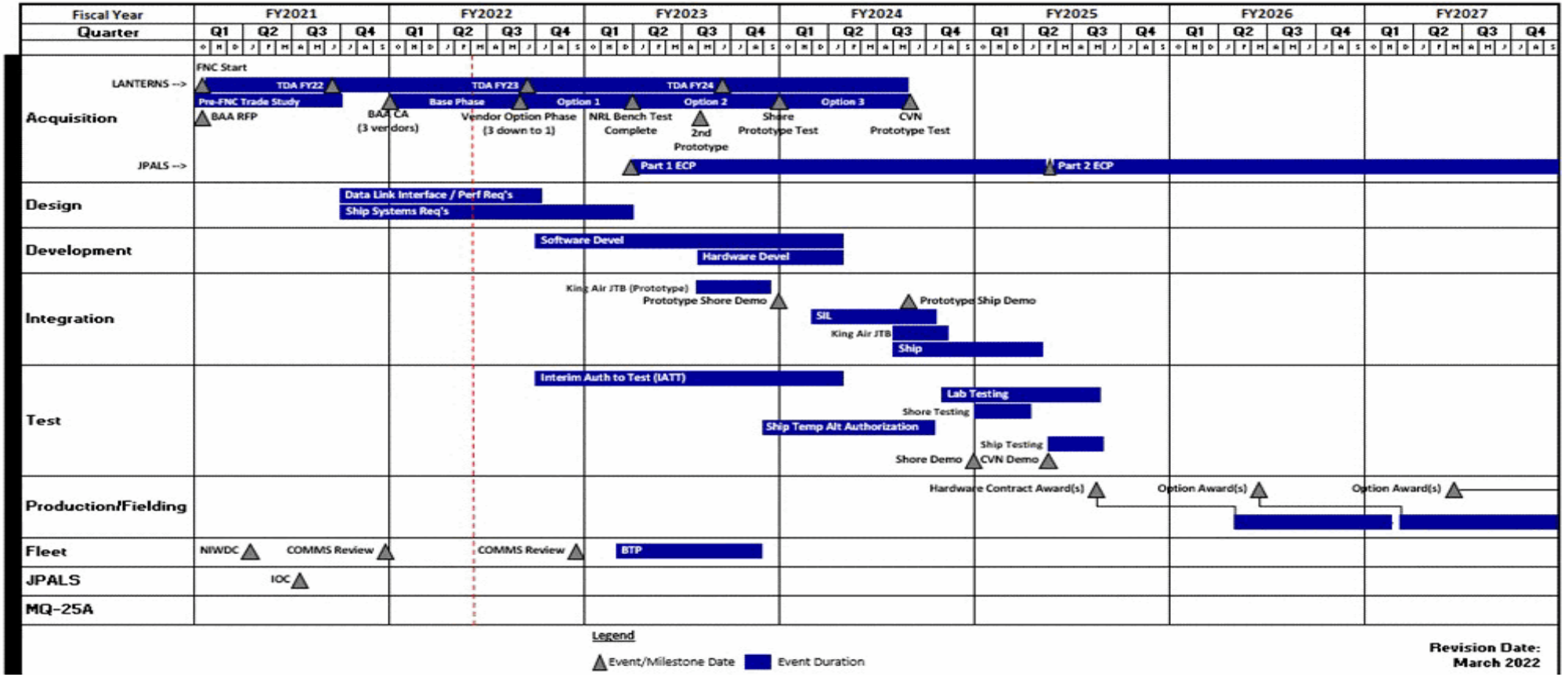

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603860N / *JNT Precision Approach & Ldg Sys*	**Project (Number/Name)** 2329 / *JPALS*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
JPALS				
Acquisition Milestones: Initial Operating Capability (IOC)	3	2021	3	2021
Acquisition Milestones: MSD	2	2023	2	2023
Acquisition Milestones: FOC	1	2026	1	2026
Systems Development: Engineering and Manufacturing Development	1	2021	4	2022
Test & Evaluation: Operational Test and Evaluation (IOT&E) Phase II	1	2021	2	2021
Test & Evaluation: JPALS Operational Test Readiness Review (OTRR) III	2	2025	2	2025
Advanced Technology Integration				
Acquisition Milestones: Demo	4	2024	4	2024
Systems Development: Hardware/Software Development	3	2022	2	2024