Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Navy											Date: March 2024	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605217N / *Common Avionics*							
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	272.482	76.062	81.076	87.053	-	87.053	70.635	64.211	52.525	53.614	Continuing	Continuing
0572: *JT Service/NV Std Avionics CP/SB*	272.482	76.062	81.076	87.053	-	87.053	70.635	64.211	52.525	53.614	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project provides for the identification, study, design, development, demonstration, test, evaluation, and qualification of standard avionics capabilities for Navy use, and wherever practicable, use across all Services and Foreign Military Sales. Such air combat electronics developments include communications and airborne networking, navigation and sensors, flight avionics, safety systems, and flight mission information systems for both forward fit and retrofit aircraft. These efforts continue to maintain federated systems while encouraging transition of procurements to support a modular system for enhanced performance and affordability. Consideration is given up front to reduce acquisition costs through larger procurement quantities that satisfy multi-aircraft customer requirements and that reduce life cycle costs in the areas of reliability, maintainability, and training.

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 requirements prior to full-rate production decision.

The total cost of the Digital Interoperability (DI)/Marine Air Ground Task Force (MAGTF) Agile Networking Gateway Link (MANGL) (DI/MANGL) Middle Tier of Acquisition effort is $173.6 million, including RDT&E and procurement of prototype units. The DI/MANGL is fully funded through FY27.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	77.960	81.076	61.122	-	61.122
Current President's Budget	76.062	81.076	87.053	-	87.053
Total Adjustments	-1.898	0.000	25.931	-	25.931
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.898	0.000			
• Program Adjustments	0.000	0.000	3.766	-	3.766
• Rate/Misc Adjustments	0.000	0.000	22.165	-	22.165

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 0605217N *I Common Avionics*

Change Summary Explanation

Program Adjustments of $3.766 million includes an increase for Digital Interoperability (DI)/Marine Air Ground Task Force (MAGTF) Agile Networking Gateway Link (MANGL) HQMC for Marine Air-Ground Tablet (MAGTAB) Life Cycle Refresh Program of Record. Funding realigned consolidates commodity management of devices for program of record to centralize configuration control and centralizes funding to maintain operational security and tactical relevance with no new start.

Program Adjustments of $22.382 million from APN-5 to RDT&E in FY25 for a zero-sum realignment for Digital Interoperability (DI)/Marine Air-Ground Task Force (MAGTF) Agile Networking Gateway Link (MANGL) to address technical delays in response to real-time security threats resulting in the NSA certification timeline of Software Reconfigurable Payload (SRP) systems integrations, which have resulted in a backlog of software rework and certification timeline.

Program Adjustments of $0.217 million includes a decrease for other rate/miscellaneous adjustments.

Schedule:
Tactical Communications (TACCOM):
FY24: Updated nomenclature for Gen5A/Gen6 TSV from 3.1.x to TSV 4.x.
FY25: Added Gen6 Crypto Mod 2 in 1Q/25-4Q/29; Updated nomenclature for Gen5/Gen6 Crypto Mod TSV from 4.x to TSV 5.x.
FY29: Added FYDP requirements.

Ground Proximity Warning System/Terrain Awareness System (GPWS/TAWS II): Overall schedule changes incorporated CMV-22 TAWS II re-baseline due to competing platform priorities as well as H-1 aircraft compiler integration to TAWS II C++ software architecture. Funding was re-invested in the additional research and investigation activities required to present resolution options for the complier in-compatibility issue.
FY23: Changed H-1 TAWS II Requirements Development end date from 1Q/23 to 3Q/23; Changed H-1 TAWS II Software Development FB1 end date from 3Q/23 to 1Q/24; Added Northrop Grumman H-1 OFP Compiler Integration/Test 4Q/23-4Q/24; Changed Northrup Grumman (NG)/Bell Helicopter Textron (BHT) Integration Testing FB1 from 4Q/23-1Q/24 to 2Q/24-4Q/24; Changed H-1 TAWS II FB1 Delivery from 4Q/23 to 2Q/24.
FY24: Changed H-60 MS C from 2Q/24 to 3Q/24; Changed H-1 TAWS II Software Development FB2 from 1Q/24-3Q/24 to 1Q/25-3Q/25; Changed V-22 TAWS II Requirements Development Restart from 2Q/24-1Q/25 to 2Q/26-1Q/27; Changed V-22 TAWS II Software Development FB1 from 4Q/24-1Q/26 to 4Q/26-1Q/28. Changed Northrop Grumman/Bell Helicopter Textron Integration Testing FB2 from 3Q/24-4Q/24 to 3Q/25; Changed H-1 TAWS II DT1 from 1Q/24-2Q/24 to 1Q/25; Changed H-1 TAWS II DT2 from 4Q/24-1Q25 to 4Q/25; Changed H-1 ILA from 2Q/24-4Q/24 to 4Q24-2Q/25. Changed H-1 TAWS II FB2 Delivery from 4Q/24 to 3Q/25.
FY25: Changed V-22 Integration Contract from 3Q/25 to 3Q/27.
FY26: Changed Raytheon/Boeing Integration Testing FB1 2Q/26-1Q/27 to 2Q/28-1Q/29. Changed V-22 TAWS II FB1 Delivery from 2Q/26 to 2Q/28.
FY27: Added H-1 Fleet Release 2Q/27. Changed V-22 TAWS II Software Development FB2 from 4Q/27-2Q/28 to 4Q/29; Changed V-22 TAWS II DT1 from 2Q/27-4Q/27 to 2Q/29-4Q/29; Changed V-22 ILA from 4Q/27-2Q/28 to 4Q/29.

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 0605217N *I Common Avionics*

FY28: Added TAWS II FACE Requirements Development 4Q/28-4Q/29. Removed Raytheon/Boeing Integration Testing FB2 from 3Q/28-4Q/28 as it has changed to 3Q/30-4Q/30; Removed V-22 TAWS II DT2 from 4Q/28 as it has changed to 4Q/30; Removed V-22 TAWS II FB2 Delivery from 2Q/28 as it has changed to 2Q/30.

Avionics Component Improvement Program (AvCIP):
FY29: Added FYDP requirements.

Digital Interoperability (DI)/Marine Air Ground Task Force (MAGTF) Agile Networking Gateway Link (MANGL): Changes incorporated HQMC increase for Digital Interoperability (DI)/Marine Air Ground Task Force (MAGTF) Agile Networking Gateway Link (MANGL) HQMC for Marine Air-Ground Tablet (MAGTAB) Life Cycle Refresh Program of Record. Funding realigned consolidates commodity management of devices for program of record to centralize configuration control and centralizes funding to maintain operational security and tactical relevance with no new start. In addition, a FY25 zero-sum realignment to address technical delays in response to real-time security threats resulting in the NSA certification timeline of Software Reconfigurable Payload (SRP) systems integrations, which have resulted in a backlog of software rework and certification timeline.
FY25: Changed Integration MV-22 end date from 1Q/25 to 3Q/25; Added Systems Development and Deliveries for MAGTAB Life Cycle Refresh Software Capability Improvements 1Q/25-4Q/29; Deleted Test Article CA Qty 2 from 2Q/25; Updated nomenclature and Changed CH-53K & KC-130J Test/Rpt from 3Q/25-4Q/25 to 2Q/27-4Q/27.
FY26: Updated nomenclature and Changed CH-53K & KC-130J APP Approval from 1Q/26 to 3Q/25; Deleted Delivery Test Article Qty 2 from 2Q/26.

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 0605217N / *Common Avionics*	Project (Number/Name) 0572 / *JT Service/NV Std Avionics CP/SB*	

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
0572: *JT Service/NV Std Avionics CP/SB*	272.482	76.062	81.076	87.053	-	87.053	70.635	64.211	52.525	53.614	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

(U) Common Avionics FY16 and prior is reflected in PE 0604215N, Project Unit 0572.

A. Mission Description and Budget Item Justification

Joint Services/Navy Standard Avionics Components and Subsystems: This project provides for the identification, study, design, development, demonstration, test, evaluation, and qualification of standard avionics capabilities for Navy use, and wherever practicable, use across all Services and Foreign Military Sales. Standard avionics capabilities under
development include the Joint Service Review Committee for Avionics Standardization (JSRC-AS), Communication Navigation Surveillance/Air Traffic Management (CNS/ATM), Tactical Communications (TACCOM), Ground Proximity Warning System/Terrain Awareness Warning System (GPWS/TAWS II), Avionics Component Improvement Program (AvCIP), Avionics Architectures Team (AAT), Digital Interoperability (DI)/Marine Air Ground Task Force (MAGTF) Agile Networking Gateway Link (MANGL), and Common Mission Computing and Displays (CMCD). Participation in Human Factors Quality Management Board ensures Navy safety upgrades and mandatory safety improvements for naval aircraft.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: Joint Service Review Committee for Avionics Standardization (JSRC-AS)	0.785	0.825	0.769	0.000	0.769
Articles:	-	-	-	-	-
Description: The JSRC-AS program supports Congressional and Assistant Secretary of the Navy for Research, Development and Acquisition direction to control the growing proliferation of unique avionics and improve coordination among the services through the identification, development, and promotion of investigative and development efforts across the services and U.S. Coast Guard. The JSRC-AS supports the development, analysis and review of new avionics requirements with potential for joint service application. The JSRC-AS consists of an O-6 Level principal from each service and U.S. Coast Guard, as well as the appropriate staff, to support joint service working group efforts.					
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 0605217N / *Common Avionics*	**Project (Number/Name)** 0572 / *JT Service/NV Std Avionics CP/SB*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Provide leadership in support of the Navy's interest to the JSRC-AS tri-service committee promoting commonality and joint programs with focus on interoperability, communications, navigation, Joint Services avionics obsolescence management, and update of the Core Avionics Master Plan. ***FY 2025 Base Plans:*** Provide leadership in support of the Navy's interest to the JSRC-AS tri-service committee promoting commonality and joint programs with focus on interoperability, communications, navigation, Joint Services avionics obsolescence management, and update of the Core Avionics Master Plan. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease of $0.056 million is due to reduction in government engineering support.					
Title: Communication Navigation Surveillance/Air Traffic Management (CNS/ATM)	0.143	0.147	0.150	0.000	0.150
Articles:	-	-	-	-	-
Description: This program will conduct and support CNS/ATM research, studies, development, integration, demonstration, test and evaluation efforts for Naval aviation platforms in development. Platform integration of Mode Select (S), 8.33 kHz, Reduced Vertical Separation Minimum (RVSM), Required Navigation Performance Area Navigation (RNP RNAV) to include M Code, and Automatic Dependent Surveillance-Broadcast Out (ADS-BO) functional integration and certification efforts into Naval aircraft. Assist with insertion of communication, navigation, surveillance, and supporting technologies and conduct capability certification on developmental platforms. Capabilities include Mode S, 8.33 kHz, RVSM, RNP RNAV, ADS-BO, and other civil and military capabilities. ***FY 2024 Plans:*** Continue to evaluate technologies and develop solutions to support platform integrations. ***FY 2025 Base Plans:*** Continue to evaluate technologies and develop solutions to support platform integrations. ***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 0605217N / *Common Avionics*	**Project (Number/Name)** 0572 / *JT Service/NV Std Avionics CP/SB*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
There is no significant change from FY24 to FY25.					
Title: Tactical Communications (TACCOM)	18.339	23.142	21.341	0.000	21.341
Articles:	-	-	-	-	-
Description: This program will conduct research, studies, development, integration, demonstration, test and evaluation efforts to ensure tactical communication systems and capabilities are developed and available to support naval aviation requirements. Perform tactical communication platform integration studies and activities to determine technical and cost effective solutions across naval aviation. Develop tactical communications (voice/data) requirements, concepts and systems which have application across naval aviation. Support all necessary tasks to ensure evolution of legacy communications systems incorporating programmable Communication Security/Information Assurance, Transmission Security (TRANSEC) mandated National Security Agency (NSA) Advanced Crypto Capability (ACC) modernization initiatives aligned to Crypto Modernization 2.0 (CM2) specification, Tactical Secure Voice (TSV) Suite B, Combat Net Radio (CNR) Variable Message Format (VMF), Beyond Line-of-Sight, Satellite Communication (SATCOM) Modernization including Mobile User Objective System (MUOS), High Frequency, Second Generation Anti-Jam Tactical UHF Radio for NATO (SATURN), Single Channel Ground and Airborne Radio System (SINCGARS), Enhanced SINCGARS Improvement Program (E-SIP), SINCGARS Cryptographic Modernization with TSV 4.x, civil interoperability, and data link into the ARC-210 system. Support for networking requirements development and prototyping, Integrated Waveform (IW), Intelligence Broadcast System over modern Code Division Multiple Access based satellite channels, Tactical Networks, Data Links, Link 16 and Link 22. ***FY 2024 Plans:*** Continue software development and execute NSA driven crypto algorithm changes for Gen5A/Gen6 TSV 3.1.2 crypto modernization, Single Channel Ground and Airborne Radio System (SINCGARS 3.1.1), Advanced Crypto Capabilities (ACC) modernization, Mobile User Objective System (MUOS) 3.2 and Second Generation Anti-Jam Tactical UHF Radio for NATO (SATURN Ed. 4). Attain Gen5 JITC Certification. Attain approval of Gen5 TRANSEC ECP. Release Gen5 Ver 008. Initiate VMF/Data Link MIL Standard Evolution. Initiate Gen6 Crypto Mod, TSV 4.x, ACC 2.x, SATURN ed. 5 and MUOS 4.x. Attain Gen6 NSA Certification. ***FY 2025 Base Plans:*** Continue software development and execute NSA driven crypto algorithm changes for Gen5A TSV 4.x, Crypto Modernization, SINCGARS, SATURN and Gen6 TSV 4.x, Crypto Modernization, SINCGARS, ACC, SATURN 4, MUOS 3.2. Execute VMF/Data Link MIL Standard Evolution. Continue Gen6 Crypto Mod, TSV 5.x, ACC 2.x,					

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 0605217N / *Common Avionics*	**Project (Number/Name)** 0572 / *JT Service/NV Std Avionics CP/SB*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
SATURN ed. 5 and MUOS 4.x. Execute Gen6 Crypto Mod 2. Attain Gen6 JITC Certification. Deliver Gen6 Ver 005 Release. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease of $1.801 million from FY24 to FY25 is due to a change in scope of Tactical Secure Voice 4.x specification to support integration into the radios therefore reducing level of effort.					
Title: Ground Proximity Warning System/Terrain Awareness Warning System (GPWS/TAWS II)	8.275	6.302	6.536	0.000	6.536
Articles:	-	-	-	-	-
Description: This program will conduct research, studies, development, integration, demonstration, test and evaluation efforts to meet naval aviation GPWS/TAWS II requirements. These requirements span all operational modes and operational environments, to include Degraded Visual Environment. Perform GPWS/TAWS II platform integration studies and activities to determine technical and cost effective solutions across naval aviation. Develop GPWS/TAWS II solutions tailored to platform performance and range of military operations. Develop simulation models for use at Manned Flight Simulator (MFS) or other simulation environments as required for platform tailoring. Evaluate aircraft simulation models for suitability in GPWS/TAWS II development effort. Develop GPWS/TAWS II algorithms utilizing simulation environments as real-time hardware and pilot in the loop tool. Develop and evaluate algorithm interfaces necessary for integration of the algorithm within platform host computer. Develop software code to execute GPWS/TAWS II algorithm in host platforms. ***FY 2024 Plans:*** Obtain H-60 MS C. H-60 Fleet Release. Complete H-1 TAWS II Software development for FB1. Continue/ Complete Northrop Grumman H-1 OFP Compiler Upgrade Integration and Test. Start and complete Northrop Grumman / Bell Helicopter Textron Integration Testing FB1. Begin Integrated Logistics Assessment for H-1 TAWS II. Deliver H-1 TAWS II FB1. ***FY 2025 Base Plans:*** Start and complete H-1 TAWS II Software Development for FB2. Start and complete Northrop Grumman / Bell Helicopter Textron Integration Testing FB2. Start and complete H-1 TAWS II DT1 and DT2. Complete Integrated Logistics Assessment for H-1 TAWS II. Deliver H-1 TAWS II FB2. ***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 0605217N / *Common Avionics*	**Project (Number/Name)** 0572 / *JT Service/NV Std Avionics CP/SB*

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:*** Increase of $0.234 million from FY24 to FY25 is due to inflation and H-1 TAWS II DT2 cost increase.					
Title: Avionics Component Improvement Program (AvCIP)	5.132	5.150	5.125	0.000	5.125
Articles:	-	-	-	-	-
Description: Investigate high value Return On Investment component improvement candidate projects. Design and develop solutions that correct avionics systems reliability, performance and sustainment deficiencies in support of NAVAIR Commander's Strategic Imperatives of 'Aligning existing resources to better support today's Readiness' and 'Increase Speed of Products to the Fleet.' Stop operating and sustainment cost growth by reducing costs for fielded systems and implementing life-cycle cost reduction initiatives as part of new systems development. This program positions resources for next year application to fast-track corrections to existing problematic aviation electronics systems. Projects address critical readiness issues (significant back-orders or impending sustainability failures that threaten to down aircraft), functional performance obsolescence issues (system failing to support mission requirement), and top sustainment cost drivers (out of proportion annual maintenance or repair costs). Resources enable design and development of technology insertion and product redesign or replacement to meet readiness goals, meet mission objectives, or reduce overall sustainment costs. Candidate projects are submitted via a rigorous template, reviewed by a panel of Avionics professionals, and selected based upon urgency, warfighting contributions, breadth of application and scope of Return On Investment. Resources cover non-recurring engineering elements (including design and development, prototypes, platform integration, test and evaluation), program management and associated logistics elements (including technical data preparation, support equipment, provisioning, and training). ***FY 2024 Plans:*** Address current fleet problem avionics systems (top readiness degraders, cost drivers, obsolescence-driven sustainability, capability loss, fleet head-hurters). ***FY 2025 Base Plans:*** Address current fleet problem avionics systems (top readiness degraders, cost drivers, obsolescence-driven sustainability, capability loss, fleet head-hurters). ***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 0605217N / *Common Avionics*	**Project (Number/Name)** 0572 / *JT Service/NV Std Avionics CP/SB*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
There is no significant change from FY24 to FY25.					
Title: Avionics Architecture Team (AAT)	10.263	10.609	9.973	0.000	9.973
Articles:	-	-	-	-	-
Description: The Avionics Architecture Team (AAT) provides hardware and software (HW/SW) standards, product line development, and management for common HW/SW operating environments. AAT is chartered to facilitate NAVAIR's compliance with the Modular Open Systems Approach (MOSA) requirements in accordance with 10 U.S.C. 2446a-2446c; FY17 National Defense Authorization Act (NDAA) Section 805 Modular Open Systems Approach in Development of Major Weapon Systems, 23 Dec 2016; Tri-Service Memorandum for Service Acquisition Executives and Program Executive Officers, 07 Jan 2019; DoDI 5000.02 Operation of the Adaptive Acquisition Framework, 23 Jan 2020; FY21 NDAA Sec. 804 - Implementation of Modular Open Systems Architecture requirements, 01 Jan 2021; and SECNAVINST 5000.2G, Implementation of the Defense Acquisition System and the Adaptive Acquisition Framework, 08 Apr 2022. The Software Open Systems Technologies (SWOST) team manages the Future Airborne Capability Environment (FACE[TM]) Technical Standard, which is developed with the joint collaboration between the Navy, Army, Air Force, industry and academia in accordance with Public Law 104-113. The Hardware Open Systems Technologies team includes the Hardware Open Systems Technologies (HOST) standard, which is developed through government and academia collaboration and is provided to industry for prototyping and implementation efforts. The Functional Architecture for Strategic Reuse (FASTR) initiative, through Platform Integration and Modeling, will define a standard process for mission level capability decomposition to support product line development and management. The AAT provides Subject Matter Experts to define and architect a set of Open Architecture Standards and product lines, design principles and guidance, development and integration tools, acquisition strategy, contracting guidance and cost estimates. The AAT also provides Subject Matter Experts directly to weapons systems/platforms to support inclusion of Open Architecture Standards in the early stages of life cycle development. The results will enable Department of Defense (DoD) weapons systems/platforms to systematically procure open, modular and reconfigurable software architectures, reuse HW/SW, and deliver scalable, portable and interoperable warfighting capabilities at a faster rate, reducing redundant development costs, and increasing competition. Infrastructure components and frameworks built to these standards will support capability upgrades on various platforms by enabling integration of common, non-proprietary applications. The AAT initiatives enable the government's role as Lead Systems Integrator, per the Weapons System Acquisition Reform Act (WSARA) 2009, and cost effectively manage data rights for reuse across the DoD.					
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 0605217N / *Common Avionics*	**Project (Number/Name)** 0572 / *JT Service/NV Std Avionics CP/SB*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Provide development, mission based engineering, systems engineering and program management support for design and implementation guidance of open standards while demonstrating their interoperability. Generate revisions for future editions of the Future Airborne Capability Environment (FACE) Technical Standard based on issues identified by government and industry consortium while facilitating the transition of FACE maintenance from the government to industry. Incorporate new hardware technologies and maintain Tier 3 HOST specifications to support widely adopted commercial technologies and to integrate with platform requirements. Provide input to platforms developing Tier 3 and Tier 4 HOST specifications. Implement Small Form Factor standards into the HOST environment, supporting UAV and other small platforms. Assist platforms with strategies for modular functional architectures and implementation of open architecture standards. Develop HOST Conformance Test procedures and tools to verify conformance to the published HOST standard. Participate in international collaboration efforts to define a comprehensive open architecture strategy. Provide Naval Air Enterprise Subject Matter Expertise and documentation support for OSD's Modular Systems Working Group, supporting Congressional and DoD directed Open Architecture development. Generate alignment strategies for a comprehensive open architecture approach between Navy, Army, Air Force and international partners. Support the implementation of Naval Aviation's data model strategy. Provide Subject Matter Expert support for platform integration and competitive source selection. Academia prototyping and demonstration efforts for Future Airborne Capability Environment (FACE), Functional Architecture for Strategic Reuse (FASTR) and Hardware Open Systems Technologies (HOST) initiatives.					
FY 2025 Base Plans: Provide development, mission-based engineering, systems engineering and program management support for design and implementation guidance of open standards which drive interoperability. Assist the Future Airborne Capability Environment (FACE[TM]) Consortium with revisions for future editions of the FACE Technical Standard based on issues identified by government and industry consortium, while facilitating the transition of FACE maintenance from the government to industry. Assist platforms as they implement Open Mission Systems (OMS) Open Architecture. Incorporate new hardware technologies and maintain Tier 3 Hardware Open Systems Technologies (HOST) specifications to support widely adopted commercial technologies to meet platform requirements. Implement Small Form Factor standards into the HOST environment, supporting Unmanned Aircraft Systems (UAS) and other small platforms. Assist the Sensor Open Systems Architecture (SOSA[TM]) Consortium with revisions for future editions of the SOSA Technical Standard based on issues identified by government and industry consortium. Assist platforms with strategies for modular functional architectures and implementation of open architecture standards such as Joint Strike Fighter (JSF) with their Tier 3 specification development, review and implementation. Continued support of Open Architecture implementation of multiple platforms which includes, but is not limited to: Joint Avionics Reconfigurable Visual					

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 0605217N / *Common Avionics*	**Project (Number/Name)** 0572 / *JT Service/NV Std Avionics CP/SB*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Information System (JARVIS) FACE implementation and Helmet Mounted Display in MV-22; E-6B Modular Open Systems Approach (MOSA) and FACE implementation upgrade; Navy Tactical Combat Training Systems (TCTS) II support with FACE implementation on their upgrade, Future Vertical Lift software and hardware MOSA implementation. Develop HOST Conformance Test procedures and tools to verify conformance to the published HOST standard. Provide Naval Air Enterprise Subject Matter Expertise and documentation support for OSD OUSD Research and Engineering Modular Systems Working Group, supporting Congressional and DoD directed Open Architecture development and Standards availability to industry and academia. Generate alignment strategies for a comprehensive open architecture approach between Navy, Army, Air Force and international partners. Support the implementation of Naval Aviation's data model strategy. Provide Subject Matter Expert support for platform integration and competitive source selection; academia prototyping and demonstration efforts for FACE, OMS, HOST, SOSA and Functional Architecture for Strategic Reuse (FASTR) initiatives. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease of $0.636 million from FY24 to FY25 is due to the transition of the Future Airborne Capability Environment (FACE) Conformance Test Suite (CTS) management to the FACE Consortium.					
Title: Digital Interoperability (DI) / Marine Air Ground Task Force (MAGTF) Agile Networking Gateway Link (MANGL) ***Articles:*** ***Description:*** Digital Interoperability (DI) is the United States Marine Corps' strategy to bridge multiple generations of technology using three matured technologies; gateways, software defined radios, and Commercial Off-The-Shelf (COTS) interfaces. This modular developmental approach enables iterative migration to advanced waveforms and payloads while providing enhanced digital connectivity between forces using dissimilar technologies. DI will enable fleet integration of new capabilities on COTS tablets and Government Off-The-Shelf (GOTS) applications. DI will also enable logistics tracking and reporting (cargo and personnel) with the use of Radio Frequency Identification technology, advanced Electronic Warfare/Cyber capability, and threat data capturing/off-boarding. The architecture establishes the foundation to enable system performance data off-boarding, as well as data fusion and artificial intelligence augmentation capabilities. Development and testing of MANGL components, to include Software Reconfigurable Payload (SRP), gateways and tablets, in Hub and Spoke configurations for MV-22B. Translates messages from one tactical data link to	32.616 -	33.386 7	39.624 -	0.000 -	39.624 -

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 0605217N / *Common Avionics*	**Project (Number/Name)** 0572 / *JT Service/NV Std Avionics CP/SB*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
another (i.e. Link 16 to Adaptive Networking Wideband Waveform [ANW2]) with a tactically proven gateway, thereby leveraging previous investments. Provides the foundation for Command, Control, Communications, Electromagnetic Spectrum Operations, and Intelligence exploitation of platform/sensor data off-boarding, data fusion, and distributed processing. Enables real-time blue force situational awareness and improved decision-making through the sharing of a Common Operational Picture, including friendly force positions, capabilities, and threat information for both the aircrew and embarked troops. Provides for operations in denied and degraded environments, enables range extension and distributed operations. SRP 2.0 is a single common payload module that is government configuration controlled architecture, and reconfigurable to support simultaneous missions and applications making maximum use of available bandwidth and ensuring interoperability all with a cyber-secure, National Security Agency (NSA) approved, cryptographic solution. There are earlier versions of the SRP (1.0 and 1.5) operationally deployed in other naval platforms. SRP 2.0 provides an imminently upgradable platform for eventual inclusion of Low Probability of Intercept (LPI)/ Low Probability of Detection (LPD) and advanced mesh waveforms for the exchange of tactical data, imagery, and video. Incorporation of new waveforms can be accomplished within 18 months vice the 36 to 48 months required for integration and initial fielding using traditional approaches. Marine Air Ground Task Force (MAGTF) Agile Network Gateway Link (MANGL) Marine Air Ground Tablet (MAGTAB) provides life cycle and technical support for hardware refresh, processing power evolution, crypto certification/compliance and tactical software application evolution for all MAGTAB DI/MANGL end user devices. This function includes development of software capability improvements to be released every 6 months to enable the MANGL system to keep apace of changes in the operational environment. ***FY 2024 Plans:*** Complete Design Review #2. Obtain CH-53K & KC-130J Prototype Approval. Continue with MV-22 integration and logistics analysis. Initiate CH-53K and KC-130J integration and logistics analysis. Award contract for seven (7) MANGL test articles. Complete MANGL Ground Node Prep/Test. Initiate and complete Qual Testing and Cyber Security Tabletop. Continue Middle Tier of Acquisition Prototyping effort to design, develop and deliver four (4) MANGL test articles. ***FY 2025 Base Plans:*** Complete Rapid Prototyping efforts on MV-22B aircraft. Conduct MTA Rapid Prototype out brief with PEO(CS), obtain approval to enter initial fielding on MV-22B. Obtain CH-53K & KC-130J AAP approval. Complete logistics analysis and integration on MV-22. Continue integration and logistics analysis for CH-53K & KC-130J. Develop					

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 0605217N / *Common Avionics*	**Project (Number/Name)** 0572 / *JT Service/NV Std Avionics CP/SB*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
and deliver two (2) DI/MANGL / MAGTAB software capability improvement releases. Conduct Ground and Flight Demonstration testing and produce test report. Deliver ten (10) MANGL test articles. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase of $6.238 million is to address technical delays in response to real-time security threats impacting the NSA certification timeline of Software Reconfigurable Payload (SRP) systems integrations and causing a backlog of software rework.					
Title: Common Mission Computing and Displays (CMCD)	0.509	1.515	3.535	0.000	3.535
Articles:	-	-	-	-	-
Description: The Common Mission Computing and Displays (CMCD) program enables the development, procurement, integration, test and fielding of common capabilities through the use of commercial off the shelf mission computing and displays products as part of the CMCD family of systems across multiple platforms. As part of CMCD, the Mission Computer Alternative (MCA) and the Mission Computer Adjunct Processor (MCAP), provides for a current state technology common mission computing baseline across multiple legacy aircraft platforms to include the T-45 Goshawk, F/A-18E/F, EA-18G and E-2D Hawkeye. MCA and MCAP allows for technology refresh, application development, multi-capability insertion and cyber protection activities to be conducted throughout the mission computer lifecycle in the government led Multi-Use Laboratory Environment (MULE). The MULE will also evaluate cyber solutions in accordance with the processes defined in the Risk Management Framework for cyber protections. MCA and MCAP will enable platforms to remain relevant and rapidly adapt to emerging threats with new capabilities without waiting years for the traditional mission computer redesign, test and fielding process. Also, part of the CMCD program is the Common Display Alternatives (CDA) initiative to increase pilot tactical and situational awareness and improve the man-machine interface for naval aviators. The CDA initiative evaluates military aircraft platform requirements and commercial aircraft display products for applicability to those military aircraft platforms. Commercial displays are known for their high reliability and the incorporation of the latest technologies. ***FY 2024 Plans:*** Conduct assessments of Mission Computer Alternative (MCA) and Mission Computer Adjunct Processor (MCAP) platform processing needs through organic based Multi-Use Laboratory Environment (MULE) lab activities to enhance the MCA and cyber protection capabilities. Continue planning for software and hardware interoperability by leveraging Technology and Capability insertion capabilities across multiple legacy platforms.					

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 0605217N / *Common Avionics*	**Project (Number/Name)** 0572 / *JT Service/NV Std Avionics CP/SB*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Identify and evaluate technical refreshes of components such as potential replacement processors, new interfaces and increased memory needs. ***FY 2025 Base Plans:*** Conduct assessments of Mission Computer Alternative (MCA) and Mission Computer Adjunct Processor (MCAP) platform processing needs through organic Multi-Use Laboratory Environment (MULE) lab activities. This information will lead to enhancements of the MCA and MCAP. Development of network cyber security solutions with increased protections against emerging threats. Continue planning for, and development of, interoperable software and hardware components that leverage Open Architecture for Technology and Capability insertion across both legacy and future platforms. Additional development of third-party applications and hardware to host the Tactical Combat Training System capability which will initially support E-2D MCAP requirements and will subsequently be available to port to additional platforms, as required. Identify and evaluate future technical refreshes of components such as replacement processors, new interfaces and increased memory needs. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase of $2.02 million from FY24 to FY25 is due to the Common Mission Computing and Displays (CMCD) team development of third-party applications in support of the MCAP E-2D requirements, while also developing Common Displays Alternatives (CDA) in effort to bring a tactical edge to platforms. In addition, the increase is also attributed to the development of government network security solutions to ensure new capabilities are protected against emerging threats (i.e., cyber protection).					
Accomplishments/Planned Programs Subtotals	76.062	81.076	87.053	0.000	87.053

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
• APN/0577: *Common Avionics Changes*	128.072	136.199	139.113	-	139.113	187.648	228.499	280.020	339.134	2,241.132	6,800.711

Remarks

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 0605217N / *Common Avionics*	**Project (Number/Name)** 0572 / *JT Service/NV Std Avionics CP/SB*

D. Acquisition Strategy

Communication Navigation Surveillance/Air Traffic Management (CNS/ATM) program is a system of systems. The program will encompass the integration of various systems which will be procured utilizing existing contracts for integration on forward-fit and retrofit platforms to provide CNS/ATM functionality. Tactical Communications (TACCOM) is utilizing a firm fixed price contract to Collins Aerospace for research and development of the ARC-210 Gen 5/6 and other Navy contract vehicles for integration studies. The Navy will integrate systems and components to satisfy platform requirements to achieve tactical communication capability as determined by analyses. Ground Proximity Warning System/Terrain Awareness Warning System (GPWS/TAWS II) Software Modules will be developed by a Government Software Product Team in collaboration with Industry where required. Avionics Component Improvement Program (AvCIP) will annually review, compete and select candidate component improvement proposals according to urgency, criticality of warfighting contributions, technical risk, breadth of application, and scope of Return On Investment (ROI). Projects are selected by a panel of Avionics management experts, including representatives from OPNAV N98, HQMC AWS, NAVAIR, NAVSUP, and the Fleet. Projects are executed by managers in platform or commodity offices that own the component. The AvCIP program management team manages project selection, allocates funds, monitors multiple project executions against proposed spend plans, and tracks solution performance and achievement of projected ROIs over time using Fleet maintenance and component performance databases. Cost avoidances are coordinated with OPNAV N98 to balance Flying Hour Program costs. Component improvement solutions include modular hardware, software and material upgrades. Resources cover engineering elements (including design and development, prototypes, platform integration, test and evaluation), program management and associated logistics elements (including technical data preparation, support equipment, provisioning, and training). Avionics Architectures Team (AAT) will provide acquisition strategy guidance and direct support to weapon systems/platforms implementing open systems architectures to address open architecture requirements and to conform to public law. Common Mission Computing and Displays (CMCD) enables the development, test and fielding of common capabilities through the use of commercial off the shelf mission computing and displays products across multiple platforms through the Multi-Use Laboratory Environment. Digital Interoperability (DI)/Marine Air Ground Task Force (MAGTF) Agile Networking Gateway Link (MANGL) is approved as a Middle Tier Rapid Prototyping/Rapid Fielding Program. An Other Transaction Authority (OTA) contracting strategy is being used to fund the prototype and procure test and lab assets. The MANGL prototype will integrate upgraded system components previously fielded by other initiatives with a government developed software reconfigurable payload.

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 0605217N / *Common Avionics*	**Project (Number/Name)** 0572 / *JT Service/NV Std Avionics CP/SB*

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 Dev	Various	Various : Various	29.578	4.855	Jan 2023	4.906	Jan 2024	5.083	Jan 2025	-		5.083	Continuing	Continuing	Continuing
Primary Hardware Dev	WR	NAWCAD : Patuxent River, MD	2.338	1.712	Nov 2022	2.181	Nov 2023	1.621	Nov 2024	-		1.621	Continuing	Continuing	Continuing
Primary Hardware Dev DI/ MANGL	MIPR	NRL : Washington, DC	19.510	11.041	Oct 2022	10.708	Jan 2024	19.633	Oct 2024	-		19.633	0.000	60.892	60.892
Primary Hardware Dev DI/ MANGL	SS/FFP	Collins Aerospace : Cedar Rapids, IA	3.195	7.650	Jan 2023	0.000		0.000		-		0.000	0.000	10.845	10.845
Primary Hardware Dev DI/ MANGL	SS/FFP	Kranze Technology Solutions : Prospect Heights, IL	6.514	9.692	Oct 2022	0.000		0.000		-		0.000	0.000	16.206	16.206
Aircraft Integration DI/ MANGL	SS/FFP	Kranze Technology Solutions : Prospect Heights, IL	0.000	0.000		17.632	Dec 2023	8.186	Dec 2024	-		8.186	0.000	25.818	25.818
Aircraft Integration TACCOM	SS/FFP	Collins Aerospace : Cedar Rapids, IA	48.953	10.341	Nov 2022	14.362	Nov 2023	13.065	Nov 2024	-		13.065	0.000	86.721	86.721
Aircraft Integration GPWS/ TAWS II	SS/CPIF	Northrup Grumman : Woodland Hills, CA	2.989	2.128	Feb 2023	1.922	Nov 2023	1.962	Feb 2025	-		1.962	0.000	9.001	9.001
Aircraft Integration CMCD	WR	NAWCAD : Patuxent River, MD	0.000	0.000		0.000		1.781	Nov 2024	-		1.781	0.000	1.781	1.781
Systems Engineering AAT	MIPR	CCDC/UARC : Huntsville, AL	3.193	1.700	Nov 2022	1.742	Nov 2023	1.707	Nov 2024	-		1.707	0.000	8.342	8.342
Systems Engineering TACCOM	WR	NAWCAD : Patuxent River, MD	12.553	2.029	Nov 2022	2.310	Nov 2023	2.175	Nov 2024	-		2.175	Continuing	Continuing	Continuing
Systems Engineering	Various	Various : Various	14.576	2.525	Dec 2022	2.454	Dec 2023	2.315	Dec 2024	-		2.315	Continuing	Continuing	Continuing
Systems Engineering	WR	NAWCAD : Patuxent River, MD	6.180	1.285	Nov 2022	2.548	Nov 2023	2.425	Nov 2024	-		2.425	Continuing	Continuing	Continuing
Prior Yr Product Dev no longer funded in FYDP	Various	Various : Various	26.669	0.000		0.000		0.000		-		0.000	0.000	26.669	26.669
		Subtotal	176.248	54.958		60.765		59.953		-		59.953	Continuing	Continuing	N/A

Remarks

Primary Hardware Dev Various/Various increase from FY24 to FY25 is due to GPWS/TAWS II product contract cost increase.
Primary Hardware Dev NAWCAD decrease from FY24 to FY25 is due to the transition of the Future Airborne Capability Environment (FACE) Conformance Test Suite (CTS) management to the FACE Consortium and realignment of program/project support to Management Services NAWCAD upon actual execution.

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 0605217N / *Common Avionics*	**Project (Number/Name)** 0572 / *JT Service/NV Std Avionics CP/SB*

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 Dev DI/MANGL increase from FY24 to FY25 is due to changing NSA requirements in response to real-time security threats have resulted in a backlog of NRL software rework that has extended the certification timeline of the NRL developed Software Reconfigurable Payload (SRP) radio. Aircraft Integration DI/MANGL decrease from FY24 to FY25 is due to extended NRL certifications of the SRP radio, slowing the KTS integration of SRP within MANGL. Aircraft Integration TACCOM/ Systems Engineering TACCOM NAWCAD/ Systems Engineering Various/Various - decrease from FY24 to FY25 is due to a change in scope of Tactical Secure Voice 4.x specification to support integration into the radios therefore reducing level of effort. Aircraft Integration CMCD increase from FY24 to FY25 is due to team development of third-party applications in support of the MCA and MCAP platforms requirements, while also developing Common Displays Alternatives (CDA) in effort to bring a tactical edge to platforms. Systems Engineering NAWCAD decrease from FY24 to FY25 is due to DI/MANGL completion of prototype design and development, shifting focus to test demonstration requirements as the program transitions to procurement funding in FY25 when the lead platform obtains fielding approval for initial production.														

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 TACCOM	SS/FFP	Collins Aerospace : Cedar Rapids, IA	0.802	1.124	Mar 2023	1.500	Mar 2024	1.529	Mar 2025	-		1.529	0.000	4.955	4.955
Software Development DI/ MANGL-MAGTAB	SS/FFP	Kranze Technology Solutions : Prospect Heights, IL	0.000	0.000		0.000		3.766	Nov 2024	-		3.766	0.000	3.766	3.766
Integrated Logistics Support	WR	NAWCAD : Patuxent River, MD	4.654	1.309	Nov 2022	1.492	Nov 2023	1.284	Nov 2024	-		1.284	Continuing	Continuing	Continuing
Support Development	Various	Various : Various	1.419	0.000		1.000	Nov 2023	0.459	Nov 2024	-		0.459	0.000	2.878	2.878
		Subtotal	6.875	2.433		3.992		7.038		-		7.038	Continuing	Continuing	N/A

Remarks

Software Development DI/MANGL-MAGTAB increase from FY24 to FY25 is for Digital Interoperability (DI)/Marine Air Ground Task Force (MAGTF) Agile Networking Gateway Link (MANGL) HQMC for Marine Air-Ground Tablet (MAGTAB) Life Cycle Refresh Program of Record.
Integrated Logistics Support NAWCAD decrease from FY24 to FY25 is due to DI/MANGL transitioning to procurement and TACCOM change in scope of Tactical Secure Voice 4.x specification to support integration into the radios therefore reducing level of effort.
Support Development Various/Various decrease from FY24 to FY25 is due to completion of NSWC CRANE ILS support within DI/MANGL.

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 0605217N / *Common Avionics*	**Project (Number/Name)** 0572 / *JT Service/NV Std Avionics CP/SB*

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	5.638	2.508	Nov 2022	1.320	Nov 2023	4.073	Nov 2024	-		4.073	Continuing	Continuing	Continuing
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	Various	Various : Various	2.646	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
		Subtotal	8.284	2.508		1.320		4.073		-		4.073	Continuing	Continuing	N/A

Remarks

Developmental Test & Evaluation (DT&E) NAWCAD increase from FY24 to FY25 is due to completion of DI/MANGL prototype design and development, shifting focus to test demonstration requirements as the program transitions to procurement funding in FY25 when the lead platform obtains fielding approval for initial production.

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
Contractor Engineering Support	Various	Various : Various	16.578	4.829	Jan 2023	2.306	Jan 2024	2.000	Jan 2025	-		2.000	Continuing	Continuing	Continuing
Contractor Engineering Support TACCOM	C/CPFF	Precise : Lexington Park, MD	8.358	1.275	Dec 2022	1.300	Dec 2023	1.325	Dec 2024	-		1.325	0.000	12.258	12.258
Contractor Engineering Support AAT	C/CPFF	Precise : Lexington Park, MD	12.900	2.904	Dec 2022	3.224	Dec 2023	2.826	Dec 2024	-		2.826	0.000	21.854	21.854
Contractor Management Support	Various	Various : Various	4.594	0.679	Dec 2022	1.371	Dec 2023	1.398	Dec 2024	-		1.398	Continuing	Continuing	Continuing
Contractor Management Support AAT	C/CPFF	Precise : Lexington Park, MD	2.897	0.600	Dec 2022	0.000		0.000		-		0.000	0.000	3.497	3.497
Contractor Management Support DI/MANGL	C/CPFF	Precise : Lexington Park, MD	1.568	0.000		1.294	Dec 2023	2.345	Dec 2024	-		2.345	0.000	5.207	5.207
Government Engineering Support	WR	NUWC : Keyport, WA	0.613	0.049	Nov 2022	0.000		0.000		-		0.000	0.000	0.662	0.662
Government Engineering Support	WR	NAWCAD : Patuxent River, MD	5.673	0.848	Nov 2022	0.861	Nov 2023	1.140	Nov 2024	-		1.140	Continuing	Continuing	Continuing
Government Engineering Support AAT	WR	NAWCAD : Patuxent River, MD	8.861	1.991	Nov 2022	1.746	Nov 2023	1.543	Nov 2024	-		1.543	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 0605217N / *Common Avionics*	Project (Number/Name) 0572 / *JT Service/NV Std Avionics CP/SB*	

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	17.987	2.936	Nov 2022	2.847	Nov 2023	3.362	Nov 2024	-		3.362	Continuing	Continuing	Continuing
Program Management Support	Various	Various : Various	0.133	0.002	Nov 2022	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Travel	WR	NAVAIR : Patuxent River, MD	0.163	0.050	Feb 2023	0.050	Feb 2024	0.050	Feb 2025	-		0.050	Continuing	Continuing	Continuing
Prior Yr Mgmt Svcs no longer funded in FYDP	Various	Various : Various	0.750	0.000		0.000		0.000		-		0.000	0.000	0.750	0.750
		Subtotal	81.075	16.163		14.999		15.989		-		15.989	Continuing	Continuing	N/A

Remarks

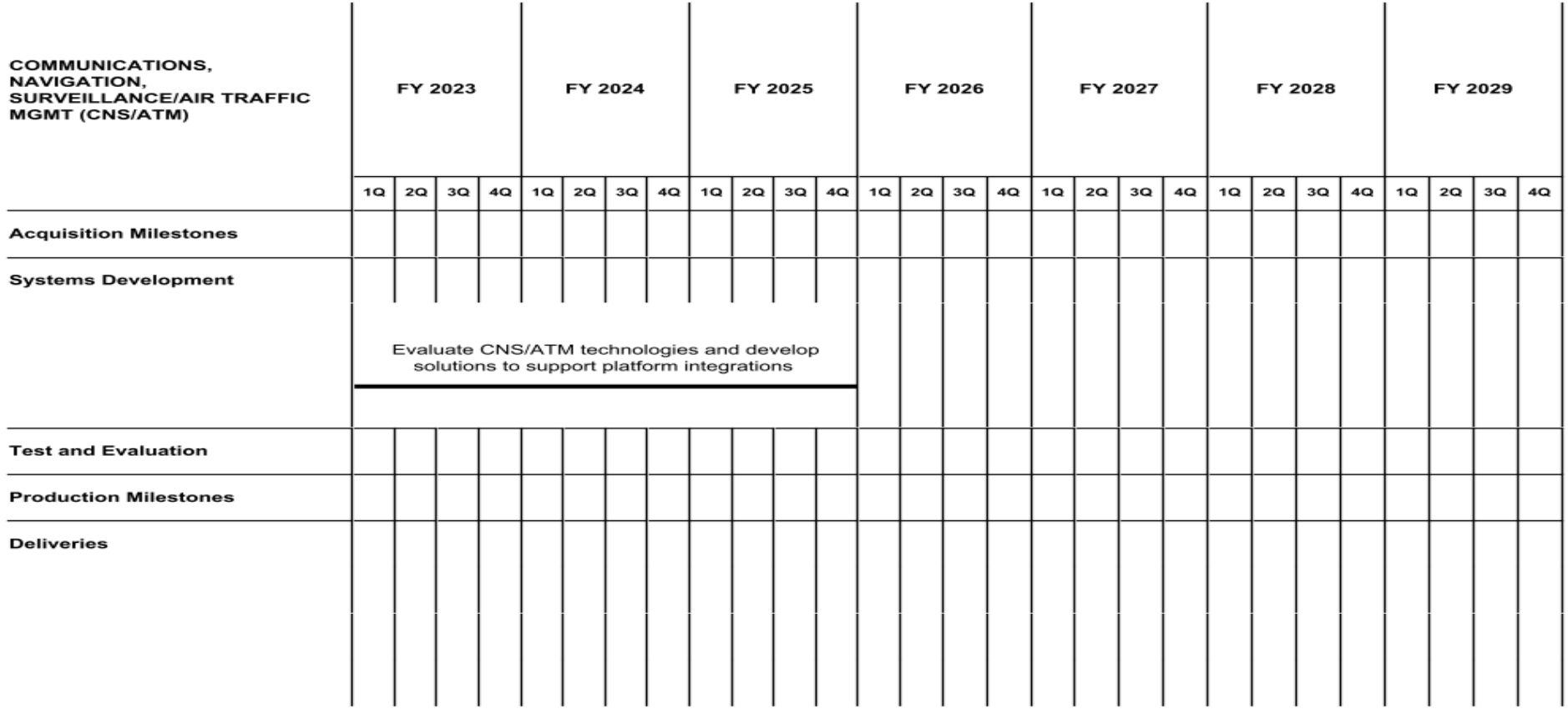
Contractor Engineering Support Various/Various decrease from FY24 to FY25 is due to DI/MANGL completion of prototype design and development, shifting focus to test demonstration requirements.
Contractor Engineering Support AAT decrease from FY24 to FY25 is due to the transition of the Future Airborne Capability Environment (FACE) Conformance Test Suite (CTS) management to the FACE Consortium.
Contractor Management Support DI/MANGL increase from FY24 to FY25 is due to changing NSA requirements within DI/MANGL in response to real-time security threats have resulted in the extension of the certification timeline in support of the Software Reconfigurable Payload (SRP) radio.
Government Engineering Support NAWCAD increase from FY24 to FY25 is due to changing NSA requirements within DI/MANGL in response to real-time security threats have resulted in the extension of the certification timeline in support of the Software Reconfigurable Payload (SRP) radio.
Government Engineering Support AAT NAWCAD decrease from FY24 to FY25 is due to Other Rate/Misc adjustments.
Program Management Support NAWCAD increase from FY24 to FY25 is due to changing NSA requirements within DI/MANGL in response to real-time security threats have resulted in the extension of the certification timeline in support of the Software Reconfigurable Payload (SRP) radio and realignment of program/project support from Primary H/W Dev NAWCAD upon actual execution.

	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	272.482	76.062		81.076		87.053		-		87.053	Continuing	Continuing	N/A

Remarks

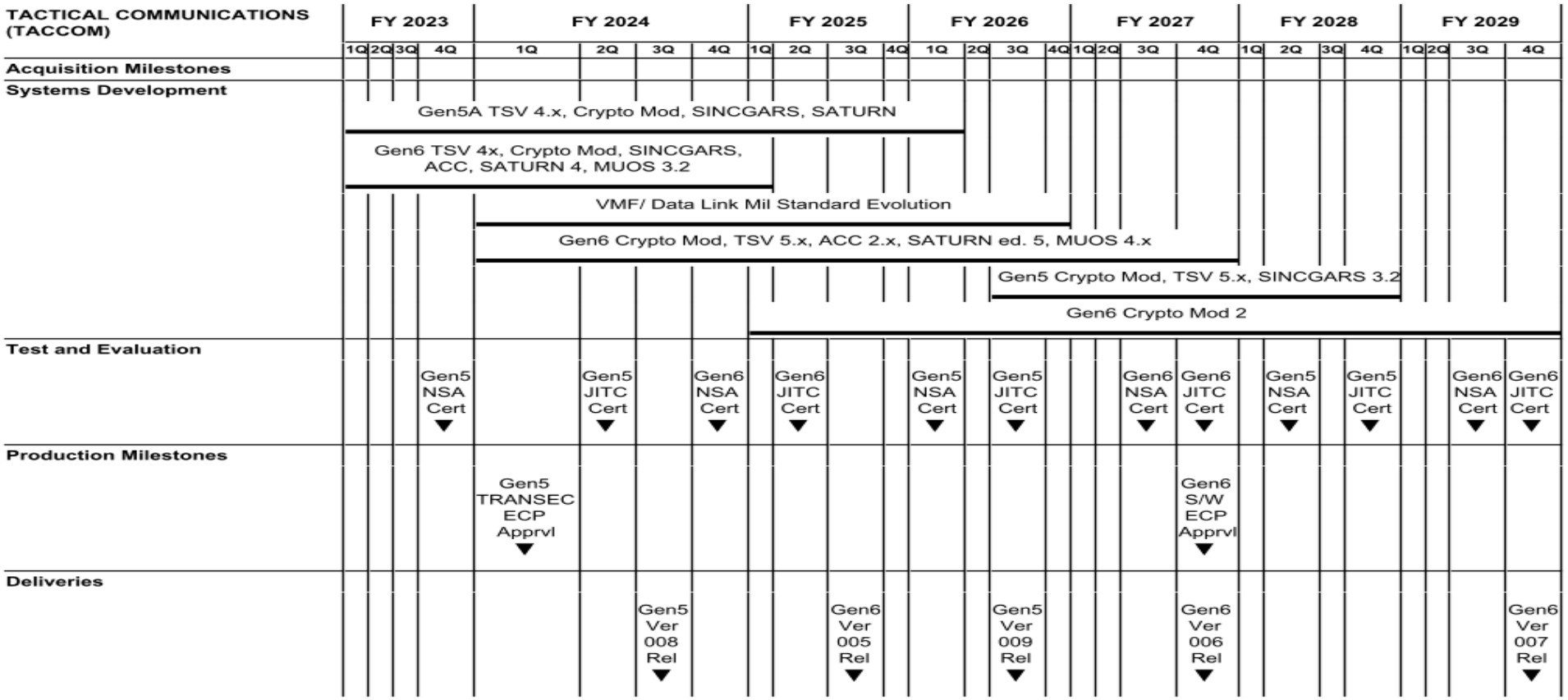
(U) Common Avionics FY16 and prior is reflected in PE 0604215N, Project Unit 0572.

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 0605217N / *Common Avionics*	**Project (Number/Name)** 0572 / *JT Service/NV Std Avionics CP/SB*



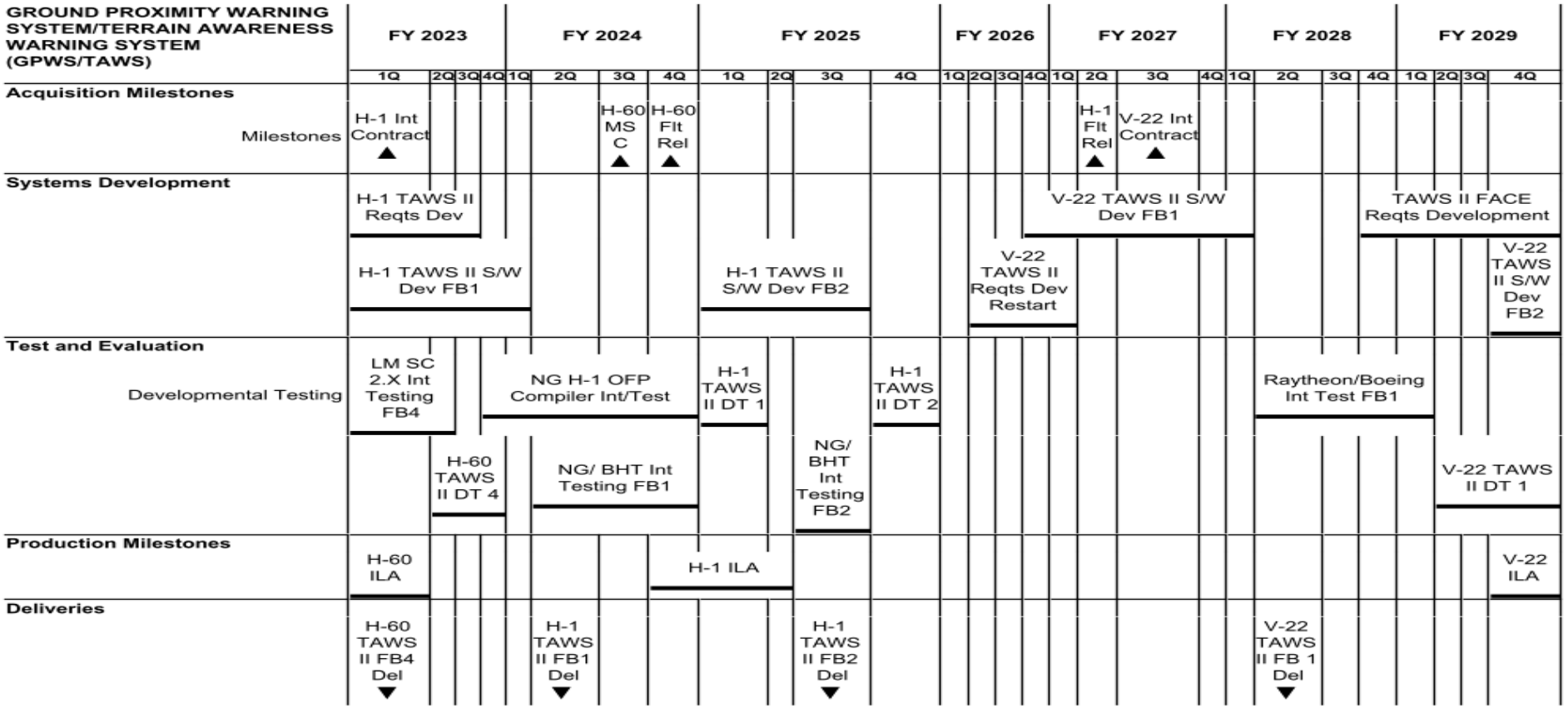
2025PB - 0605217N - 0572

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 0605217N / *Common Avionics*	**Project (Number/Name)** 0572 / *JT Service/NV Std Avionics CP/SB*



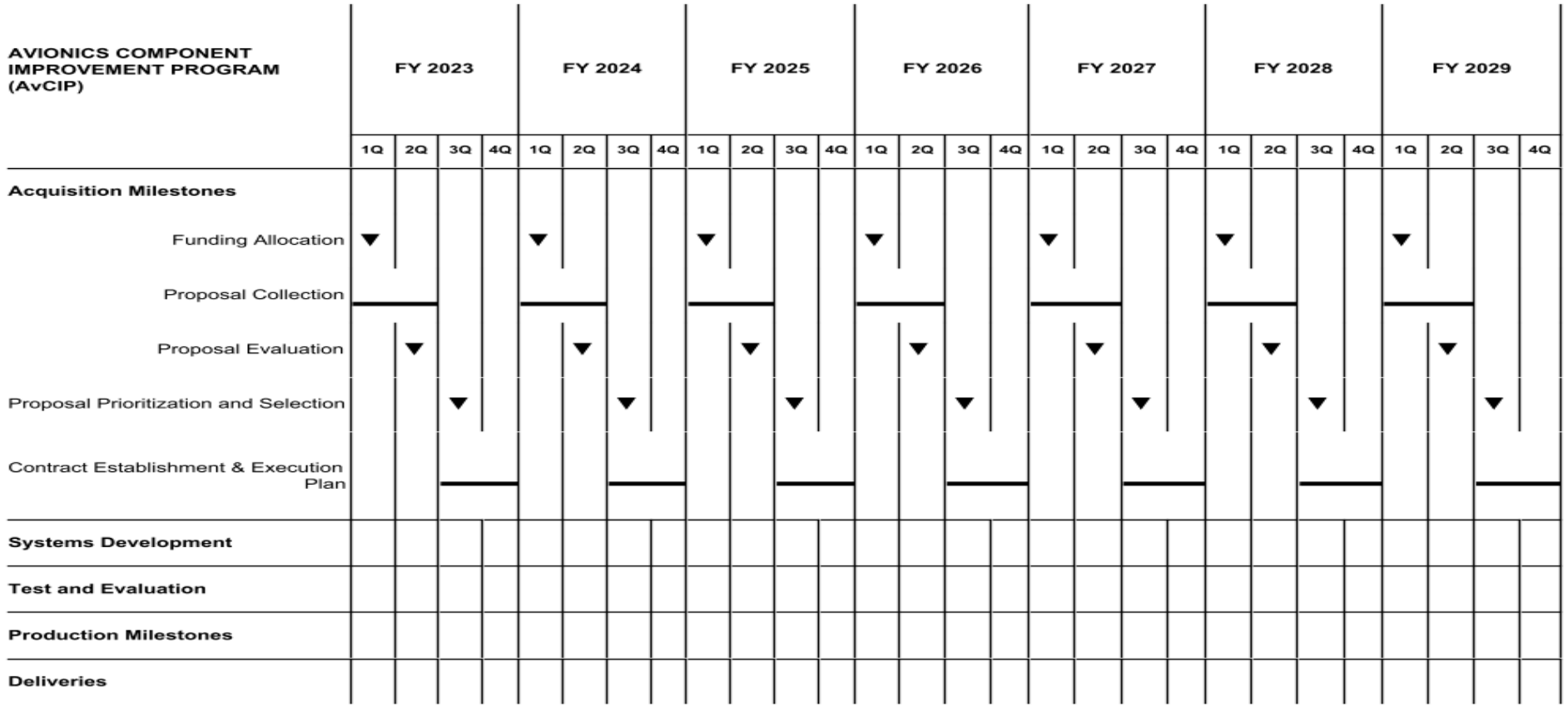
2025PB - 0605217N - 0572

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 0605217N / *Common Avionics*	**Project (Number/Name)** 0572 / *JT Service/NV Std Avionics CP/SB*



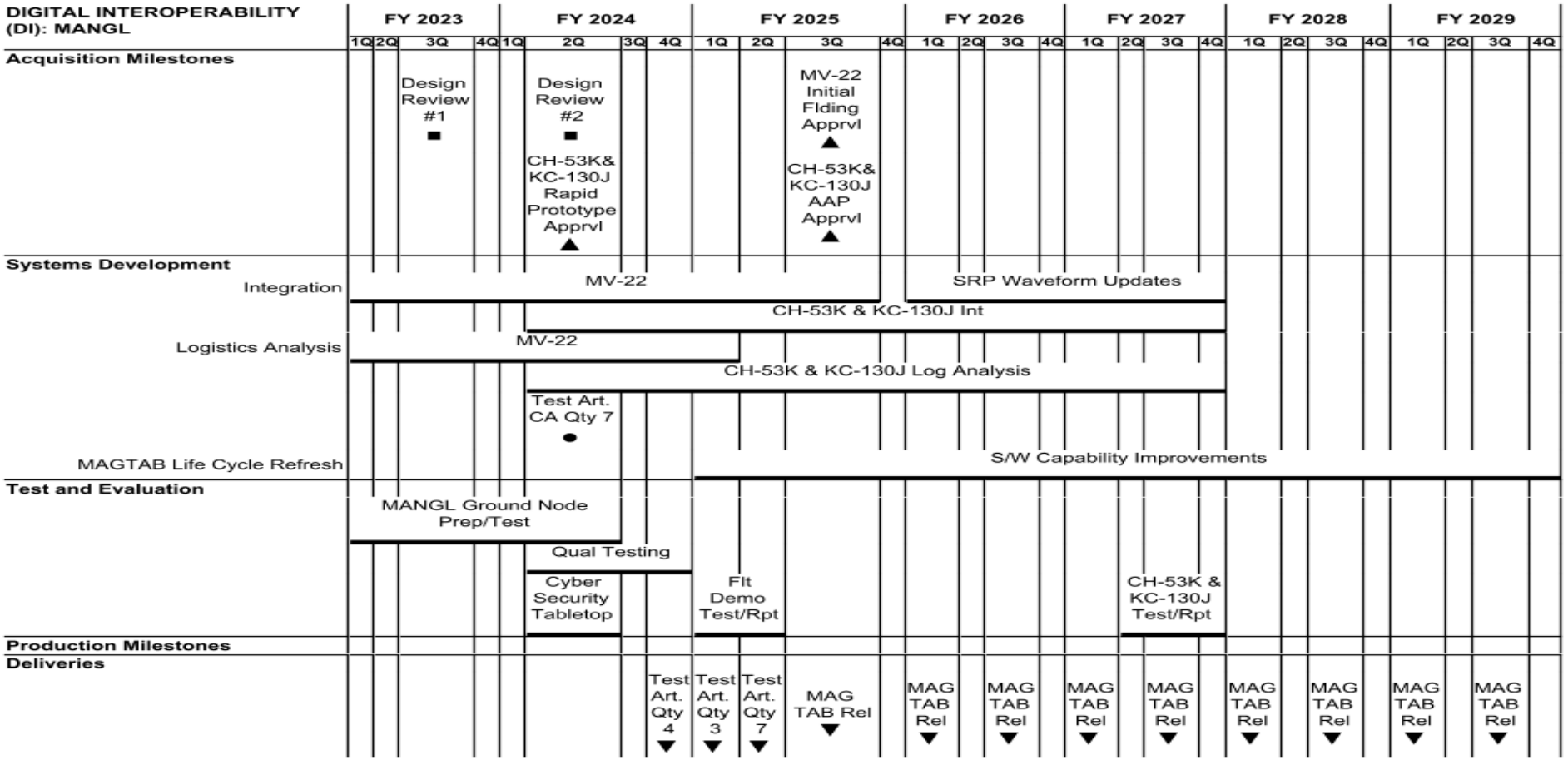
2025PB - 0605217N - 0572

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 0605217N / *Common Avionics*	**Project (Number/Name)** 0572 / *JT Service/NV Std Avionics CP/SB*



2025PB - 0605217N - 0572

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 0605217N / *Common Avionics*	**Project (Number/Name)** 0572 / *JT Service/NV Std Avionics CP/SB*



2025PB - 0605217N - 0572

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 0605217N / *Common Avionics*	**Project (Number/Name)** 0572 / *JT Service/NV Std Avionics CP/SB*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
COMMUNICATIONS, NAVIGATION, SURVEILLANCE/AIR TRAFFIC MGMT (CNS/ ATM)				
Systems Development: Evaluate CNS/ATM technologies and develop solutions to support platform integrations	1	2023	4	2025
TACTICAL COMMUNICATIONS (TACCOM)				
Systems Development: Gen5A TSV 4.x, Crypto Modernization, SINCGARS, SATURN	1	2023	1	2026
Systems Development: Gen6 TSV 4.x, Crypto Modernization, SINCGARS, ACC, SATURN 4, MUOS 3.2	1	2023	1	2025
Systems Development: VMF/ Data Link Mil Standard Evolution	1	2024	4	2026
Systems Development: Gen6 Crypto Mod, TSV 5.x, ACC 2.x, SATURN ed. 5, MUOS 4.x	1	2024	4	2027
Systems Development: Gen5 Crypto Mod, TSV 5.x, SINCGARS 3.2	3	2026	4	2028
Systems Development: Gen6 Crypto Mod 2	1	2025	4	2029
Test and Evaluation: Gen5 NSA Cert 5	4	2023	4	2023
Test and Evaluation: Gen5 JITC Cert 6	2	2024	2	2024
Test and Evaluation: Gen6 NSA Cert 6	4	2024	4	2024
Test and Evaluation: Gen6 JITC Cert 7	2	2025	2	2025
Test and Evaluation: Gen5 NSA Cert 7	1	2026	1	2026
Test and Evaluation: Gen5 JITC Cert 8	3	2026	3	2026
Test and Evaluation: Gen6 NSA Cert 8	3	2027	3	2027
Test and Evaluation: Gen6 JITC Cert 8	4	2027	4	2027
Test and Evaluation: Gen5 NSA Cert 9	2	2028	2	2028
Test and Evaluation: Gen5 JITC Cert 9	4	2028	4	2028
Test and Evaluation: Gen6 NSA Cert 9	3	2029	3	2029

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 0605217N / *Common Avionics*	**Project (Number/Name)** 0572 / *JT Service/NV Std Avionics CP/SB*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Test and Evaluation: Gen6 JITC Cert 9	4	2029	4	2029
Production Milestones: Gen5 TRANSEC ECP Approval	1	2024	1	2024
Production Milestones: Gen6 S/W ECP Approval	4	2027	4	2027
Deliveries: Gen5 Ver 008 Release	3	2024	3	2024
Deliveries: Gen6 Ver 005 Release	3	2025	3	2025
Deliveries: Gen5 Ver 009 Release	3	2026	3	2026
Deliveries: Gen6 Ver 006 Release	4	2027	4	2027
Deliveries: Gen6 Ver 007 Release	4	2029	4	2029
GROUND PROXIMITY WARNING SYSTEM/TERRAIN AWARENESS WARNING SYSTEM (GPWS/TAWS)				
Acquisition Milestones: Milestones: H-1 Integration Contract	1	2023	1	2023
Acquisition Milestones: Milestones: V-22 Integration Contract	3	2027	3	2027
Acquisition Milestones: Milestones: H-60 MS C	3	2024	3	2024
Acquisition Milestones: Milestones: H-60 Fleet Release	4	2024	4	2024
Acquisition Milestones: Milestones: H-1 Fleet Release	2	2027	2	2027
Systems Development: H-1 TAWS II Requirements Development	1	2023	3	2023
Systems Development: V-22 TAWS II Software Development FB1	4	2026	1	2028
Systems Development: TAWS II FACE Requirements Development	4	2028	4	2029
Systems Development: H-1 TAWS II Software Development FB1	1	2023	1	2024
Systems Development: H-1 TAWS II Software Development FB2	1	2025	3	2025
Systems Development: V-22 TAWS II Requirements Development Restart	2	2026	1	2027
Systems Development: V-22 TAWS II Software Development FB2	4	2029	4	2029
Test and Evaluation: Developmental Testing: Lockheed Martin SC 2.X Integration Testing FB4	1	2023	2	2023
Test and Evaluation: Developmental Testing: H-1 TAWS II DT 1	1	2025	1	2025
Test and Evaluation: Developmental Testing: H-1 TAWS II DT 2	4	2025	4	2025

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 0605217N / *Common Avionics*	**Project (Number/Name)** 0572 / *JT Service/NV Std Avionics CP/SB*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Test and Evaluation: Developmental Testing: Northrop Grumman H-1 OFP Compiler Integration/Test	4	2023	4	2024
Test and Evaluation: Developmental Testing: Raytheon/Boeing Integration Testing FB1	2	2028	1	2029
Test and Evaluation: Developmental Testing: H-60 TAWS II DT 4	2	2023	4	2023
Test and Evaluation: Developmental Testing: Northrop Grumman/Bell Helicopter Textron Integration Testing FB1	2	2024	4	2024
Test and Evaluation: Developmental Testing: Northrop Grumman/Bell Helicopter Textron Integration Testing FB2	3	2025	3	2025
Test and Evaluation: Developmental Testing: V-22 TAWS II DT 1	2	2029	4	2029
Production Milestones: H-60 Integrated Logistics Assessment	1	2023	1	2023
Production Milestones: H-1 Integrated Logistics Assessment	4	2024	2	2025
Production Milestones: V-22 Integrated Logistics Assessment	4	2029	4	2029
Deliveries: H-60 TAWS II FB4 Delivery	1	2023	1	2023
Deliveries: H-1 TAWS II FB1 Delivery	2	2024	2	2024
Deliveries: H-1 TAWS II FB2 Delivery	3	2025	3	2025
Deliveries: V-22 TAWS II FB 1 Delivery	2	2028	2	2028
AVIONICS COMPONENT IMPROVEMENT PROGRAM (AvCIP)				
Acquisition Milestones: Funding Allocation: Funding Allocation2	1	2025	1	2025
Acquisition Milestones: Funding Allocation: Funding Allocation3	1	2026	1	2026
Acquisition Milestones: Funding Allocation: Funding Allocation4	1	2027	1	2027
Acquisition Milestones: Funding Allocation: Funding Allocation5	1	2028	1	2028
Acquisition Milestones: Funding Allocation: Funding Allocation6	1	2029	1	2029
Acquisition Milestones: Funding Allocation: Funding Allocation7	1	2023	1	2023
Acquisition Milestones: Funding Allocation: Funding Allocation1	1	2024	1	2024
Acquisition Milestones: Proposal Collection: Proposal Collection1	1	2024	2	2024
Acquisition Milestones: Proposal Collection: Proposal Collection2	1	2025	2	2025
Acquisition Milestones: Proposal Collection: Proposal Collection3	1	2026	2	2026

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 0605217N / *Common Avionics*	**Project (Number/Name)** 0572 / *JT Service/NV Std Avionics CP/SB*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Acquisition Milestones: Proposal Collection: Proposal Collection4	1	2027	2	2027
Acquisition Milestones: Proposal Collection: Proposal Collection5	1	2028	2	2028
Acquisition Milestones: Proposal Collection: Proposal Collection6	1	2029	2	2029
Acquisition Milestones: Proposal Collection: Proposal Collection7	1	2023	2	2023
Acquisition Milestones: Proposal Evaluation: Proposal Evaluation2	2	2025	2	2025
Acquisition Milestones: Proposal Evaluation: Proposal Evaluation3	2	2026	2	2026
Acquisition Milestones: Proposal Evaluation: Proposal Evaluation4	2	2027	2	2027
Acquisition Milestones: Proposal Evaluation: Proposal Evaluation5	2	2028	2	2028
Acquisition Milestones: Proposal Evaluation: Proposal Evaluation6	2	2029	2	2029
Acquisition Milestones: Proposal Evaluation: Proposal Evaluation7	2	2023	2	2023
Acquisition Milestones: Proposal Evaluation: Proposal Evaluation1	2	2024	2	2024
Acquisition Milestones: Proposal Prioritization and Selection: Proposal Prioritization and Selection2	3	2025	3	2025
Acquisition Milestones: Proposal Prioritization and Selection: Proposal Prioritization and Selection3	3	2026	3	2026
Acquisition Milestones: Proposal Prioritization and Selection: Proposal Prioritization and Selection4	3	2027	3	2027
Acquisition Milestones: Proposal Prioritization and Selection: Proposal Prioritization and Selection5	3	2028	3	2028
Acquisition Milestones: Proposal Prioritization and Selection: Proposal Prioritization and Selection6	3	2029	3	2029
Acquisition Milestones: Proposal Prioritization and Selection: Proposal Prioritization and Selection7	3	2023	3	2023
Acquisition Milestones: Proposal Prioritization and Selection: Proposal Prioritization and Selection1	3	2024	3	2024
Acquisition Milestones: Contract Establishment & Execution Plan: Contract Establishment & Execution Plan2	3	2025	4	2025

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 0605217N / *Common Avionics*	**Project (Number/Name)** 0572 / *JT Service/NV Std Avionics CP/SB*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Acquisition Milestones: Contract Establishment & Execution Plan: Contract Establishment & Execution Plan3	3	2026	4	2026
Acquisition Milestones: Contract Establishment & Execution Plan: Contract Establishment & Execution Plan4	3	2027	4	2027
Acquisition Milestones: Contract Establishment & Execution Plan: Conract Establishment & Execution Plan5	3	2028	4	2028
Acquisition Milestones: Contract Establishment & Execution Plan: Conract Establishment & Execution Plan6	3	2029	4	2029
Acquisition Milestones: Contract Establishment & Execution Plan: Conract Establishment & Execution Plan7	3	2023	4	2023
Acquisition Milestones: Contract Establishment & Execution Plan: Conract Establishment & Execution Plan1	3	2024	4	2024
DIGITAL INTEROPERABILITY (DI): MANGL				
Acquisition Milestones: MV-22 Initial Fielding Approval	3	2025	3	2025
Acquisition Milestones: Design Review #1	3	2023	3	2023
Acquisition Milestones: Design Review #2	2	2024	2	2024
Acquisition Milestones: CH-53K & KC-130J Rapid Prototype Approval	2	2024	2	2024
Acquisition Milestones: CH-53K & KC-130J AAP Approval	3	2025	3	2025
Systems Development: Integration: MV-22	1	2023	3	2025
Systems Development: Integration: SRP Waveform Updates	1	2026	4	2027
Systems Development: Integration: CH-53K & KC-130J Integration	2	2024	4	2027
Systems Development: Logistics Analysis: MV-22	1	2023	1	2025
Systems Development: Logistics Analysis: CH-53K & KC-130J Logistics Analysis	2	2024	4	2027
Systems Development: Logistics Analysis: Test Articles CA Qty 7	2	2024	2	2024
Systems Development: MAGTAB Life Cycle Refresh: Software Capability Improvements	1	2025	4	2029
Test and Evaluation: MANGL Ground Node Prep/Test	1	2023	2	2024
Test and Evaluation: Qualification Testing	2	2024	4	2024

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 0605217N / *Common Avionics*	**Project (Number/Name)** 0572 / *JT Service/NV Std Avionics CP/SB*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Test and Evaluation: Cyber Security Tabletop	2	2024	2	2024
Test and Evaluation: Flight Demonstration Test/Report	1	2025	2	2025
Test and Evaluation: CH-53K & KC-130J Test /Report	2	2027	4	2027
Deliveries: Test Articles Qty 4	4	2024	4	2024
Deliveries: Test Articles Qty 3	1	2025	1	2025
Deliveries: Test Articles Qty 7	2	2025	2	2025
Deliveries: MAGTAB S/W Release 1	3	2025	3	2025
Deliveries: MAGTAB S/W Release 2	1	2026	1	2026
Deliveries: MAGTAB S/W Release 3	3	2026	3	2026
Deliveries: MAGTAB S/W Release 4	1	2027	1	2027
Deliveries: MAGTAB S/W Release 5	3	2027	3	2027
Deliveries: MAGTAB S/W Release 6	1	2028	1	2028
Deliveries: MAGTAB S/W Release 7	3	2028	3	2028
Deliveries: MAGTAB S/W Release 8	1	2029	1	2029
Deliveries: MAGTAB S/W Release 9	3	2029	3	2029