Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Navy	Date: March 2024
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604504N *I Air Control*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	415.429	38.363	42.656	84.458	-	84.458	86.003	78.994	46.433	32.074	Continuing	Continuing
0718: *MATCALS*	25.631	3.008	1.063	0.878	-	0.878	0.938	0.998	1.059	1.082	Continuing	Continuing
0993: *Carrier ATC*	237.110	10.204	8.655	8.718	-	8.718	8.820	8.981	9.430	9.625	Continuing	Continuing
1657: *ATC Improvement*	5.807	0.461	0.452	0.454	-	0.454	0.459	0.459	0.475	0.484	Continuing	Continuing
3372: *ATC Systems*	146.881	24.690	32.486	74.408	-	74.408	75.786	68.556	35.469	20.883	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element provides for the development, integration, and testing of Automated Air Traffic Control (ATC) hardware and software required to provide improved flight safety and more reliable all-weather ATC and landing system capabilities at Naval Air Stations (NASs) and Marine Corps Air Stations (MCASs) and Fleet Area Control and Surveillance Facilities (FACSFAC) worldwide. Programs are required to upgrade or replace aging ATC and landing system equipment on aircraft, aircraft carriers, amphibious ships, NASs, MCASs and Navy/Marine Corps tactical/expeditionary airfields and remote landing sites. These upgrades include addressing broadened CyberSecurity requirements to remain compliant with software CyberSecurity directives and Information Assurance mandates. Virtual Warfare Center (VWC) supports the Marine Air Ground Task Force (MAGTF) Integrated Air and Missile Defense (IAMD) development.

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 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	39.138	42.656	34.635	-	34.635
Current President's Budget	38.363	42.656	84.458	-	84.458
Total Adjustments	-0.775	0.000	49.823	-	49.823
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.775	0.000			
• Program Adjustments	0.000	0.000	49.878	-	49.878
• Rate/Misc Adjustments	0.000	0.000	-0.055	-	-0.055

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Navy	Date: March 2024
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604504N *I Air Control*

Change Summary Explanation

Schedule: 3372 AN/SPN-46 Block V and AN/SPN-35 Block II changes are due to the transition to SPN-XX Brizo Landing System development/design efforts. Modifications to contract award schedule and development/design efforts delayed overall Systems Engineering Technical Review schedule and Preliminary Design Review (PDR) and Critical Design Review (CDR) events.

Cost: Added additional FY 2025 funds ($49.9M) to project 3372 for the SPN-XX Brizo Landing System development efforts and procurement of EMD material.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604504N / *Air Control*	Project (Number/Name) 0718 / *MATCALS*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
0718: *MATCALS*	25.631	3.008	1.063	0.878	-	0.878	0.938	0.998	1.059	1.082	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Marine Air Traffic Control and Landing Systems (MATCALS) program provides for continued development, integration, and testing of hardware and software to meet requirements for all-weather operations and improved flight safety of Air Traffic Control (ATC) and Landing Systems at Marine Corps expeditionary airfields. An Acquisition Decision Memorandum from Jan 2005 approved the use of the U.S. Army AN/TPN-31 Air Traffic Navigation, Integration, and Coordination System (ATNAVICS) to fulfill the Air Surveillance and Precision Approach Radar and Control System (ASPARCS) requirement for Jul 2006. The ATNAVICS replaced the legacy ATC Precision Approach Radar (PAR), Airport Surveillance Radar (ASR), and Command and Control Subsystem with a High Mobility Multipurpose Wheeled Vehicle based PAR, ASR and Command and Control Subsystem. The Marine Resource Oversight Committee Decision Memorandum 11-2005 of Dec 2004 outlines the evolutionary improvements required by Headquarters Marine Corps. This program works with the Marine ATC Working Group identifying the requirements to implement the preplanned program improvement (P3I) and evolutionary product improvements as required for Ground/Air Task Oriented Radar System (G/ATOR), ATNAVICS, Expeditionary ATC Towers, Common Aviation Command and Control Station (CAC2S), and Navigational Aids that support Marine Air Traffic Control Detachments.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: MATCALS Improvements	0.614	1.063	0.878	0.000	0.878
Articles:	-	-	-	-	-
Description: Investigate and resolve obsolescence issues. Perform studies and analyses to implement P3I and other evolutionary improvements. Develop criteria for existing MATCALS software to achieve Defense Information Infrastructure-Common Operating Environment Level 5 compliance, Information Assurance, Radar Range Extension and Mapping functionality, and enhanced simulation and training into the existing MATCALS software. Perform Mode 5/S integration, operational functionality study and analyses with AN/TPN-31(V)7 ATNAVICS System.					
FY 2024 Plans: Continue to develop ECPs to mitigate obsolescence issues within the Precision Approach Radar and develop capability to meet the multiple touchdown point capability requirement. Perform operational functionality study and analysis regarding Expeditionary ATC tower capability improvements. Continue to prioritize integration of ATNAVICS and CAC2S, certification.					
FY 2025 Base Plans: Continue to develop ECPs to mitigate obsolescence issues within the Precision Approach Radar and develop capability to					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604504N / *Air Control*	**Project (Number/Name)** 0718 / *MATCALS*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
meet the multiple touchdown point capability requirement. Perform operational functionality study and analysis regarding Expeditionary ATC tower capability and Expeditionary Precision Approach Radar (EPAR) to support Force Design 2030 dated March 2020 improvements. Continue to prioritize integration of ATNAVICS and CAC2S certification. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2024 to FY2025 decrease due to reduction in MATCALS development efforts.					
Title: Virtual Warfare Center Support ***Articles:*** ***Description:*** Virtual Warfare Center (VWC) Support - This project supports fully interactive operator in the loop simulations in support of the Virtual Warfare Center (VWC) in order to quantify USMC Integrated Air and Missile Defense (IAMD) family of systems performance and how it impacts effectiveness in the IAMD mission area. ***FY 2024 Plans:*** N/A ***FY 2025 Base Plans:*** N/A ***FY 2025 OCO Plans:*** N/A	1.988 -	0.000 -	0.000 -	0.000 -	0.000 -
Title: Common Aviation Command and Control System (CAC2S) ***Articles:*** ***Description:*** Integrate ATNAVICS with the Common Aviation Command and Control System (CAC2S) to provide a coordinated and integrated modernization effort for the equipment of the Marine Air Command and Control System and provide enhanced Air Command and Control (AC2) capability for the Tactical Air Command Center, Tactical Air Operations Center, and Direct Air Support Center to support aviation employment in Joint, combined, and coalition operations. ***FY 2024 Plans:***	0.406 -	0.000 -	0.000 -	0.000 -	0.000 -

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604504N / *Air Control*	**Project (Number/Name)** 0718 / *MATCALS*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
N/A ***FY 2025 Base Plans:*** N/A ***FY 2025 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	3.008	1.063	0.878	0.000	0.878

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• OPN/2820: *Ashore ATC Equipment/MATCALS*	9.284	14.006	14.206	-	14.206	14.376	13.502	10.349	9.333	Continuing	Continuing

Remarks

MATCALS is only a portion of OPN Line Item 2820.

D. Acquisition Strategy

An Acquisition Decision Memorandum was signed in Jan 2005 approving the procurement of the Army AN/TPN-31 ATNAVICS to fulfill the Air Surveillance and Precision Approach Radar and Control System requirement for July 2006. The MROC Decision Memorandum 11-2005 of December 2004 outlined the evolutionary improvements required by Headquarters Marine Corps. This program has joined with the Army to implement Pre-Planned Product Improvements and evolutionary product improvements. The Marine Air Traffic Control (ATC) Working Group identified requirements to address obsolescence issues with ATC Expeditionary Towers. These requirements were validated by APX-8 and a Decision Analysis Study was conducted by NAVAIR. Funding will address development of Expeditionary ATC Tower capability improvements via the Engineering Change Proposal process.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604504N / *Air Control*	Project (Number/Name) 0718 / *MATCALS*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary HDW Develop - MATCALS	WR	NAWCAD : Patuxent River, MD	3.266	0.000	Dec 2022	0.301	Dec 2023	0.247	Dec 2024	-		0.247	0.000	3.814	-
Primary HDW Develop - MATCALS	C/BA	RAYTHEON : Largo, FL	0.134	0.136	Dec 2022	0.000		0.000		-		0.000	0.000	0.270	-
Primary HDW Develop - MATCALS	WR	NIWC : San Diego, CA	0.710	0.204	Dec 2022	0.297	Dec 2023	0.202	Dec 2024	-		0.202	0.000	1.413	-
Primary HDW Develop - MATCALS	C/CPFF	TRANDES : San Diego, CA	1.783	0.000		0.000		0.000		-		0.000	0.000	1.783	1.783
		Subtotal	5.893	0.340		0.598		0.449		-		0.449	0.000	7.280	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development - G/ATOR	WR	NSWC : Dahlgren, VA	2.575	0.000		0.000		0.000		-		0.000	0.000	2.575	-
Software Development - MATCALS	WR	NAWCAD : Patuxent River, MD	4.772	0.204	Dec 2022	0.288	Dec 2023	0.294	Dec 2024	-		0.294	0.000	5.558	-
Engineering Support - VWC	TBD	NSMA : TBD	5.310	0.886	Dec 2022	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Software Development - VWC	C/BA	TBD : TBD	4.219	1.005	Dec 2022	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Software Development - CAC2S	TBD	TBD : TBD	0.947	0.406	Nov 2022	0.000		0.000		-		0.000	0.000	1.353	-
		Subtotal	17.823	2.501		0.288		0.294		-		0.294	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	WR	NAWCAD : Patuxent River, MD	1.265	0.167	Dec 2022	0.177	Nov 2023	0.135	Dec 2024	-		0.135	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604504N / *Air Control*	Project (Number/Name) 0718 / *MATCALS*	

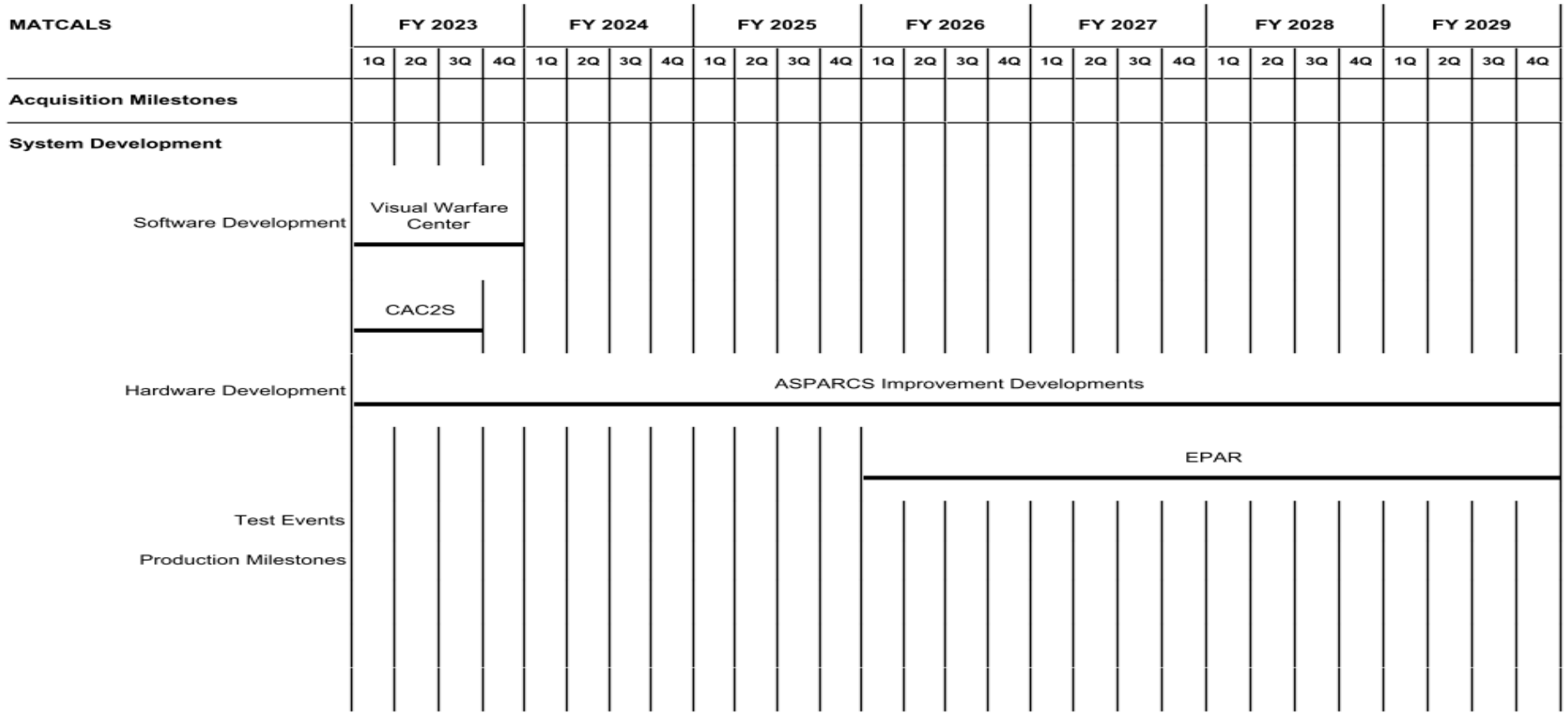
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	WR	G/ATOR : PEO Land Systems	0.650	0.000		0.000		0.000		-		0.000	0.000	0.650	-
		Subtotal	1.915	0.167		0.177		0.135		-		0.135	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	25.631	3.008		1.063		0.878		-		0.878	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604504N / *Air Control*	**Project (Number/Name)** 0718 / *MATCALS*



2025DON - 0604504N - 0718

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604504N / *Air Control*	**Project (Number/Name)** 0718 / *MATCALS*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
MATCALS				
System Development: Software Development: Virtual Warfare Center	1	2023	4	2023
System Development: Software Development: CAC2S	1	2023	3	2023
System Development: Hardware Development: MATCALS Improvements	1	2023	4	2029
System Development: Hardware Development: Expeditionary Precision Approach Radar (EPAR)	1	2026	4	2029

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy											Date: March 2024	
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604504N / *Air Control*				Project (Number/Name) 0993 / *Carrier ATC*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
0993: *Carrier ATC*	237.110	10.204	8.655	8.718	-	8.718	8.820	8.981	9.430	9.625	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Shipboard Air Traffic Control systems, interfacing with versions of the AN/TPX-42A(V) Direct Altitude and Identity Readout (DAIR), allow shipboard Air Traffic Controllers to identify, marshal, and direct aircraft within a 50 Nautical Mile (NM) radius of the ship. In recent years, the top 25 percent of the AN/SPN-43C frequency band has been reallocated to the Fixed Wireless Access Community prohibiting Air Traffic Control (ATC) Air Search Radar (ASR) operation within 50NM of the coast. Because the Navy requires an air traffic control surveillance radar, this project unit will include engineering efforts to identify requirements and develop the AN/SPN-50(V)1 as an AN/SPN-43C replacement system. In addition, bridging Engineering Change Proposals (ECP) will be required to sustain the AN/SPN-43C capability until the AN/SPN-50(V)1 is completely fielded. Finally, the AN/TPX-42A(V) DAIR continues to undergo several phased upgrades that have resulted in a number of field changes/technology refresh/insertion efforts. System improvements include replacing militarized front-end equipment in the track processor with open architecture Commercial Off the Shelf technology, converting the operational program software to more commonly used and flexible "C" language, providing the "hooks" for potential interface with Mode 5 Identification Friend or Foe, and integrating a flat panel monitor into the controller work station. The ATC System Shipboard, AN/SYY-1(V) interfaces to emerging sensors as well as those currently in service to improve reliability to the fleet. The embedded training capability of the AN/TPX-42A(V) will carry on to the AN/SYY-1(V). This effort includes addressing broadened CyberSecurity requirements to remain compliant with software CyberSecurity directives and Information Assurance mandates.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: AN/SPN-50	5.563	3.859	3.936	0.000	3.936
Articles:	-	-	-	-	-
Description: This project funds the development of the AN/SPN-43C replacement program (AN/SPN-50), which was previously funded under AN/SPN-43C and is being broken out for greater clarity and justification. This system enables Air Traffic Controllers to assure the safe and expeditious movement of air traffic. This capability is an enabler in maintaining launch/recovery cycle times/sortie rates.					
FY 2024 Plans: Closeout of EMD contract and developing shipboard enclave environment, reduce cyber vulnerabilities of aviation land and launch systems and improve the ability to continue manned and unmanned aircraft flight operations in a cyber-contested battlespace					
FY 2025 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604504N / *Air Control*	**Project (Number/Name)** 0993 / *Carrier ATC*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Funds development of Engineering Change Proposals (ECP) for the AN/SPN-50. These efforts will address obsolescence and corresponding software integration. Continued development efforts to mitigate evolving cyber vulnerabilities. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2024 to FY 2025 increase due to inflation.					
Title: AN/SPN-43C	1.740	1.655	1.688	0.000	1.688
Articles:	-	-	-	-	-
Description: Funds development of sustainment Engineering Change Proposals (ECP) for the AN/SPN-43C. The sustainment effort will ensure the capabilities provided by the AN/SPN-43C remain available to CVN, LHA and LHD type ships until the replacement system is fielded. ***FY 2024 Plans:*** Continue Sustainment ECPs for AN/SPN-43C ***FY 2025 Base Plans:*** Continue Sustainment ECPs for AN/SPN-43C ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2024 to FY 2025 increase due to inflation.					
Title: AN/TPX-42	2.901	3.141	3.094	0.000	3.094
Articles:	-	-	-	-	-
Description: This project funds the ongoing modernization of the AN/TPX-42 system through engineering changes and technology refresh, to include CyberSecurity requirements and compliance. Specific engineering changes are: Development of an Air Traffic Control (ATC) Multi-Function Console (MFC) which will reduce operational costs, improve reliability, and provide common hardware for all ATC workstations. Additionally, MFC will provide interfaces for emerging/planned sensors. ***FY 2024 Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604504N / *Air Control*	**Project (Number/Name)** 0993 / *Carrier ATC*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Continued as required Sustainment ECPs for Multi-function Console. ***FY 2025 Base Plans:*** Continue Sustainment ECPs for Multi-function Console. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2024 to FY 2025 decrease due to decreasing level of effort.					
Accomplishments/Planned Programs Subtotals	10.204	8.655	8.718	0.000	8.718

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• OPN/2830: *Afloat ATC*	56.537	67.249	66.238	-	66.238	66.872	77.972	36.063	39.307	Continuing	Continuing
Equipment: SATC / AN/SPN-50(V)1											

Remarks

Carrier ATC related funding is only a portion of OPN Line Item 2830.

D. Acquisition Strategy

AN/TPX-42 Voice/Video recorder replacement, Joint Precision Approach and Landing System Interface, Shipboard trainer, and Air Traffic Control (ATC) Console are all in progress ECPs, with improvements being incorporated into the production of AN/SYY-1(V) upgrade kits.

AN/SPN-50 replacement program is an ACAT IVT program. All other projects are non-ACAT upgrades to existing systems. An evolutionary acquisition approach is being used to introduce these technology advancements that either satisfy user requirements, such as all weather operation, or address supportability and cost of ownership problems.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604504N / *Air Control*	Project (Number/Name) 0993 / *Carrier ATC*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary HDW Develop-TPX-42	WR	NAWCAD : PAX River, MD	8.805	0.849	Nov 2022	0.866	Nov 2023	0.866	Nov 2024	-		0.866	Continuing	Continuing	Continuing
Primary HDW Develop - SPN-43	WR	NAWCAD : PAX River, MD	6.695	0.323	Nov 2022	0.536	Nov 2023	0.492	Nov 2024	-		0.492	Continuing	Continuing	Continuing
Primary HDW Develop - SPN-50(V)1 Pre-CDR Configuration EDM	C/CPIF	SAAB : Syracuse NY	11.317	0.000		0.000		0.000		-		0.000	0.000	11.317	11.317
Primary HDW Develop - SPN-50(V)1 Post-CDR Configuration EDM	C/CPIF	SAAB : Syracuse NY	5.888	0.000		0.000		0.000		-		0.000	0.077	5.965	5.614
Primary HDW EMD - SPN-50(V)1	C/CPIF	SAAB : Syracuse NY	58.662	0.095	Nov 2022	1.598	Nov 2023	0.000		-		0.000	1.211	61.566	44.507
Prior year Prod Dev no longer funded in the FYDP	Various	Various : TBD	17.998	0.000		0.000		0.000		-		0.000	0.000	17.998	-
Follow on ECP	C/CPIF	SAAB : Syracuse NY	0.000	0.000		0.575	Nov 2023	2.217	Nov 2024	-		2.217	0.000	2.792	-
		Subtotal	109.365	1.267		3.575		3.575		-		3.575	Continuing	Continuing	N/A

Remarks

AN/SPN-50(V)1 Hardware engineering, manufacturing, and development (EMD) contract close out. Increase from FY 2024 to FY 2025 ECP line to address obsolescence issues for hardware and software.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development-TPX-42	WR	NAWCAD : PAX River, MD	29.492	0.526	Nov 2022	0.537	Nov 2023	0.535	Nov 2024	-		0.535	Continuing	Continuing	Continuing
Integrated Logistics Support- TPX-42	WR	NAWCAD : PAX River, MD	2.927	0.202	Nov 2022	0.206	Nov 2023	0.200	Nov 2024	-		0.200	Continuing	Continuing	Continuing
Integrated Logistics Support-SPN-43	WR	NAWCAD : PAX River, MD	1.570	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Integrated Logistics Support-SPN-50(V)1	WR	NAWCAD : PAX River, MD	2.256	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604504N / *Air Control*	Project (Number/Name) 0993 / *Carrier ATC*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Studies & Analysis-SPN-50(V)1	WR	NAWCAD : PAX River, MD	4.591	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Software Development - SPN-50(V)1	WR	NAWCAD : PAX River, MD	11.598	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Studies & Analysis-SPN-43	WR	NAWCAD : PAX River, MD	2.135	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Studies & Analysis-TPX-42	WR	NAWCAD : PAX River, MD	1.873	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Systems Engineering-SPN-50(V)1	WR	NAWCAD : PAX River, MD	17.804	2.507	Nov 2022	1.357	Nov 2023	1.383	Nov 2024	-		1.383	0.208	23.259	-
Prior Year Support no longer funded in the FYDP	Various	Various : Various	13.393	0.000		0.000		0.000		-		0.000	0.000	13.393	-
Studies & Analysis SPN-50(V)1	WR	Variou : VA	0.402	0.000		0.000		0.000		-		0.000	0.000	0.402	-
		Subtotal	88.041	3.235		2.100		2.118		-		2.118	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NAWCAD : PAX River, MD	16.252	1.425	Nov 2022	1.126	Nov 2023	1.134	Nov 2024	-		1.134	Continuing	Continuing	Continuing
Operational Test & Evaluation (OT&E)	WR	OPTEVOR : Norfolk, VA	5.219	2.928	Nov 2022	0.301	Nov 2023	0.307	Nov 2024	-		0.307	2.336	11.091	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	Various	Various : Various	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	WR	NAWCAD : PAX River	8.761	0.000		0.000		0.000		-		0.000	0.000	8.761	-
		Subtotal	30.232	4.353		1.427		1.441		-		1.441	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604504N / *Air Control*	**Project (Number/Name)** 0993 / *Carrier ATC*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	C/CPFF	DDG : California, MD	4.287	0.597	Jan 2023	0.675	Dec 2023	0.689	Dec 2024	-		0.689	Continuing	Continuing	Continuing
Program Management Support	WR	NAWCAD : PAX River, MD	4.201	0.701	Nov 2022	0.821	Dec 2023	0.837	Dec 2024	-		0.837	Continuing	Continuing	Continuing
Travel	WR	NAVAIRHQ : PAX River, MD	0.984	0.051	Nov 2022	0.057	Dec 2023	0.058	Dec 2024	-		0.058	Continuing	Continuing	Continuing
		Subtotal	9.472	1.349		1.553		1.584		-		1.584	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	237.110	10.204		8.655		8.718		-		8.718	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604504N / *Air Control*	**Project (Number/Name)** 0993 / *Carrier ATC*

AN/TPX-42 / AN/SPN-43 Schedule

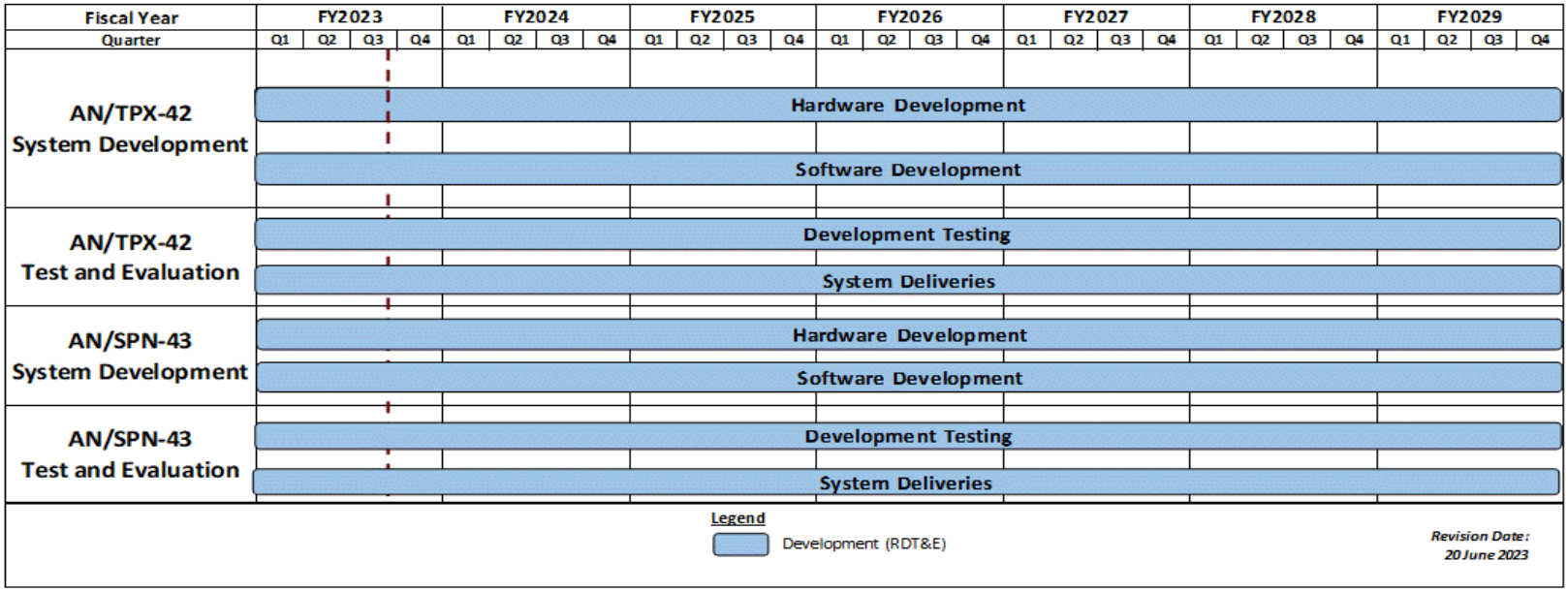


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604504N / *Air Control*	**Project (Number/Name)** 0993 / *Carrier ATC*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Carrier ATC				
Acquisition Milestones: Milestones: AN/SPN-50(V)1 MSD	3	2025	3	2025
Acquisition Milestones: Milestones: AN/SPN-50(V)1 IOC	2	2023	2	2023
System Development: Hardware Development: AN/SPN-43C	1	2023	4	2029
System Development: Hardware Development: AN/TPX-42A(V)	1	2023	4	2029
System Development: Software Development: AN/SPN-43C	1	2023	4	2029
System Development: Software Development: AN/TPX-42A(V)	1	2023	4	2029
Test and Evaluation: Developmental Testing (AN/TPX-42A(V))	1	2023	4	2029
Test and Evaluation: Developmental Testing (AN/SPN-43C)	1	2023	4	2029
Deliveries: System Deliveries (TPX-42A(V))	1	2023	4	2029
Deliveries: System Deliveries (AN/SPN-43C)	1	2023	4	2029

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604504N / *Air Control*	Project (Number/Name) 1657 / *ATC Improvement*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
1657: *ATC Improvement*	5.807	0.461	0.452	0.454	-	0.454	0.459	0.459	0.475	0.484	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This program provides for engineering development, integration, adaptation, and testing of new and/or modernized Air Traffic Control (ATC) systems, air navigational aids, landing systems, and ATC communication systems for Naval and Marine Corps Air Stations (NAS/MCAS), Fleet ATC Systems, and remote tower improvements.. These systems are critical to Naval Aviation and provide for safe, efficient air operations. Additionally, the Federal Aviation Administration (FAA) is affecting major modernization of the National Airspace System (NAS). The Navy must maintain compatibility with FAA-developed ATC systems in order to ensure seamless interoperability within the NAS. NAS modernization initiatives in Project 1657 include the Visual Information Display System (VIDS) and follow-on Pre-Planned Product Improvements, with additional RDT&E efforts required for modified commercial-off-the-shelf ATC systems and equipment for modernization and recapitalization of these systems at our NAS, MCAS & Fleet Area Control & Surveillance Facilities (FACSFACs) worldwide.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: NAS MOD VIDS	0.172	0.157	0.158	0.000	0.158
Articles:	-	-	-	-	-
Description: Continue engineering development of pre-planned product improvements for the VIDS and initiate efforts to incorporate VIDS into the FACSFACs. Research display alternatives for Navy ATC systems, and evaluate alternatives for future communication and radar systems.					
FY 2024 Plans: Continue engineering development of Pre-Planned Product Improvement for VIDS to incorporate multiple weather source inputs. Continue STARS and VIDS engineering development for technology insertion. To include VIDs cyber integration efforts and continue engineering efforts to maintain interoperability with the FAA's next generation air traffic control system.					
FY 2025 Base Plans: Continue engineering development of Pre-Planned Product Improvement for VIDS to incorporate multiple weather source inputs. Continue STARS and VIDS engineering development for technology insertion. To include VIDs cyber integration efforts and continue engineering efforts to maintain interoperability with the FAA's next generation air traffic control system.					
FY 2025 OCO Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604504N / *Air Control*	**Project (Number/Name)** 1657 / *ATC Improvement*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2024 to FY 2025 increase due to inflation.					
Title: Fleet ATC Systems	0.289	0.295	0.296	0.000	0.296
Articles:	-	-	-	-	-
Description: Research efforts to determine the best technical approach to integrate various data link and communication system upgrades into Navy/Marine Corps ATC Systems including, but not limited to, the Digital Airport Surveillance Radar (DASR) and the DoD Advanced Automation Systems (DAAS) into the Fleet Area Control and Surveillance Facilities. Evaluate alternative for future processor/display, sensor and communication systems. ***FY 2024 Plans:*** Continue engineering efforts to maintain interoperability with the FAA's next generation air traffic control system. Continue evaluation of future processor/display, sensor and communication systems. ***FY 2025 Base Plans:*** Continue engineering efforts to maintain interoperability with the FAA's next generation air traffic control system. Continue evaluation of future processor/display, sensor and communication systems. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** No significant change from FY 2024 to FY 2025.					
Accomplishments/Planned Programs Subtotals	0.461	0.452	0.454	0.000	0.454

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• OPN/2820: *Ashore ATC Equipment: NASMOD/Fleet ATC*	41.239	41.343	38.174	-	38.174	39.005	41.533	42.650	43.498	Continuing	Continuing

Remarks

ATC Improvement related funding is only a portion of OPN Line Item 2820.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604504N / *Air Control*	**Project (Number/Name)** 1657 / *ATC Improvement*

D. Acquisition Strategy

All projects are non-ACAT upgrades to existing systems. An evolutionary acquisition approach is being used to introduce technology advancements that either satisfy emergent requirements or address supportability and cost of ownership problems.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604504N / *Air Control*	**Project (Number/Name)** 1657 / *ATC Improvement*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary HDW Develop - VIDS	WR	SPAWAR Systems Command : Charleston, SC	2.950	0.172	Dec 2022	0.157	Dec 2023	0.158	Dec 2024	-		0.158	Continuing	Continuing	Continuing
Primary HDW Develop - Fleet ATC	WR	SPAWAR Systems Center : Charleston, SC	1.921	0.289	Dec 2022	0.295	Dec 2023	0.296	Dec 2024	-		0.296	Continuing	Continuing	Continuing
		Subtotal	4.871	0.461		0.452		0.454		-		0.454	Continuing	Continuing	N/A

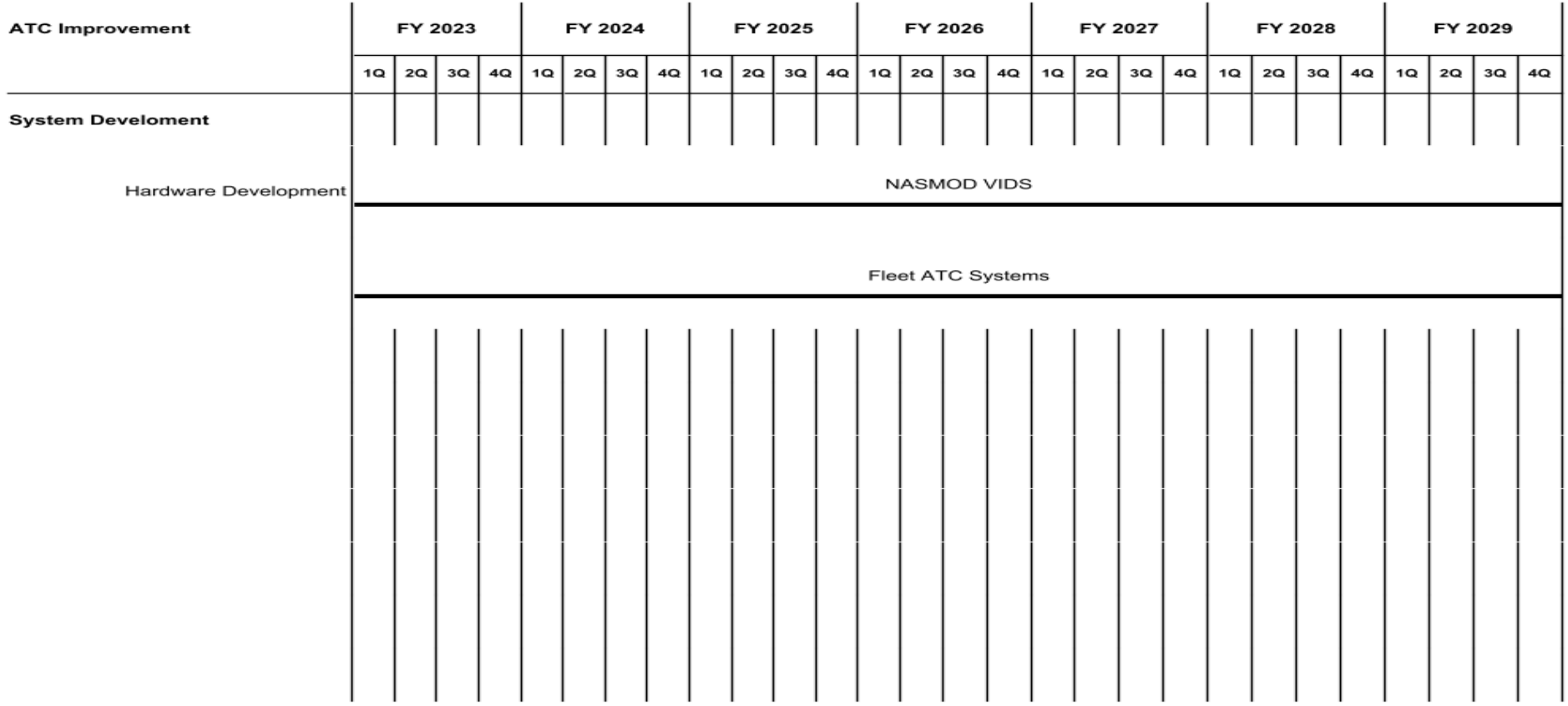
Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	SPAWAR Systems Center : Charleston, SC	0.936	0.000		0.000		0.000		-		0.000	0.000	0.936	-
		Subtotal	0.936	0.000		0.000		0.000		-		0.000	0.000	0.936	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	5.807	0.461		0.452		0.454		-		0.454	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604504N / *Air Control*	**Project (Number/Name)** 1657 / *ATC Improvement*



2025DON - 0604504N - 1657

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604504N / *Air Control*	**Project (Number/Name)** 1657 / *ATC Improvement*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
ATC Improvement				
System Develoment: Hardware Development: NASMOD VIDS	1	2023	4	2029
System Develoment: Hardware Development: Fleet ATC Systems	1	2023	4	2029

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy											Date: March 2024	
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604504N / *Air Control*				Project (Number/Name) 3372 / *ATC Systems*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
3372: *ATC Systems*	146.881	24.690	32.486	74.408	-	74.408	75.786	68.556	35.469	20.883	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Navy's Precision Approach and Landing System Capability (PALC) and Landing System Upgrade Program (LSUP) are essential to retain the United States Navy's capability to perform safe and expeditious aircraft landings aboard CVN and LHA/D class vessels during adverse weather and night conditions, and in contested environments. The Navy's PALC requirements, originally identified in the 2013 PALC Roadmap, necessitated Life Cycle Extension upgrades to all three legacy precision landing systems: AN/SPN-35, AN/SPN-41 and AN/SPN-46. The 2013 PALC Roadmap and subsequent LSUP block upgrades addressed obsolete technology developed and fielded over 30 years ago. In 2022, an updated PALC Roadmap was approved that will field system upgrades needed to provide PALC to both legacy aircraft and the Air Wing of the Future (AWOTF). These upgrades will modernize the AN/SPN-35 and AN/SPN-46 Radar Landing Systems (RLS), as well as insert common sub-systems that minimize future sustainment costs. These upgrades are likely to result in a new system currently referred to as SPN-XX Brizo Landing System. Development work from the 2013 PALC Roadmap efforts will be transitioned to this common, modern upgrade where able. The fielding of this upgrade will enable the sundown of the obsolete AN/SPN-41 radar landing system. Without these efforts, the Navy estimates complete loss of Precision Approach Radar (PAR) and Automatic Carrier Landing System (ACLS) capabilities within 10 years. Successful development and fielding of all capabilities is essential to giving fleet users relevant equipment, compliant Cyber Security directives and Information Assurance mandates, and authorized for fleet use.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: AN/SPN-46 Blk V Upgrade	5.272	3.618	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: In accordance with the CNO approved 2022 PALC Roadmap update, the AN/SPN-46 Block V efforts have been updated to support fielding of critical system upgrades and align remaining efforts with the Brizo Upgrade. AN/SPN-46 Block V upgrades targeted aging/obsolete hardware and software components within the carrier landing system and replaces them with modern components to improve system performance in contested environments as well as system supportability. It consisted of a major operational software upgrade along with a refresh of numerous Commercial Off The Shelf (COTS) equipment sub-assemblies. Refresh sub-assemblies included: the radar's obsolete processor circuit card assemblies (CCAs), replaced with new generation CCAs; the radar's Real Time Operating System (RTOS), replaced with a current and supportable RTOS; and the radar's software, replaced with a reconfigured, optimized, modular format. These efforts were split into two phases to allow faster fielding of critical items. Phase 1 upgrades the radar's obsolete processor CCAs with new generation CCAs, inclusive of updated RTOS. Phase 2 efforts will be realigned to the SPN-XX Brizo Landing System efforts and include upgraded maintenance Local Area Network (LAN) hardware and software upgrades that optimize the software architecture as well as implement Risk Management Framework					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604504N / *Air Control*	**Project (Number/Name)** 3372 / *ATC Systems*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
(RMF) Cyber Security controls. All of these upgrades are required to provide the fleet reliable, operational systems today and modular, modern, and maintainable systems that support the Air Wing of The Future. ***FY 2024 Plans:*** Continue environmental, Electromagnetic Interference (EMI) and shock qualification of the phase 2 configuration. Complete cyber security Risk Management Framework (RMF) controls implementation and begin RMF controls requirements verification testing. ***FY 2025 Base Plans:*** N/A ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease of $3.618M from FY 2024 to FY 2025 due to completion of efforts and realignment of remaining work from AN/SPN-46 Block V to SPN-XX Brizo Landing System.					
Title: SPN-XX Brizo Landing System	0.000	0.000	74.408	0.000	74.408
Articles:	-	-	-	-	-
Description: In accordance with the CNO approved 2022 PALC Roadmap update, the SPN-XX Brizo Landing System will provide for the development, design, integration, and testing of common equipment upgrades to the AN/SPN-35 and AN/SPN-46 systems. This upgrade will leverage technology advancements from each system to design a common, modular equipment set that provides Precision Approach Radar and Automatic Carrier Landing System capabilities to CVN and LHA/D systems, as required by the AWOTF aircraft. The AESA radar developed in support of the AN/SPN-35 Block II and the and below deck AN/SPN-46 ECP upgrades are both critical technologies included in the SPN-XX Brizo Landing System. These capabilities ensure aircraft and fleet users have a safe approach and landing system for aircraft landing during adverse weather, night conditions, in contested environments. ***FY 2024 Plans:*** N/A ***FY 2025 Base Plans:*** Preliminary Design Review (PDR); Software Integration Lab (SIL) updates to include common system equipment; continued integration of AN/SPN-46 Below Deck hardware and software architecture upgrades					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604504N / *Air Control*	**Project (Number/Name)** 3372 / *ATC Systems*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
and AN/SPN-35 Block II to new SPN-XX Brizo Landing System; purchase of remaining development system material. Includes preliminary testing of Brizo Landing system subsystems. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase of $74.408M from FY 2024 to FY 2025 is aligned with transition of AN/SPN-46 Block V and AN/SPN-35 Block II efforts to the SPN-XX Brizo Landing System design, development, and development system material purchases.					
Title: AN/SPN-35 Blk II Upgrade	19.418	28.868	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: In accordance with the CNO approved 2022 PALC Roadmap update, AN/SPN-35 Block II efforts will be realigned to the SPN-XX Brizo Landing System. AN/SPN-35 Block II funds the development, redesign, integration, and testing of upgrades required to extend the system service life and ensure Fleet availability of the system beyond 2040. The system provides Precisions Approach Radar (PAR) capability aboard LHA/LHD class ships ensuring safe approach and landing for aircraft during adverse weather & night conditions, in all operating environments. The most significant upgrade to the system is the development and integration of an Active Electronically Steered Array (AESA) to replace the legacy receiver-transmitter, pedestal, and antenna group equipment and to incorporate digital stabilization. Transition of this effort to the SPN-XX Brizo Landing System and Integration of this critical AESA technology and other common equipment upgrades are required to provide the fleet reliable, operational systems today, and modular, modern, and maintainable systems that support AWOTF. ***FY 2024 Plans:*** Complete Critical Design Review (CDR). Continue development of AESA, and AESA integration; deliver System Integration Lab (SIL) trailer and enclosure; perform design adjustments revealed during two-panel subarray test/ demo; begin planning for Deport Source of Repair (DSOR)/Logistics/Supportability. ***FY 2025 Base Plans:*** N/A ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:***					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604504N / *Air Control*	**Project (Number/Name)** 3372 / *ATC Systems*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Decrease of $28.868M from FY 2024 to FY 2025 due to completion of efforts and realignment of remaining work from AN/SPN-35 Block II to SPN-XX Brizo Landing System.					
Accomplishments/Planned Programs Subtotals	24.690	32.486	74.408	0.000	74.408

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• OPN/2830: *Afloat ATC Equipment/ACLS*	23.055	23.476	9.321	-	9.321	7.912	13.050	34.488	93.468	Continuing	Continuing

Remarks

ATC Systems related funding is only a portion of OPN Line Item 2830.

D. Acquisition Strategy

Landing System Upgrade Program consists of lifecycle extension upgrades to the AN/SPN-35C Precision Approach Radar, AN/SPN-41B Instrument Control Landing Systems and AN/SPN-46 Automatic Carrier Landing Systems, all of which support Air Traffic Control (ATC) operations on board CVN, LHA, and/or LHD-class ships. This effort includes numerous commercial off-the-shelf (COTS) component refresh updates which are urgently needed to sustain the operational viability of these Naval ATC systems supporting fleet air operations until at least 2040, until the next generation ATC system is fully implemented. This COTS refresh will include analysis and upgrade of key system components critical to overall system operation but which have become increasingly difficult to maintain over the past several years. Recent adjustments in the direction and scope of Naval ATC systems necessitated a reevaluation of the long-term viability and sustainability of the current Fleet ATC equipment.

The Resources and Requirements Review Board approved the DON Precision Approach and Landing Capability (PALC) Roadmap per Decision Memorandum (DM) Ser: N8B/13U141053 dtd 03 July 2013. This PALC Roadmap re-scoped Joint Precision Approach and Landing System (JPALS) into a single increment and deferred JPALS capability from legacy fleet aircraft. Per Enclosure 1 of the above DM, the Landing Systems Upgrade Program (LSUP) will be comprised of upgrades to the AN/SPN-46, AN/SPN-35C, and AN/SPN-41B. Each SPN upgrade will go through separate Systems Engineering Technical Review (SETR) processes. The current SPN systems need to be sustained through 2040.

In 2022, the Director, Air Warfare approved an updated PALC Roadmap (Ser N98/0060 dtd 20 December 2022) to replace the 2013 PALC Roadmap guidance and insert a modern, common system upgrade to the AN/SPN-35 and AN/SPN-46 Radar Landing Systems (RLS). This upgrade, referred to as the SPN-XX Brizo Landing System, will leverage technology and development efforts from the previous 2013 PALC roadmap and associated LSUP block upgrades, to field relevant equipment that provides modern PALC to both legacy aircraft and the Air Wing of the Future (AWOTF).

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604504N / *Air Control*	Project (Number/Name) 3372 / *ATC Systems*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development - AN/SPN-46 Blk IV Upgrade	WR	NAWCAD : Patuxent River, MD	31.440	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Ancillary Hardware Development - AN/SPN-46 Blk IV Upgrade	C/CPFF	Sierra Nevada Corp (SNC) : Reno, NV	23.562	0.000		0.000		0.000		-		0.000	0.000	23.562	23.562
Primary Hardware Development - AN/SPN-35 Blk I Upgrade	WR	NAWCAD : Patuxent River, MD	12.618	0.000		0.000		0.000		-		0.000	0.000	12.618	-
Ancilliary Hardware Development - AN/SPN-35 Blk I Upgrade	WR	NAWCAD : Patuxent River, MD	19.293	0.000		0.000		0.000		-		0.000	0.000	19.293	-
Primary Hardware Development - AN/SPN - 46 Blk V Upgrade	C/CPFF	Sierra Nevada Corp (SNC) : Reno, NV	9.712	2.753	Nov 2022	1.369	Nov 2023	0.000		-		0.000	1.056	14.890	15.214
Ancilliary Hardware Development - AN/SPN-46 Blk V Upgrade	WR	NAWCAD : Patuxent River, MD	8.903	1.214	Nov 2022	0.900	Nov 2023	0.000		-		0.000	Continuing	Continuing	Continuing
Primary Hardware Development - AN/SPN-35 Blk II Upgrade	WR	NAWCAD : Patuxent River, MD	3.500	4.653	Nov 2022	5.219	Nov 2023	0.000		-		0.000	Continuing	Continuing	Continuing
Ancilliary Hardware Development - AN/SPN-35 Blk II Upgrade	C/CPFF	GTRI : Atlanta, GA	11.752	13.581	Nov 2022	21.306	Nov 2023	0.000		-		0.000	Continuing	Continuing	Continuing
Primary Hardware Development - SPN-XX Brizo Landing System	C/CPFF	GTRI : Atlanta, GA	0.000	0.000		0.000		54.779	Nov 2024	-		54.779	0.000	54.779	-
Primary Hardware Development - SPN-XX Brizo Landing System	C/CPFF	Sierra Nevada Corp (SNC) : Reno, NV	0.000	0.000		0.000		10.662	Nov 2024	-		10.662	0.000	10.662	-
Ancilliary Hardware Development - SPN-XX Brizo Landing System	WR	NAWCAD : Patuxent River, MD	0.000	0.000		0.000		6.014	Nov 2024	-		6.014	0.000	6.014	-
		Subtotal	120.780	22.201		28.794		71.455		-		71.455	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604504N / *Air Control*	Project (Number/Name) 3372 / *ATC Systems*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract

Remarks

FY 2025 increase is in support of the SPN-XX Brizo Landing System including significant engineering events such as PDR, software development, and development material purchases.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrated Logistics Support (ILS)	WR	NAWCAD : Patuxent River, MD	5.990	0.495	Nov 2022	0.509	Nov 2023	0.795	Nov 2024	-		0.795	Continuing	Continuing	Continuing
Systems Engineering Support	WR	NAWCAD : Patuxent River, MD	7.662	0.559	Nov 2022	0.583	Nov 2023	0.719	Nov 2024	-		0.719	Continuing	Continuing	Continuing
		Subtotal	13.652	1.054		1.092		1.514		-		1.514	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NAWCAD : Patuxent River, MD	5.683	0.656	Nov 2022	1.680	Nov 2023	0.206	Nov 2024	-		0.206	Continuing	Continuing	Continuing
		Subtotal	5.683	0.656		1.680		0.206		-		0.206	Continuing	Continuing	N/A

Remarks

FY 2025 decrease is due to the completion of the AN/SPN-46 Blk V Phase 1 Flight Test.

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management (PM) Support	WR	NAWCAD : Patuxent River, MD	4.780	0.509	Nov 2022	0.645	Nov 2023	0.952	Nov 2024	-		0.952	Continuing	Continuing	Continuing
PM Support - MSS	C/CPAF	Amelex : Patuxent River, MD	1.201	0.000		0.000		0.000		-		0.000	0.000	1.201	1.201

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604504N / *Air Control*	Project (Number/Name) 3372 / *ATC Systems*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PM Support - MSS	C/CPAF	DDG : Patuxent River, MD	0.785	0.270	Jan 2023	0.275	Nov 2023	0.281	Nov 2024	-		0.281	Continuing	Continuing	Continuing
		Subtotal	6.766	0.779		0.920		1.233		-		1.233	Continuing	Continuing	N/A

Remarks

FY 2025 increase is in support of the SPN-XX Brizo Landing System including significant engineering events such as PDR, software development, and development material purchases.

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	146.881	24.690		32.486		74.408		-		74.408	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604504N / *Air Control*	**Project (Number/Name)** 3372 / *ATC Systems*

Radar Landing Systems (RLS) Schedule

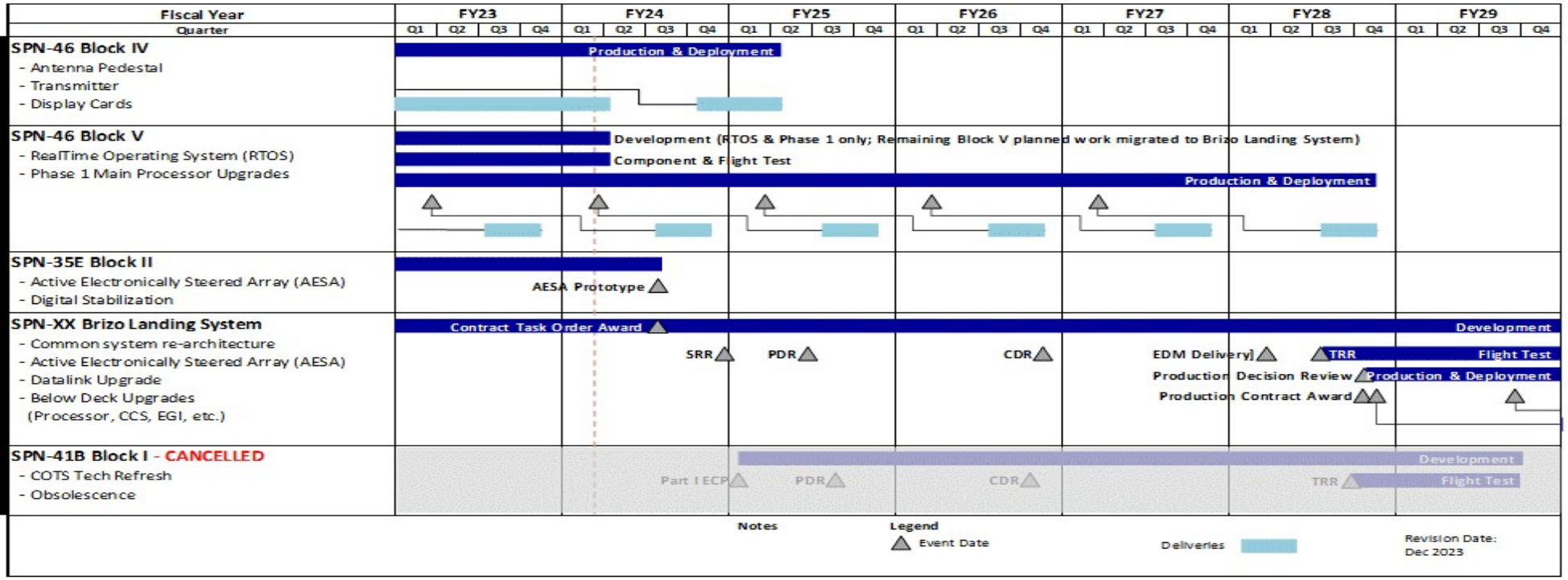


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604504N / *Air Control*	**Project (Number/Name)** 3372 / *ATC Systems*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3372				
Reviews: Brizo Upgrade - Preliminary Design Review	2	2025	2	2025
Reviews: Brizo Upgrade - Critical Design Review	4	2026	4	2026
Test and Evaluation: Brizo Upgrade - Test Readiness Review (TRR)	3	2028	3	2028