Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Navy											Date: March 2014	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0604215N *I Standards Development*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	957.126	67.800	68.497	53.712	-	53.712	59.023	66.075	64.922	62.468	Continuing	Continuing
0572: *JT Service/NV Std Avionics CP/SB*	795.651	55.935	53.842	42.266	-	42.266	44.551	51.210	50.814	48.069	Continuing	Continuing
1857: *Calibration Standards*	9.036	1.698	1.835	1.582	-	1.582	1.661	1.701	1.725	1.764	Continuing	Continuing
2311: *Stores Planning and Weaponeering Module*	137.852	9.346	12.256	9.305	-	9.305	12.231	12.492	11.700	11.939	Continuing	Continuing
2312: *Common Helicopters*	14.587	0.821	0.564	0.559	-	0.559	0.580	0.672	0.683	0.696	Continuing	Continuing

The FY 2015 OCO Request will be submitted at a later date.

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. This project also provides a Navy-wide program to develop required calibration standards (hardware) in all major measurement technology areas in support of Navy Hull, Mechanical and Electrical (HM&E) systems as well as Navy Weapons systems, ground and air, throughout the Fleet. It funds Navy lead-service responsibilities in the Department of Defense and Joint Services Metrology Research and Development program. This project supports the military requirement to verify the performance of all test systems used to validate the operation of HM&E as well as Navy Weapon Systems with calibration standards traceable to the National Institute of Standards and Technology.

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.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Navy					Date: March 2014
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*			R-1 Program Element (Number/Name) PE 0604215N *I Standards Development*		
B. Program Change Summary ($ in Millions)	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO**	**FY 2015 Total**
Previous President's Budget	84.988	99.891	69.670	-	69.670
Current President's Budget	67.800	68.497	53.712	-	53.712
Total Adjustments	-17.188	-31.394	-15.958	-	-15.958
• Congressional General Reductions	-	-0.033			
• Congressional Directed Reductions	-	-31.361			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.109	-			
• Program Adjustments	-	-	-11.299	-	-11.299
• Rate/Misc Adjustments	-	-	-4.659	-	-4.659
• Congressional General Reductions Adjustments	-5.079	-	-	-	-
• Congressional Directed Reductions Adjustments	-10.000	-	-	-	-

Change Summary Explanation

Technical: Not applicable.

Schedule:

0572:
Communication Navigation Surveillance/Air Traffic Management - Develop Mode S Diversity requirements for developmental platforms ended 4Q/13. Evaluation of Automatic Dependent Surveillance-Broadcast (ADS-B (Out)) technologies/develop solutions to support platform integrations delayed after 1Q/14 due to FY14 Congressional Reductions. Will resume 1Q/16 to incorporate ISSUE# 51203 efforts to evaluate updates to Federal Avaiation Administration ADS-B (Out) mandate. CH-53K and E-2D ADS-B (Out) test and evaluation efforts added 1Q/16 to 4Q/18.

Tactical Communications - Crypto Algorithm Assess/Dev line extended through 4Q/14 to address National Security Agency (NSA) specification change and addition of Tactical Secure Voice 2. Added a new line for 1Q/17 to 2Q/19 labeled "Crypto Engine Design". This addresses a solution change to develop/embed a Fixed Point Gate Array based crypto engine in the Gen5 radio meeting NSA requirements. Under the software (S/W) release milestones, removed the release numbers. The numbers previously reflected the base radio release last digit of the part number. The numbers are not appropriate since they are changed when a nomenclature change occurs. It is best to just indicate the release event and eliminate the confusion if the number was included. Joint Interoperability Test

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Navy	Date: March 2014
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Command and NSA certifications were added/adjusted to reflect test and evaluation events. Production Milestone S/W release events were adjusted to reflect a refined schedule.

Ground Proximity Warning System/Terrain Awareness Warning System (GPWS/TAWS) - Milestone B schedule delayed 3Q/13 to 3Q/14 due to Platform Integration contract award date (they are combining TAWS II platform integration with Communication Navigation Surveillance/Air Traffic Management software development efforts (Required Navigation Performance Area Navigation and Automatic Dependent Surveillance-Broadcast (Out)) and to align with the completion of technical evaluation for combined Lockheed Martin Services, Inc. integration contract. H-1 GPWS S/W Development extended to 4Q/13 due to need for second deficiency correction build for GPWS S/W. H-1 GPWS Development Test extended to 1Q/15 due to need to test the second deficiency correction build for GPWS S/W and meet H-1 Software Configuration Set 7.0 platform Operational Flight Plan delays. H-60 Terrain Awareness Warning System II (TAWS II) software development extended to 4Q/15 to align with platform System Configuration 17 schedule milestones. H-60 TAWS II Development Test adjusted to align with platform System Configuration 17 schedule milestones was 3Q/15 to 3Q/16 now 2Q/16 to 2Q/17.

Military Flight Operations Quality Assurance - Phase 2 Fielding Decision moved from 2Q/16 to 4Q/15 and Phase 2 squadron deliveries of MH-60R/S, CH-53E and AH-1Z/UH-1Y moved from 3Q/16 to 4Q/15 due to lessons learned during Phase 1 testing resulting in a shift of Phase 2 test and evaluation efforts.

Collaborative Warfare - Changed Title of Flex 13 to TRIDENT WARRIOR 13 in FY13. Changed title Next Gate 1 Resource Requirement Review Board (R3B) to Tactical Networking Requirements R3B and adjusted 4Q/13 to 2Q/14 due to re-scope of effort to include broader requirements solicited from analysis such as the Joint Tactical Networking Concept of Employment and fleet needs such as Integrated Priority Lists and Urgent Operational Needs. Added TRIDENT WARRIOR 15 to schedule to demonstrate the military utility of a netted sensors Family of Systems as an evolution of TRIDENT WARRIOR 13. It will use Common Operating Environments to run collaborative multi-intelligence correlation software across platforms and domains to enhance targeting capabilities. Added Naval Aviation Tactical Networking Requirements in order to align with requirements strategy.

Mid Air Collision Avoidance Capability - FY14 Congressional Reduction resulted in the following schedule changes: Analysis of Alternatives complete in 1Q/15, Materiel Development Decision/Acquisition Strategy Review from 3Q/14 to 2Q/15, Capability Development Document complete from 1Q/14 to 1Q/16, removal of Pre-Engineering, Manufacturing and Development phase, Milestone B from 3Q/14 to 2Q/16, Milestone C from 1Q/18 to 1Q/19, Specification Review Board, System Readiness Review, and System Functional Review from 2Q/14 to 2Q/15, Preliminary Design Review from 4Q/14 to 3Q/15, Critical Design Review from 1Q/15 to 2Q/16, Software Design and Development from 4Q/14 to 3Q/15, Platform Integration and Test Support from 1Q/15 to 3Q/15, MH-60R/S integration from 1Q/15 to 1Q/16, UH-1Y/AH-1Z integration from 4Q/15 to 3Q/16, added F/A-18 integration in 3Q/18, MH-60R/S test and evaluation from 1Q/16 to 1Q/17, UH-1Y/ AH-1Z test and evaluation from 1Q/17 to 1Q/18, and added F/A-18 in 3Q/19.

2311: Acquisition Milestone Changes:

Due to funding reductions in FY13, the Weaponeering and Stores Planning (WASP) product development, testing, and Initial Operational Capability (IOC) schedules for V3.2, and all versions thereafter, have been delayed.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Navy	Date: March 2014
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V3.2 Milestones were adjusted accordingly: Software Requirements Review (SRR) from 4QFY13 to 2QFY14, Preliminary Design Review (PDR) from 1QFY14 to 3QFY14, Critical Design Review (CDR) from 1QFY14 to 3QFY14, Test Readiness Review (TRR) from 3QFY14 to 1QFY15, Technical Information Review Board (TIRB) from 1QFY15 to 2QFY15, Functional Qualification Test (FQT) from 1QFY15 to 2QFY15, Test & Evaluation (T&E) from 3QFY14 to 1QFY15, and Initial Operational Capability (IOC) from 3QFY15 to to 1QFY16.

V3.3 Milestones were adjusted accordingly: SRR from 1QFY15 to 3QFY15, PDR from 2QFY15 to 4QFY15, CDR from 2QFY15 to 4QFY15, TRR from 4QFY15 to 2QFY16, TIRB from 2QFY16 to 4QFY16, FQT from 2QFY16 to 4QFY16, T&E from 4QFY15 to 2QFY16, and IOC from 3QFY16 to 2QFY17.

V4.0 Milestones were adjusted accordingly: SRR from 2QFY16 to 1QFY17, PDR from 3QFY16 to 2QFY17, CDR from 3QFY16 to 2QFY17, TRR from 1QFY17 to 3QFY17, TIRB from 3QFY17 to 1QFY18, FQT from 3QFY17 to 1QFY18, T&E from 1QFY17 to 3QFY17, and IOC from 4QFY17 to 3QFY18.

V4.1 Milestones were adjusted accordingly: SRR from 3QFY17 to 2QFY18, PDR from 4QFY17 to 3QFY18, CDR from 4QFY17 to 3QFY18, TRR from 2QFY18 to 1QFY19, TIRB from 4QFY18 to 3QFY19, FQT from 4QFY18 to 3QFY19, T&E from 2QFY18 to 1QFY19, and IOC from 1QFY19 to 1QFY20.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy			Date: March 2014
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604215N / *Standards Development*	Project (Number/Name) 0572 / *JT Service/NV Std Avionics CP/SB*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
0572: *JT Service/NV Std Avionics CP/SB*	795.651	55.935	53.842	42.266	-	42.266	44.551	51.210	50.814	48.069	Continuing	Continuing
Quantity of RDT&E Articles	0.000	-	21.000	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

Note

FY14 Advanced Digital Data Set (ADDS) RDT&E Articles (21) for F/A-18.

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), Military Flight Operations Quality Assurance (MFOQA), Collaborative Warfare (CW), Avionics Component Improvement Program (AvCIP), Advanced Digital Data Set (ADDS), Mid Air Collision Avoidance Capability (MCAC), and Future Airborne Capability Environment (FACE). 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 2013	FY 2014	FY 2015
Title: Joint Service Review Committee for Avionics Standardization (JSRC-AS)	2.172	1.000	1.000
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. The JSRC-AS reports to the O-7 level tri-service Aviation Common Systems Board who reports to the O-9 level Joint Aeronautical Commanders Group.			
FY 2013 Accomplishments: Provided leadership and strategic vision as Naval Aviation's representatives to the JSRC-AS. Participated in joint working groups and promote efforts that makes good technical and economic sense to more than one service.			
FY 2014 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604215N / *Standards Development*	**Project (Number/Name)** 0572 / *JT Service/NV Std Avionics CP/SB*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Provide leadership and strategic vision as Naval Aviation's represenatives to the Joint Service Review Committee for Avionics Standardization (JSRC-AS). Participate in joint working groups and promote efforts that make good technical and economic sense to more than one service. ***FY 2015 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.			
Title: Communication Navigation Surveillance/Air Traffic Management (CNS/ATM) ***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 S, 8.33 kHz, Reduced Vertical Separation Minimums (RVSM), Required Navigation Performance Area Navigation (RNP/RNAV), and Automatic Dependent Surveillance-Broadcast (ADS-B (Out)) 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 such as E-2D, P-8A, Joint Strike Fighter, CH-53K, and Unmanned Air Systems. Capabilities include Mode S, 8.33 kHz, RVSM, RNP/RNAV, ADS-B (Out), and other civil and military capabilities. ***FY 2013 Accomplishments:*** Developed Mode S diversity requirements and develop solutions for developmental platforms. Evaluated ADS-B (Out) technologies and develop solutions to support platform integrations. Assisted with insertion of CNS/ATM technologies on and certification of developmental platforms. ***FY 2014 Plans:*** Research Mode S diversity requirements and design solutions for developmental platforms. Evaluate ADS-B (Out) technologies and develop solutions to support platform integrations. Assist with insertion of CNS/ATM technologies on and certification of developmental platforms. Develop CNS/ATM Common Components to support Required Navigation Performance Area Navigation developmental platform requirements. Where practical, new technologies will be designed to maximize reuse on future platforms through open architectures including the Future Airborne Capability Environment (FACE). ***FY 2015 Plans:*** Assist with insertion and integration of Communication Navigation Surveillance/Air Traffic Management (CNS/ATM) technologies and certification of developmental platforms. Develop CNS/ATM Common Components to support Required Navigation Performance Area Navigation developmental platform requirements.	10.977 -	3.928 -	0.503 -
Title: Tactical Communications (TACCOM)	3.292	1.634	3.548

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
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, Variable Message Format (VMF), Beyond Line-of-Sight, Satellite Communication (SATCOM), High Frequency, civil interoperability, and Joint Precision Approach Landing System data link into the ARC-210 system. Support for networking requirements development and prototyping, Integrated Waveform (IW), Intelligence Broadcast System, Tactical Networks, Datalinks, and Link 16.			
FY 2013 Accomplishments: Continued SATCOM and Variable Message Format (VMF) P3I Software (S/W) development. Continued IW and continued release of S/W version 4.			
FY 2014 Plans: Continue Tactical Secure Voice, SATCOM and Variable Message Format (VMF) P3I S/W development. Complete IW and complete release of S/W version 4.			
FY 2015 Plans: Begin development of the RT-1939A and RT-1990A. Begin development of Digital Interoperability capability. Continue development of Air to Ground Interoperability, IW and Variable Message Format/Combat Net Radio.			
Title: Ground Proximity Warning System/Terrain Awareness Warning System (GPWS/TAWS)	4.757	13.280	11.007
Articles:	-	-	-
Description: This program will conduct research, studies, development, integration, demonstration, test and evaluation efforts to meet naval aviation GPWS/TAWS requirements. Perform GPWS/TAWS platform integration studies and activities to determine technical and cost effective solutions across naval aviation. Develop GPWS/TAWS algorithm tailored to platform performance and missions. Develop simulation models for use at Manned Flight Simulator (MFS) as required for platform tailoring, including procurement of test article hardware for MFS. Evaluate aircraft simulation models for suitability in GPWS/TAWS development effort. Develop GPWS/TAWS algorithms utilizing MFS 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 algorithm in host platforms.			
FY 2013 Accomplishments:			

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Completed H-1 GPWS software development for Software Configuration Set (SCS) 7.0. Conducted H-1 GPWS Developmental Testing (DT) in platform SCS 7.0. Continued TAWS with obstacles acquisition documentation. Completed TAWS with obstacles requirements definition and initiated TAWS with obstacles software development for H-60. ***FY 2014 Plans:*** Completed DT of H-1 GPWS in platform SCS 7.0. Achieve MS-B for H-60 TAWS with obstacles. Continue TAWS with obstacles software development for H-60. ***FY 2015 Plans:*** Complete TAWS II with obstacles software development and platform integration for H-60. Complete DT of H-1 GPWS.			
Title: Military Flight Operations Quality Assurance (MFOQA) ***Articles:*** ***Description:*** This program will develop a MFOQA baseline software integration framework using Government procured software modules to perform functions such as flight data analysis, post mission aircrew debrief, aircraft maintenance and system troubleshooting and mishap investigation to meet naval aviation requirements. Additional efforts will include software development and integration for fleet wide shore based and shipboard MFOQA implementation. Develop and evaluate aircraft recorder systems and requirements to meet current and future MFOQA requirements. Prepare and conduct MFOQA acquisition events such as Systems Readiness Review, Preliminary Design Review, Critical Design Review, Developmental Testing, Milestone C (MS C) and follow-on Decision Reviews in support of initial Fixed Wing (Phase 1) and Rotary Wing (Phase 2) platforms. ***FY 2013 Accomplishments:*** Completed Phase 1 Systems Integration; Completed Phase 1 Integrated Test and Initiated Phase 2 Requirements Definition. ***FY 2014 Plans:*** Complete Phase 1 VX-23 Developmental Test; Achieve MS C and initiate fielding to F/A-18C-F and EA-18G. Initiate Agile software development for Phase 2 (MH-60R/S, M/CH-53, AH-1Z, and UH-1Y). ***FY 2015 Plans:*** Complete Phase 2 Agile software development, software integration and test. Complete deployment decision review and initiate deployment to rotary wing squadrons.	13.934 -	17.852 -	9.203 -
Title: Collaborative Warfare (CW) ***Articles:*** ***Description:*** The CW component is a Research & Development effort to identify targeting gaps and determine the warfighting benefit of integrating networked capabilities into naval aircraft to fill those gaps. The CW component also addresses targeting gaps for naval aircraft to operate more effectively with other military services. The following efforts are included: 1) A comprehensive naval aviation Tactical Networking Requirements Strategy that maps fleet gaps and requirements to cross-	0.500 -	0.148 -	0.175 -

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
platform naval aviation solutions. The Naval Effects Cross Domain Targeting Capabilities Based Assessment concept refinement Joint Capability Integration Development System activity will be integrated into this effort. 2) Netted sensors proof of concept prototype demonstrations leveraging the Navy's Fleet Experimentation campaign. 3) Support of integration of Netted Sensors/ Sensor Fusion into naval aviation Integrated Capabilities Packages supporting multi-mission capability enhancements to include input to the N81 Offensive Anti-Surface Warfare Targeting and Weapons Control study that ensures naval aviation Intelligence, Surveillance and Reconnaissance delivers a complete kill chain. 4) Provide resource sponsor oversight on an Office of Naval Research Future Naval Capability Enabling Capability for an Advanced Tactical Data Link (ATDL) for naval aviation. 5) Continue work on the Joint Tactical Networking Concept of Employment (JTN CONEMP) that aligns Navy ATDL and Joint Aerial Layer Network - Maritime with USAF future strategies. ***FY 2013 Accomplishments:*** Completed first increment of JTN CONEMP analysis to identify Navy and Air Force interoperability gaps for the Counter Air and Offensive Anti-Surface Warfare (OASuW) mission areas. This analysis directly informed Navy and Air Force Service. Chief Decisions in the 2014 Air Force-Navy Warfighter Talks as well as contributed to other critical analytical efforts such as the joint Aerial layer network (JALN) Analysis of Alternatives (AoA), Offensive Anti-Surface Warfare (OASuW) AoA, and the NEXT CBA/ICD. Effort focused on Integrated Air and Missile Defense (IAMD) Counter Air. Used draft Naval Effects Cross-domain Targeting (NEXT) Capabilities Based Assessment (CBA), Initial Capabilities Document (ICD), and Analysis of Alternatives (AoA) scope/guidance to inform and OASuW Targeting and Weapons Control AoA to go to a Gate 1. NEXT still planned to go to Gate 1 for ICD and AoA approval unless OASuW AoA supersedes. Executed the TRIDENT WARRIOR 13 netted sensors Family of Systems (FoS) experiment. This experiment demonstrated the military utility of a Tactical Targeting Network Technology (TTNT) and Network Centric Collaborative Targeting (NCCT)-enabled multi-INT correlation architecture and reduced technical risks associated with developing and fielding the relevant technologies. Initiated the comprehensive Naval Aviation Tactical Networking Strategy, which consists of 3 mission aligned working groups: IAMD, OASUW, and Electronic Warfare. This effort is intended to start defining tactical networking Integrated Capabilities Packages (ICPs) for OPNAV Resource Requirements Review Board (R3B) approval in POM. ***FY 2014 Plans:*** Complete the second iteration of the JTN CONEMP and brief results to the Air Force - Navy Warfighter Talks. Complete preparations for the TRIDENT WARRIOR 15 netted sensors FoS experiment. Support potential integration of Naval Aviation relevant tactical networking technologies in the TRIDENT WARRIOR 14 experiment. ***FY 2015 Plans:*** Execute TRIDENT WARRIOR 15 netted sensors evolution to decentralized multi-intelligence correlation architecture. Continue executing tactical networking strategy activities to define future Program Objective Memorandums and analytic agendas. Develop requirements, standards, and architectures in support of new and updated netted-sensors' Concept of Operations and capabilities.			
Title: Avionics Component Improvement Program (AvCIP)	1.665	2.500	4.972

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Articles:	-	-	-
Description: Investigate high value Return On Investment component improvement candidate projects in support of NAVAIR Commander's third focus area - Improve "capital A" Affordability. 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 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). Analysis shows that funding applied under this program between 2006 and 2011 will enable sustainment and procurement cost avoidances exceeding a five to one margin by 2020. ***FY 2013 Accomplishments:*** Addressed current fleet problem avionics systems (top readiness degraders, cost drivers, obsolescence-driven sustainability, capability loss, fleet head-hurters). ***FY 2014 Plans:*** Address current fleet problem avionics systems (top readiness degraders, cost drivers, obsolescence-driven sustainability, capability loss, fleet head-hurters). ***FY 2015 Plans:*** Address current fleet problem avionics systems (top readiness degraders, cost drivers, obsolescence-driven sustainability, capability loss, fleet head-hurters).			
Title: Advanced Digital Data Set (ADDS)	18.638	13.500	-
Articles:	-	21.000	-
Description: This program consists of enabling hardware and software solution for an advanced digital data military operating environment replacing the current data transfer systems. This system includes removable memory, secure data management and storage high speed data transfer of Mission and Map data, recording data (including mission, sensor, audio, and video), and maintenance diagnostics. This approach will include development, test, integration, and delivery of development hardware. ADDS will increase mission effectiveness by providing situational awareness, reduce crew workload, and enhanced capability for navigation, and mission planning.			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Data Transfer Unit (DTU) is a form/fit replacement for the existing Digital Memory Device (DMD); it will perform all the data loader/recorder functions that DMD provides. DTU will add data at rest protection via encryption for all data stored on removable memory; this includes National Security Agency (NSA) type 1 encryption for mission data and Federal Information Processing Standards 140 encryption for maintenance data. Data Transfer Unit will also provide enhanced download speed and increased storage capacity for mission and maintenance data. In order to support full time encryption, DTU will include a ground encryption device for use with the Joint Mission Planning System and software to be integrated into the Automated Maintenance Environment (AME). These enhancements will allow naval aircraft to support future weapons, systems, and tactics as well as comply with data at rest requirements. ***FY 2013 Accomplishments:*** Awarded developmental contract(s). Conducted Systems Requirements Review (SRR) and Preliminary Design Review (PDR). Initiated National Security Agency certification with the vendor to develop Type 1 Encryption. Begun JMPS, AME, and aircraft integration. ***FY 2014 Plans:*** Conduct Critical Design Review and Test Readiness Review. NSA will continue to support the vendor in developing and certifying the Type I encryption. Continue integration efforts and perform flight qualification testing, carrier suitability, and Electromagnetic Interference testing. ***FY 2015 Plans:*** N/A			
Title: Mid Air Collision Avoidance Capability (MCAC)	-	-	9.558
Articles:	-	-	-
Description: This program will conduct research, studies, and development, integration, demonstration, test and evaluation efforts to meet Naval Aviation MCAC requirements. Perform MCAC platform integration studies and activities to determine technical and cost effective solutions across Naval Aviation. Develop MCAC algorithm tailored to platform performance and missions. Develop simulation models for use at Manned Flight Simulator (MFS) as required for platform tailoring, including procurement of test article hardware for MFS. Evaluate aircraft simulation models for suitability in MCAC development effort. Develop MCAC algorithms utilizing MFS as real-time hardware and pilot in the loop tool. Develop and evaluate algorithm interfaces necessary for integration of the algorithm within platform host computers and/or Original Manufacture Equipment Military Transponders. ***FY 2013 Accomplishments:***			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604215N / *Standards Development*	**Project (Number/Name)** 0572 / *JT Service/NV Std Avionics CP/SB*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
N/A ***FY 2014 Plans:*** N/A ***FY 2015 Plans:*** Initiate and complete Analysis of Alternatives. Conduct Materiel Development Decision/Acquisition Strategy Review. Conduct Specification Review Board and System Readiness Review/System Functional Review. Begin engineering changes required in military transponder. Initiate engineering, manufacturing, and development efforts.			
Title: Future Airborne Capability Environment (FACE) ***Articles:*** ***Description:*** The Future Airborne Capability Environment (FACE) program provides avionics standards development for a common software operating environment to establish testable open architecture requirements in accordance with DoD Directive 5000.1, N6/N7 Naval Open Architecture Requirements Letter 9010, Ser N6N7/5U916276, and SECNAVINST 5000.2E. The FACE Technical Standard is developed through Navy, Army, Air Force, Industry and Academia collaboration via The Open Group FACE Consortium, in accordance with Public Law 104-113. The FACE program provides the Subject Matter Experts to define and architect a set of Open Architecture Standards, design guidance, development and integration tools, acquisition strategy, contracting guidance and cost estimations. The results will enable Department of Defense (DoD) weapons systems to reuse software, deliver warfighting capabilities that are scalable and portable, at a faster rate, ensuring interoperability while reducing significant redundant development costs and increasing competition. The FACE program will enable the government to own system integration as a Lead Systems Integrator and software data rights for reuse across the DoD. ***FY 2013 Accomplishments:*** N/A ***FY 2014 Plans:*** N/A ***FY 2015 Plans:*** Provide development support, systems engineering and program management for design and acquisition strategy implementation guidance. Investigate revisions to the FACE technical standard to meet emerging technologies and new platform requirements. Assist developmental platforms with strategies for and implementation of the FACE technical standard. Subject Matter Expert support for platform integration and competitive source selection.	- -	- -	2.300 -
Accomplishments/Planned Programs Subtotals	55.935	53.842	42.266

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
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C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• APN/05770: *Common Avionics*	92.461	119.873	157.531	-	157.531	250.014	228.967	203.906	182.360	394.918	3,859.490

Remarks

* AvCIP program was reduced by FY14 Congressional Mark of $2.5M

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 that are currently post-Milestone C. Systems will be procured utilizing existing contracts for integration on forward-fit and retrofit platforms to provide CNS/ ATM functionality. Tactical Communications is utilizing a firm fixed price contract to Rockwell Collins for research and development of the ARC-210 Gen 5 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 Software Modules will be developed by a Government Software Product Team in collaboration with Industry where required. Military Flight Operations Quality Assurance (MFOQA) Government activities include integrating a combination of existing aircraft hardware, ground support equipment, Commercial Off The Shelf (COTS), government off the shelf hardware and software products. MFOQA program interfaces will be created to share data captured by the automated maintenance systems (e.g., Automated Maintenance Environment, Health and Usage Monitoring Systems) and existing databases. The Navy conducted a full and open competition for the MFOQA software development, integration and support contract as well as the COTS software data analysis product. Follow-on Sole Source Product Contracts will be awarded to complete MFOQA development, as 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, NAVAIR, NAVICP, 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 ROI's 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). Advanced Digital Data Set will award a contract(s) to Industry for the development and procurement of enabling hardware and software in collaboration with platform program offices utilizing competitive methods wherever possible. Mid Air Collision Avoidance Capability (MCAC) is the capability umbrella which encompasses all systems designed and developed which aid in air-to-air collision avoidance. Systems include but are not limited to Traffic Collision Avoidance Systems and Mid Air Collision Avoidance Systems. Mid Air Collision Avoidance Capability Software Modules will be developed by a Government Software Product Team in collaboration with Industry where required. Future Airborne Capability Environment (FACE) will provide acquisition strategy guidance and support to platforms implementing the FACE Technical Standard to address open architecture requirements.

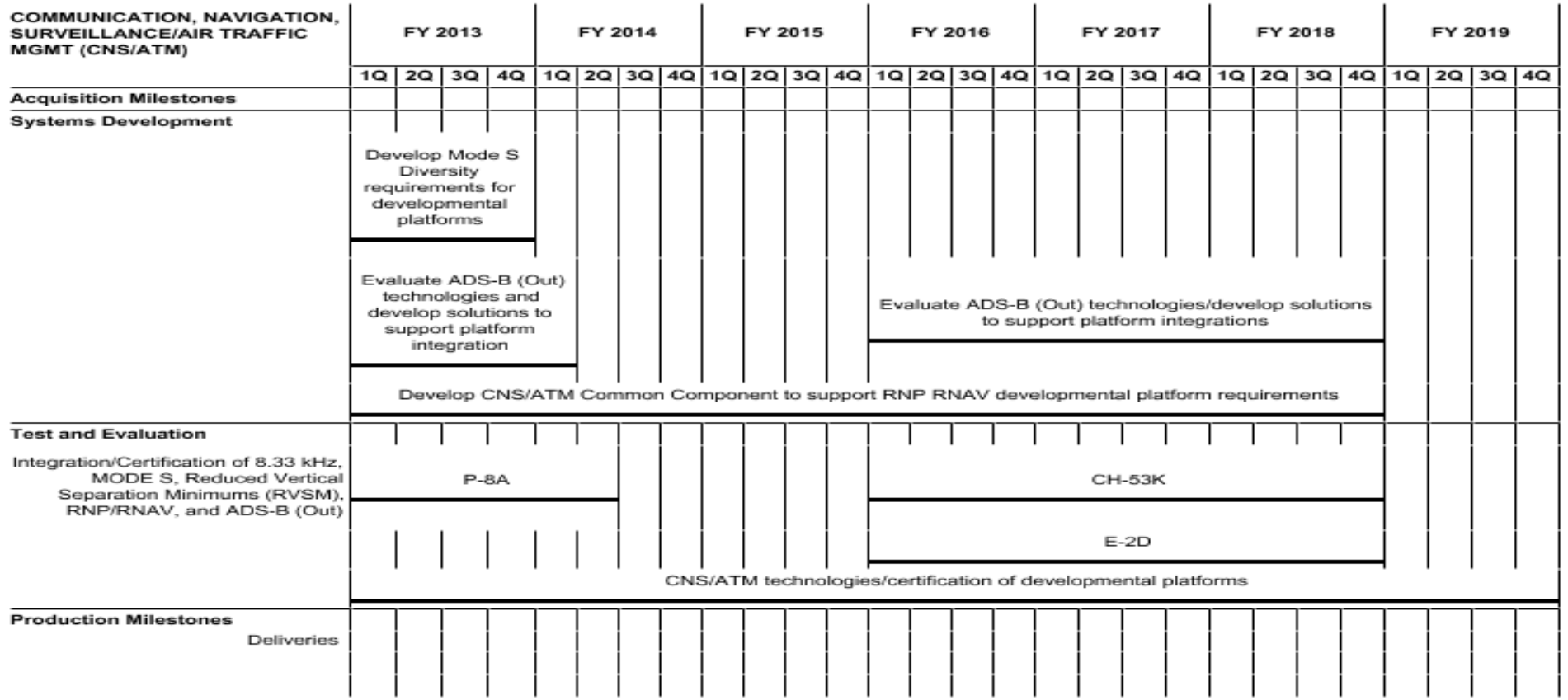
E. Performance Metrics

Joint Service Review Committee for Avionics (JSRC-AS) - Provide leadership in support of the Navy's interest to the JSRC tri-service committee promoting commonality and joint programs with focus on interoperability, communications, Communication Navigation Surveillance/Air Traffic Management (CNS/ATM), Joint Services avionics

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604215N / *Standards Development*	**Project (Number/Name)** 0572 / *JT Service/NV Std Avionics CP/SB*

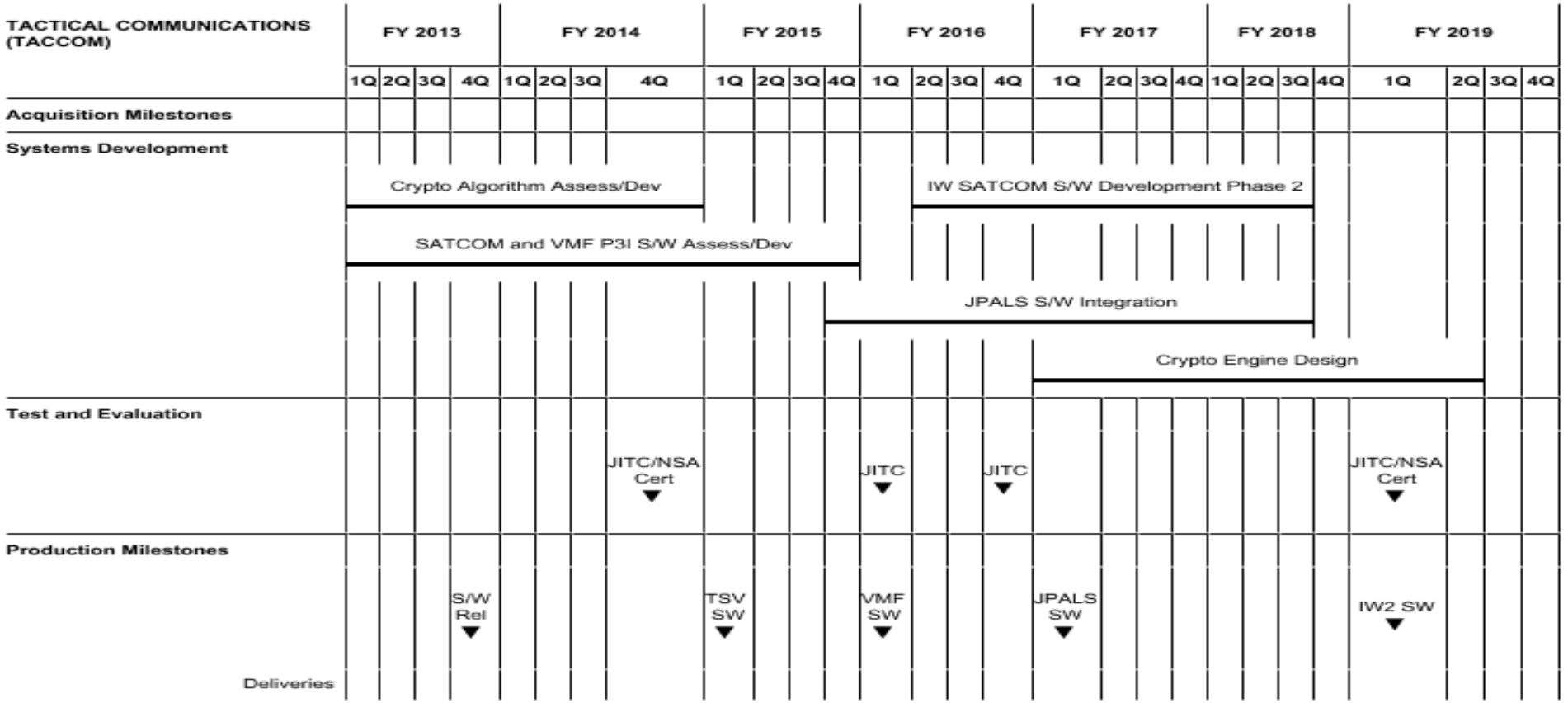
obsolescence management and the update of the Core Avionics Master Plan. Support and participate in Naval Aviation Requirements Group panels, Operational Advisory Group, and Human Factors Quality Management Board.
CNS/ATM - Successfully complete platform integration, test, and certifications.
Tactical Communications (TACCOM) - Achieve Joint Interoperability Test Command and National Security Agency certifications on system developmental efforts to meet operational requirements.
Ground Proximity Warning System/Terrain Awareness Warning System (GPWS/TAWS) - Develop algorithm and software to meet platform specific requirements, successfully complete flight test, and deliver product on schedule.
Military Flight Operations Quality Assurance (MFOQA) - Successfully complete Milestone C and Initial Operational Capability on schedule; successfully complete Phase 2 development and fleet introduction.
Collaborative Warfare (CW) - Identify collaborative warfighting capability gaps and ensure the development of the most intelligent, cost effective, and timely solutions to fill those gaps.
Avionics Component Improvement Program (AvCIP) - Successful project competition and selection, execution of allocated funds, fielding of solutions, and documentation of component performance enhancement and benefits.
Advanced Digital Data Set (ADDS) - Achieve program acquisition milestones on cost and schedule meeting platform requirements.
Mid Air Collision Avoidance Capability (MCAC) - Achieve program acquisition milestones on cost and schedule meeting platform requirements.
Future Airborne Capability Environment (FACE) - Provide leadership in support of the Navy's interest to the FACE Consortium. Participate in technical and business working groups within the FACE Consortium to foster solutions that promote interoperable and integrated warfighting capability for all services. Successfully prototype and demonstrate FACE conformant applications and FACE compatible operating environments.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Navy		Date: March 2014
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604215N / *Standards Development*	**Project (Number/Name)** 0572 / *JT Service/NV Std Avionics CP/SB*



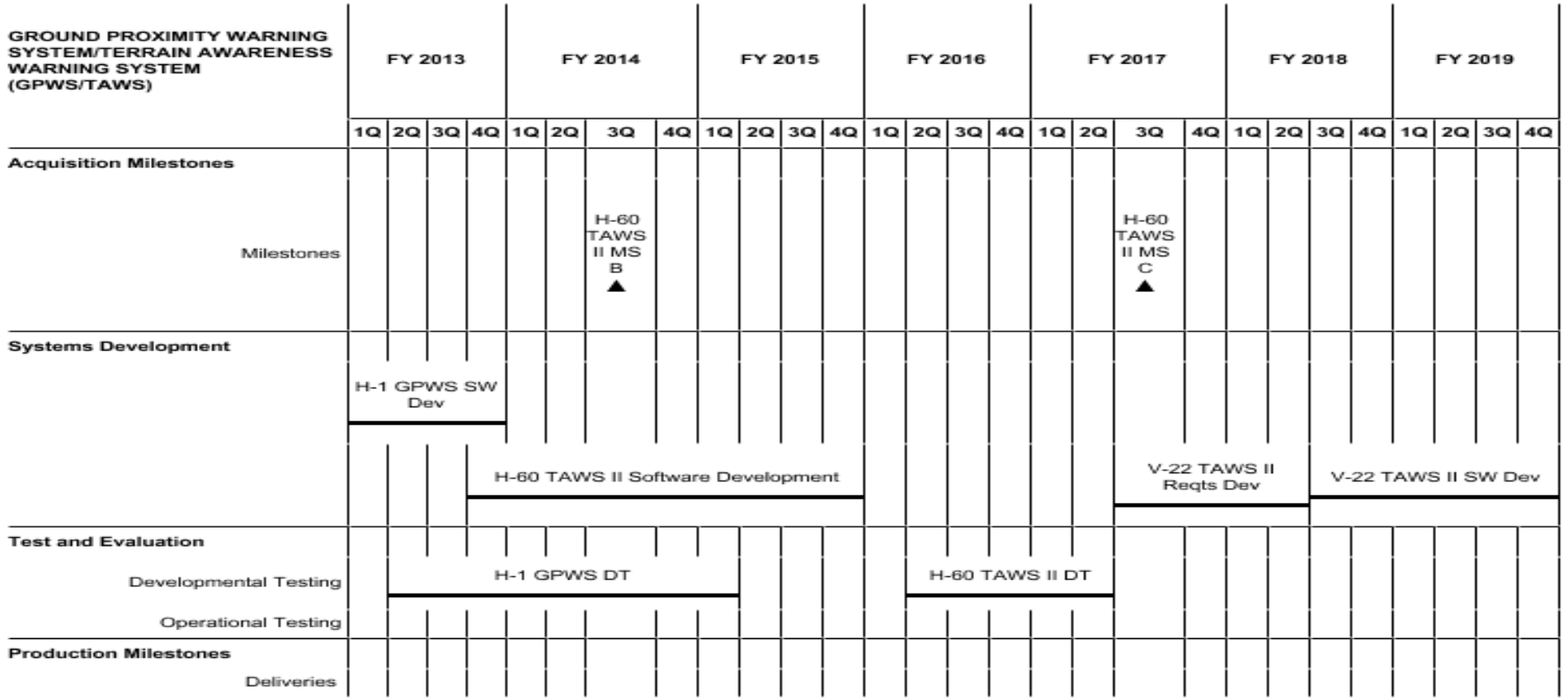
2015PB - 0604215N - 0572

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Navy		Date: March 2014
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604215N / *Standards Development*	**Project (Number/Name)** 0572 / *JT Service/NV Std Avionics CP/SB*



2015PB - 0604215N - 0572

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Navy		Date: March 2014
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604215N / *Standards Development*	**Project (Number/Name)** 0572 / *JT Service/NV Std Avionics CP/SB*



2015PB - 0604215N - 0572

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Navy		Date: March 2014
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604215N / *Standards Development*	**Project (Number/Name)** 0572 / *JT Service/NV Std Avionics CP/SB*

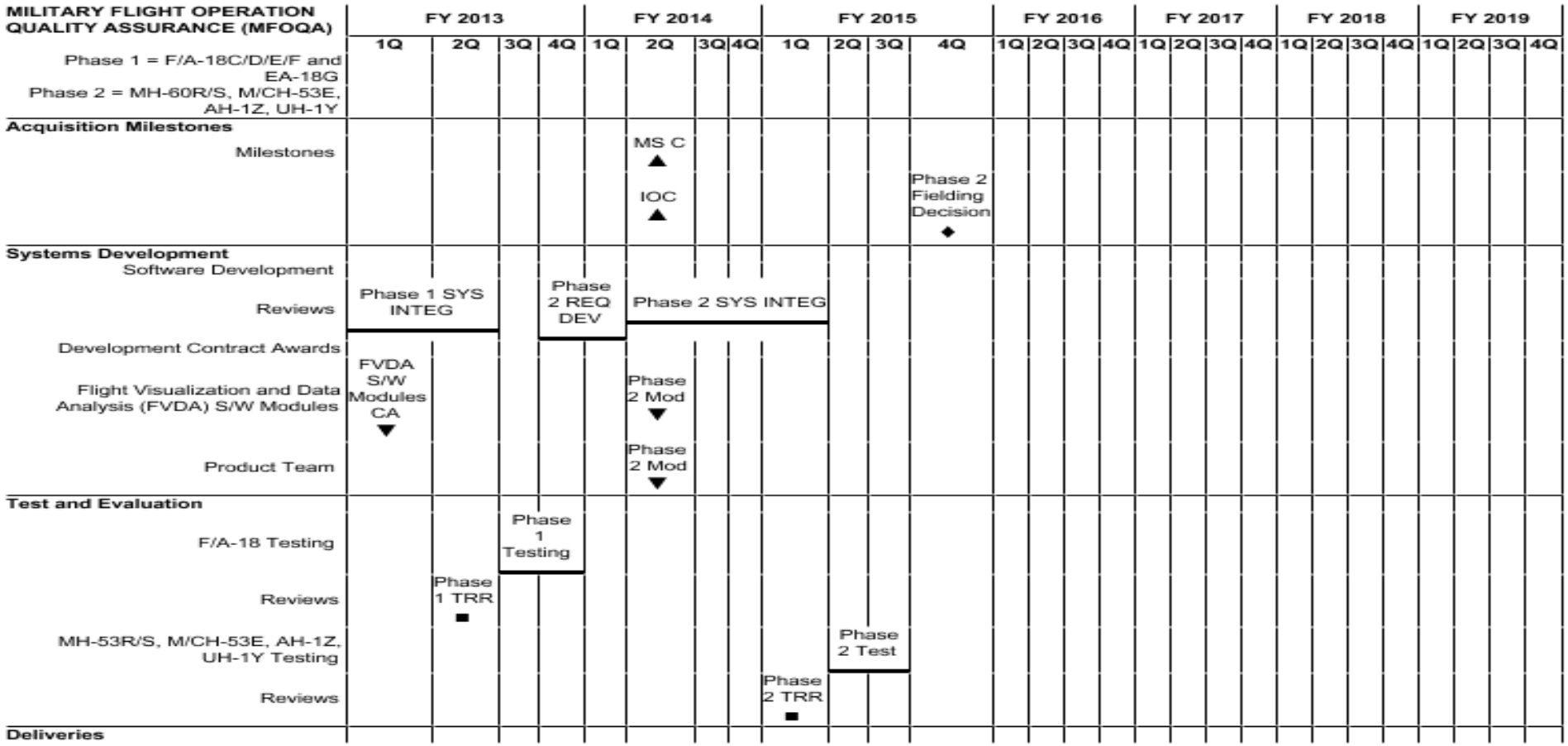


Exhibit R-4, RDT&E Schedule Profile: PB 2015 Navy		Date: March 2014
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604215N / *Standards Development*	**Project (Number/Name)** 0572 / *JT Service/NV Std Avionics CP/SB*

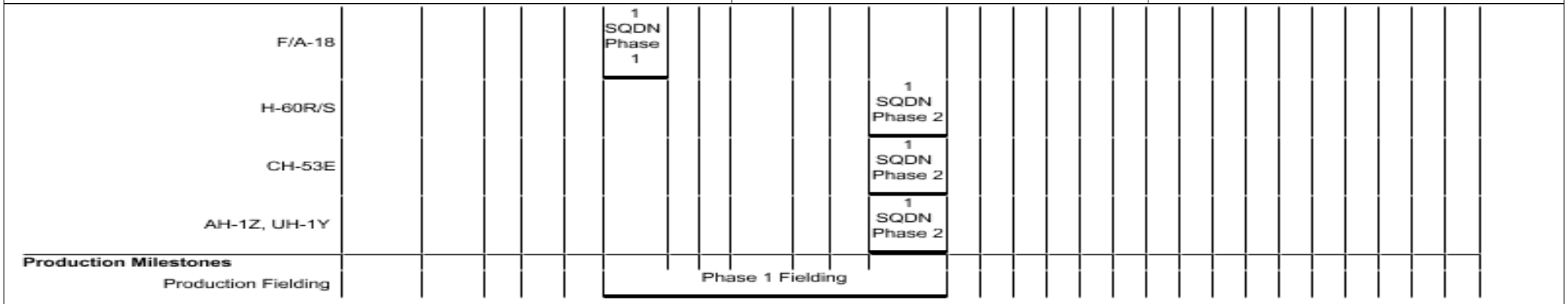


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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Navy		Date: March 2014
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604215N / *Standards Development*	**Project (Number/Name)** 0572 / *JT Service/NV Std Avionics CP/SB*

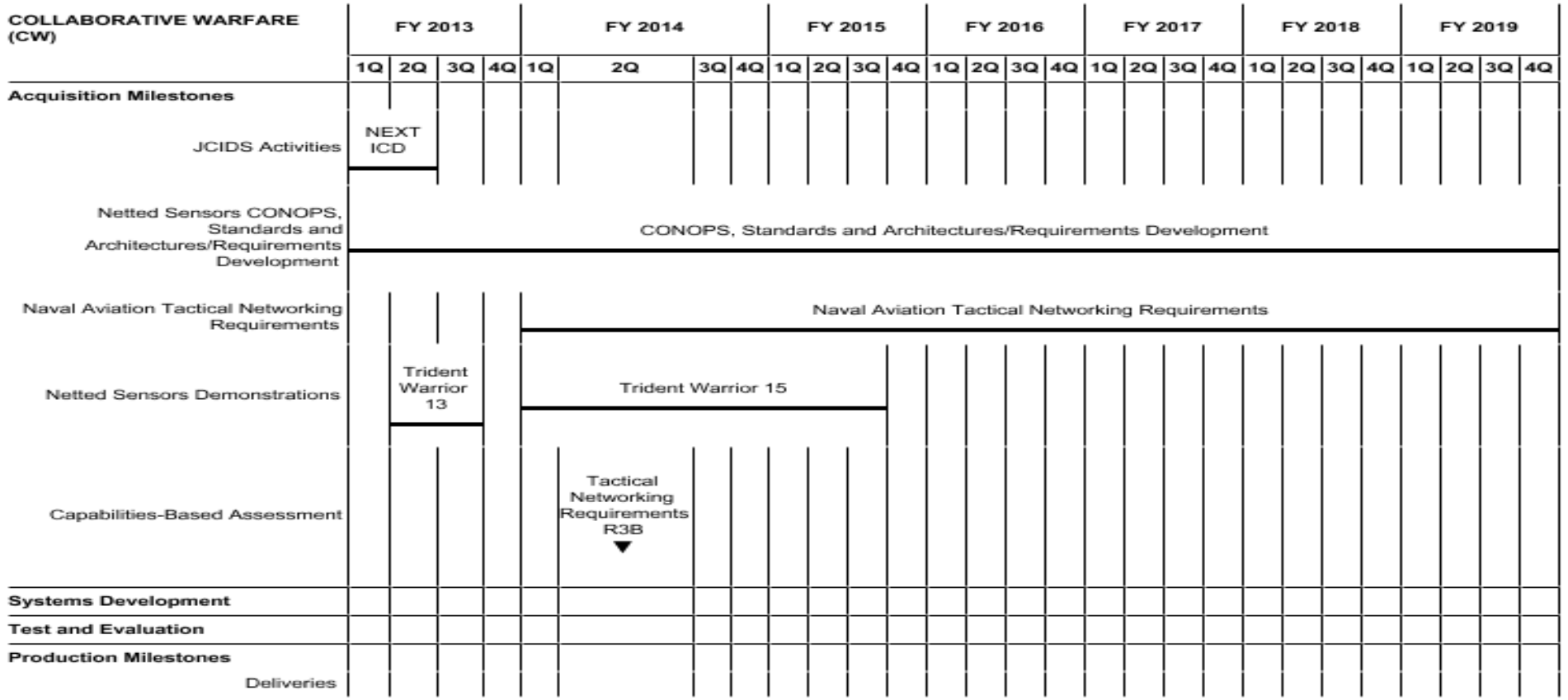

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Navy		Date: March 2014
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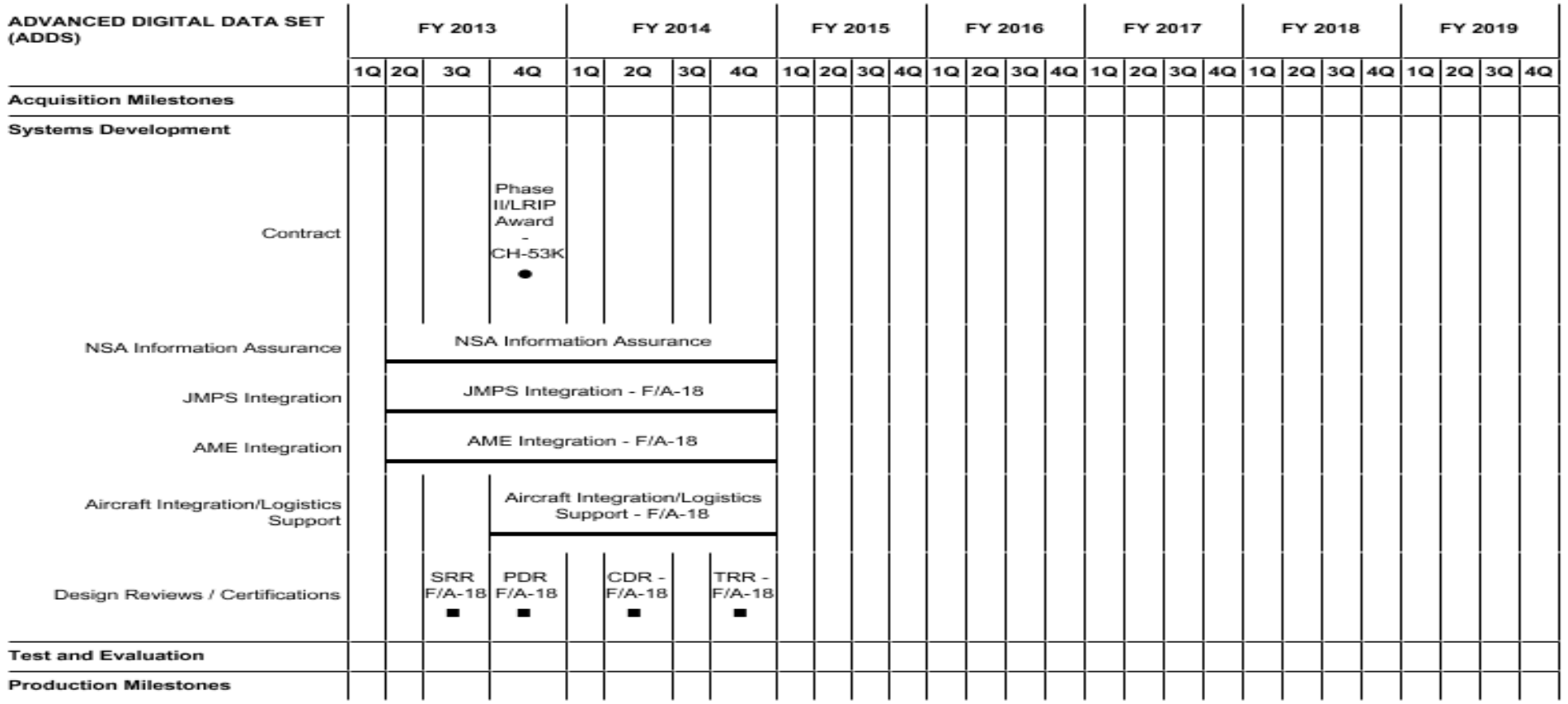

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Navy		Date: March 2014
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604215N / *Standards Development*	**Project (Number/Name)** 0572 / *JT Service/NV Std Avionics CP/SB*

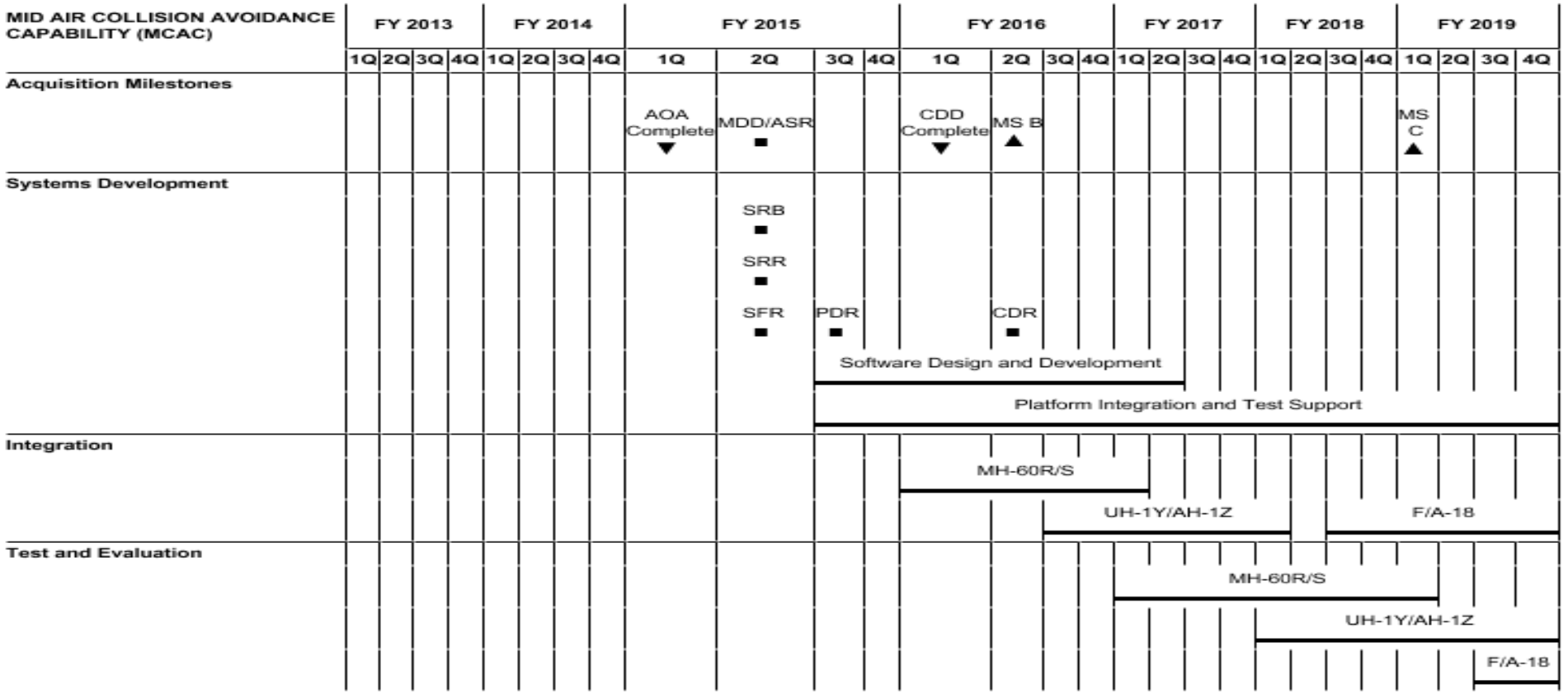

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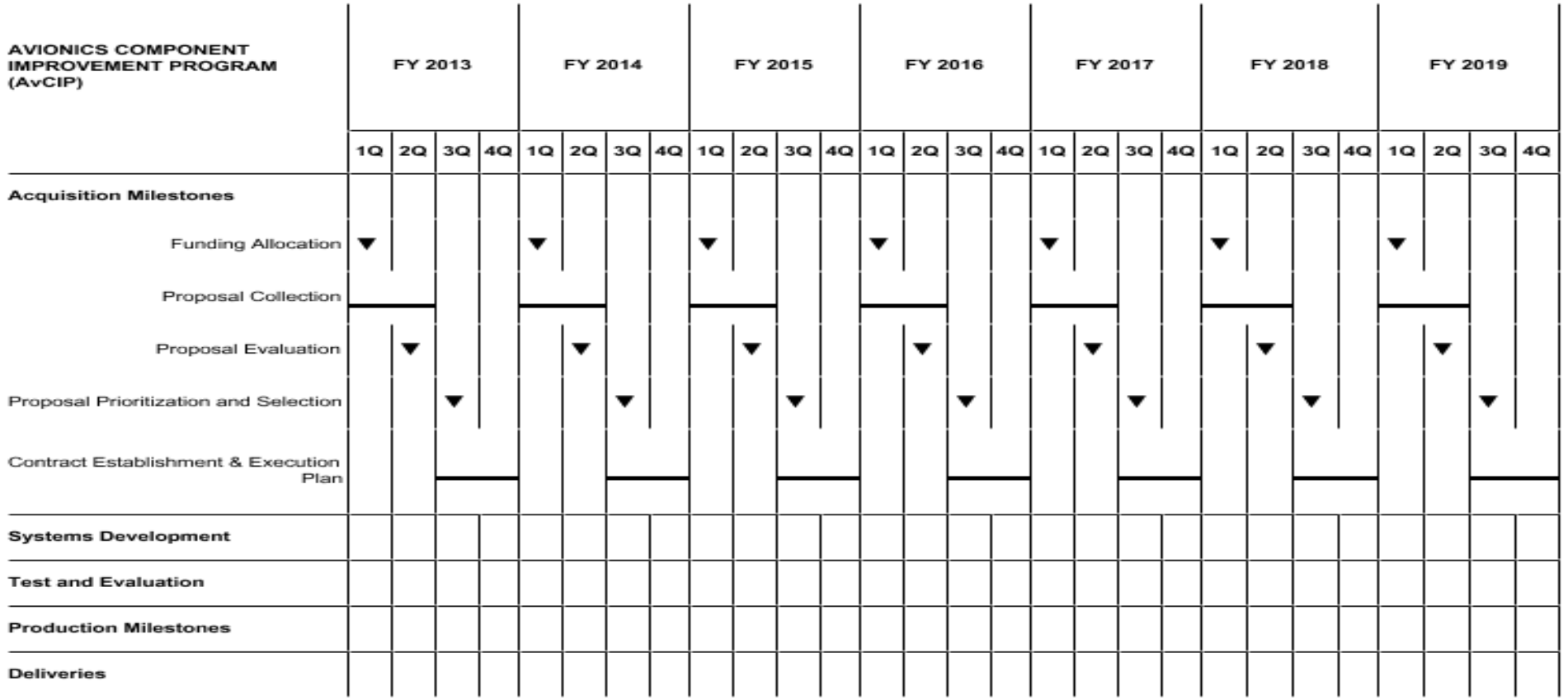
Exhibit R-4, RDT&E Schedule Profile: PB 2015 Navy		Date: March 2014
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604215N / *Standards Development*	**Project (Number/Name)** 0572 / *JT Service/NV Std Avionics CP/SB*



2015PB - 0604215N - 0572

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy			Date: March 2014
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604215N / *Standards Development*	Project (Number/Name) 1857 / *Calibration Standards*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
1857: *Calibration Standards*	9.036	1.698	1.835	1.582	-	1.582	1.661	1.701	1.725	1.764	Continuing	Continuing
Quantity of RDT&E Articles	0.000	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

OPNAV sponsored (by instruction), Navy-wide program which addresses Metrology related RDT&E issues for navy weapon systems, shipboard platforms, Naval Air, and Fleet Ground Marines. It supports development of calibration standards (equipment, procedures and technical data) required to resolve Metcal related safety, obsolescence, new and emerging technology support and cost reduction issues. It funds Navy unique and lead service responsibilities in DoD and Joint Services Metrology Research Programs to develop calibration solutions. The line supports development of measurement requirements to verify performance of all test systems used to validate the operation of Navy weapon Systems with calibration standards traceable to the National Institute of Standards and Technology to calibrate, sustain and ensure performance accuracy.

This program also provides benefits and efficiencies in a joint collaborative environment within the Tri-Services. Projects are identified and defined so that they will meet the universal requirement. Development efforts are integrated in order to achieve the common capabilities required at minimum cost. This is also a regular and common business practice within the Navy Metrology Community where R&D efforts are communicated and integrated into the multiple testing and Monitoring Systems. This is done in support of Program Managers, Sponsors, and Principle Executive officers. As a result, common requirements are established, duplication of efforts are eliminated, and best value, high quality Metcal products are produced for the Navy.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Title: Calibration Standards	1.698	1.835	1.582
Articles:	-	-	-
FY 2013 Accomplishments: ($.706) Continue to develop calibration standards (hardware) In support of physical mechanical and Chemical and Biological Detection Systems. ($.270) Continue development of physical and mechanical standards in support of Fleet Shipboard Enhancements. ($.722) Continue development of standards in support of electro optical night vision systems and boresight calibration.			
FY 2014 Plans: ($.632) Transition calibration standards in support of electro optical standards (hardware) in support of safety of flight operations.			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604215N / *Standards Development*	**Project (Number/Name)** 1857 / *Calibration Standards*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
($.872) Continue development of calibration standards (hardware) in support of chemical and biological detection systems (chemical warfare agent detection systems). ($.331) Continue development of analytical metrology (processes) in support of automated interval and uncertainty analysis. ***FY 2015 Plans:*** ($907K) Continue development calibration standards in support of electro optical standards (hardware) in support of safety of flight operations. ($428.8K) Continue development of calibration standards (hardware) in support of Physical Mechanical standards in support of Shipboard Flight Operations and NAVAIR Oxygen systems. ($246.2K) Continue development of analytical metrology (processes) in support of automated interval and uncertainty analysis.			
Accomplishments/Planned Programs Subtotals	1.698	1.835	1.582

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Funds provide for in-service engineering initiation of metrology research and developmental efforts of unique non-commercial hardware standards in the development of six key thrust technological areas which correspond to Chembio Defense, Microwave/Millimeter wave, Physical Mechanical, Electro-Optical, Analytical Metrology and Electrical/Electronic systems. These standards will ensure measurement accuracy in advanced and emerging combat weapon systems and associated test equipment. These hardware test standards will also provide for cost effective and efficient system maintenance and calibration measurements that reduce wrong test decisions and will result in lower maintenance cost and higher system performance reliability.

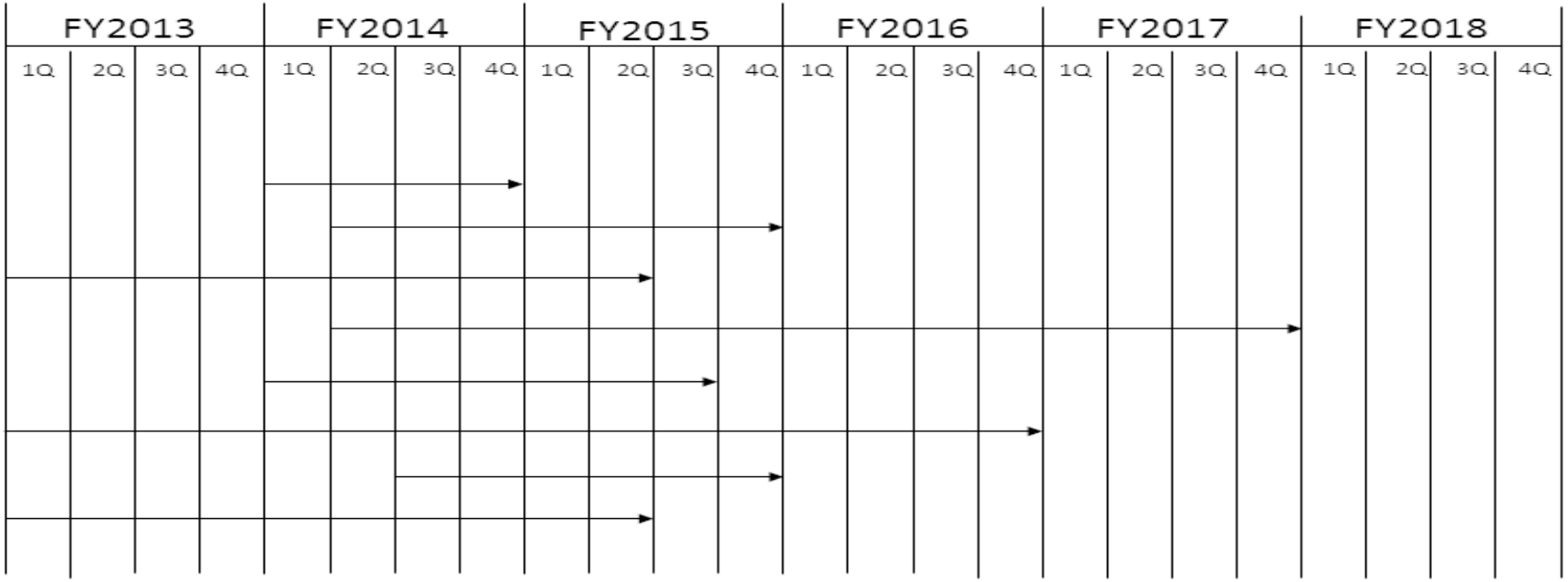
E. Performance Metrics

The U.S. Navy Metrology RDT&E Program will transition 4 current projects within the next 12 months in technology area of Electro Optical, Physical Mechanical, Nuclear, Biological and Chemical, and Analytical metrology in new calibration hardware and processes. Will continue the research and development of 5 projects in progress in the technology areas of Physical Mechanical, Electro Optical, Nuclear, Biological and Chemical, and Analytical metrology for the purpose of ensuring measurement accuracy in new emerging technology measurement requirements of Navy weapon systems. Success measures will be articulated through program goals and a balance score card strategy system.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Navy		Date: March 2014
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604215N / *Standards Development*	**Project (Number/Name)** 1857 / *Calibration Standards*

Exhibit R4 RDT&E Schedule Profile: PB 2015 Navy

Appropriation/Budget Activity	R-1 Program Element (Number/ Name)	Project (Number/Name
1319/05	1857/*Calibration Standards*	PE 0604215N/*Standards Development*



PE 0604215N: Standards Development

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy			Date: March 2014
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604215N / *Standards Development*	Project (Number/Name) 2311 / *Stores Planning and Weaponeering Module*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
2311: *Stores Planning and Weaponeering Module*	137.852	9.346	12.256	9.305	-	9.305	12.231	12.492	11.700	11.939	Continuing	Continuing
Quantity of RDT&E Articles	0.000	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

Project 2311, Stores Planning and Weaponeering Module: The Naval Aircraft Weaponeering Components project, now referred to as the Weaponeering and Stores Planning (WASP) components, are integrated software products that allow aircrew to determine the best combinations of weapons and delivery conditions to achieve the desired level of target damage, eliminate weapon delivery solutions that violate aircraft Type/Model/Series (T/M/S) specific safety-of-flight envelopes, and perform detailed weapons employment planning. WASP is approved by Air Warfare Division (N98) as a flight clearance implementation system for the F/A-18 A, A+, B, C, D, D (RC), E, F; and EA-18G. WASP components will alert pilots if their planned weapon release conditions meet flight clearance limits, will result in bomb-to-bomb collisions, bomb-to-aircraft collisions, aircraft overstress, or excessive risk of aircraft loss/damage in the event of fuze early bursts. Weapon employment planning is fundamental to the Joint Capability Area of Force Application and joint mission areas of Strike and Amphibious Warfare. WASP provides the Navy and Marine Corp with weaponeering capabilities that are critical requirements for Interdiction, Armed Reconnaissance and Close Air Support mission planning. Therefore, WASP product availability is critical to successful employment of the Joint Mission Planning System (JMPS) for the F/A-18 A-F and EA-18G. The WASP product encompasses a multitude of Government Furnished Information software components and tools (aircraft target maneuver simulations, weapon flyout models, target probability of damage calculators). WASP products will require updates as emergent requirements for new aircraft T/M/S, stores and weapons are approved, and new flight clearances and flight restrictions are issued by Naval Air Systems Command Headquarters (NAVAIRSYSCOM).

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Title: Product Development	4.263	6.473	3.905
Articles:	-	-	-
Description: Includes associated system engineering design, development, installation, integration and software development for WASP components V3.0A, V3.1, V3.1A, V3.1B, V3.1C, V3.1D, V3.2, V3.2A, V3.2B, V3.3 to support F/A-18 A-F; and V3.1 and later to support EA-18G. Naval Air Warfare Center Weapons Division (NAWCWD), Joint Software Support Activity (JSSA) will develop and maintain the AV-8B Weapons and Release Planning (WARP) tool. Define requirements to integrate WASP components into the JMPS. Provide domain engineering support for weapons separation, aircraft loads, flutter, fuzing and safe escape for application to WASP. Provide analysis of new requirements, allocation of requirements, design oversight, and life cycle management of the WASP program. Develop new aircraft configuration, aircraft loading, weapon optimization, store release and delivery planning components for F/A-18 A-F and EA-18G new flight clearances and flight restrictions issued by NAVAIRSYSCOM. Provide configuration management, system administration, quality assurance, documentation, metrics and software risk management for WASP. Acquire, integrate and modify numerous Government Furnished Information (GFI) software			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604215N / *Standards Development*	**Project (Number/Name)** 2311 / *Stores Planning and Weaponeering Module*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
components and tools (aircraft target maneuver simulations, weapon flyout models, target probability of damage calculators, etc.) that are used for the WASP software development. Integrate WASP with Joint Standoff Weapon/Joint Direct Attack Munitions/ Standoff Land-Attack Missile - Expanded Response and other weapons mission planning systems as required. ***FY 2013 Accomplishments:*** Continued development of V3.0 and delivered for Mission Planning Environment (MPE) integration. Began development of V3.1. Contract Line Item Number (CLIN) exercised to begin development for database update (V3.0A). Provided $0.3M of funding to NAWCWD, JSSA for WARP product development. ***FY 2014 Plans:*** Release V3.0 to the Fleet. Continue development and release of V3.1. Develop and release multiple database updates. Begin development of V3.2. ***FY 2015 Plans:*** Continue V3.2 development, begin development of V3.3, and release multiple database updates.			
Title: Test and Evaluation (T&E) ***Articles:*** ***Description:*** Provide test and evaluation for unit and system level testing; functional qualification testing; safety of flight certification testing; integration and standards compliance testing for WASP versions V3.0A, V3.1, V3.1A, V3.1B, V3.1C, V3.1D V3.2, V3.2A, V3.2B. Provide Joint Mission Planning System Mission Planning Environment Integration test support. Provide testing and test support to ensure all (to include internally developed software, externally developed GFI) components comply with Department of Navy (DoN) and Department of Defense (DoD) software mandates and directives. These include Integrated Shipboard Network System IT-21, DoD Information Assurance Certification and Accreditation Process, Navy Marine Corps Intranet (NMCI) and DoD Information Technology Portfolio Repository. All Fleet released software must comply with DoN and DoD software directives or will not be allowed to run on ship Local Area Networks or NMCI. ***FY 2013 Accomplishments:*** Completed test and evaluation for WASP V3.0. Began test and evaluation of WASP V3.1. ***FY 2014 Plans:*** Complete test and evaluation of WASP V3.1 and multiple database updates. Analyze test requirements for V3.2. ***FY 2015 Plans:***	2.516 -	2.552 -	2.109 -

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604215N / *Standards Development*	**Project (Number/Name)** 2311 / *Stores Planning and Weaponeering Module*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Complete test and evaluation of WASP V3.2 in order to release to fleet in FY16. Complete test and evaluation of multiple database updates. Analyze test requirements for V3.3.			
Title: Program Management/Systems Engineering	2.567	3.231	3.291
Articles:	-	-	-
Description: Provide program management and systems engineering support, which includes requirements definition and analysis, compliance with Naval Air Systems Command systems engineering technical review processes, Weaponeering and Stores Planning (WASP) acquisition documentation development and support, cost, schedule and performance management, contracting support (providing contract administration, preparing contract packages for award), compliance with external directives and providing financial support (accept, obligate, commit, and track funding). Provide travel for WASP Government personnel. Continue performing project management support for this program throughout the Future Years Defense Program/Plan. ***FY 2013 Accomplishments:*** Continued project management and systems engineering support to the WASP for future releases of WASP to the fleet. ***FY 2014 Plans:*** Continue project management and systems engineering support to the WASP for future releases of WASP to the fleet. Additional support will be required for multiple database releases. ***FY 2015 Plans:*** Continue project management and systems engineering support to the WASP for future releases of WASP to the fleet. Additional support will be required for multiple database releases.			
Accomplishments/Planned Programs Subtotals	9.346	12.256	9.305

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• RDTE/3858: *Air Force Mission Planning*	69.377	62.605	86.628	-	86.628	86.700	78.456	79.010	-	Continuing	Continuing

Remarks

D. Acquisition Strategy

Weaponeering and Stores Planning (WASP) products, delivered annually, were developed in-house by NAVAIR consisting of Naval Air Warfare Center Aircraft Division and Naval Air Warfare Center Weapons Division engineers and support contractors. The team has now migrated to a smaller government team that provides functional expertise in aircraft safety-of-flight (air-vehicle stores compatibility, weapons separation, aircraft aerodynamic flutter, ground/flight loads, authorized fuze arm

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604215N / *Standards Development*	**Project (Number/Name)** 2311 / *Stores Planning and Weaponeering Module*

times, aircraft safe escape), guided weapons employment and weapons effects against targets, with the majority of the software development conducted by various contractors. The Government, engineering, test, and support teams (test facilities, functional qualification testing and certification/accreditation test) are supplemented with contractor labor.

E. Performance Metrics

Average time to plan a flight: Threshold value is < 1 hour average time to plan a flight that includes full aircraft loadout and weapons delivery safe escape planning. Objective value is < 15 minutes average time to plan a flight that includes full aircraft loadout and weapons delivery safe escape planning. End product is a pilot's z-diagram knee board card.

Interoperability: Threshold value is 100% stand alone value.
Objective value is 100% stand alone value.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Navy		Date: March 2014
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604215N / *Standards Development*	**Project (Number/Name)** 2311 / *Stores Planning and Weaponeering Module*

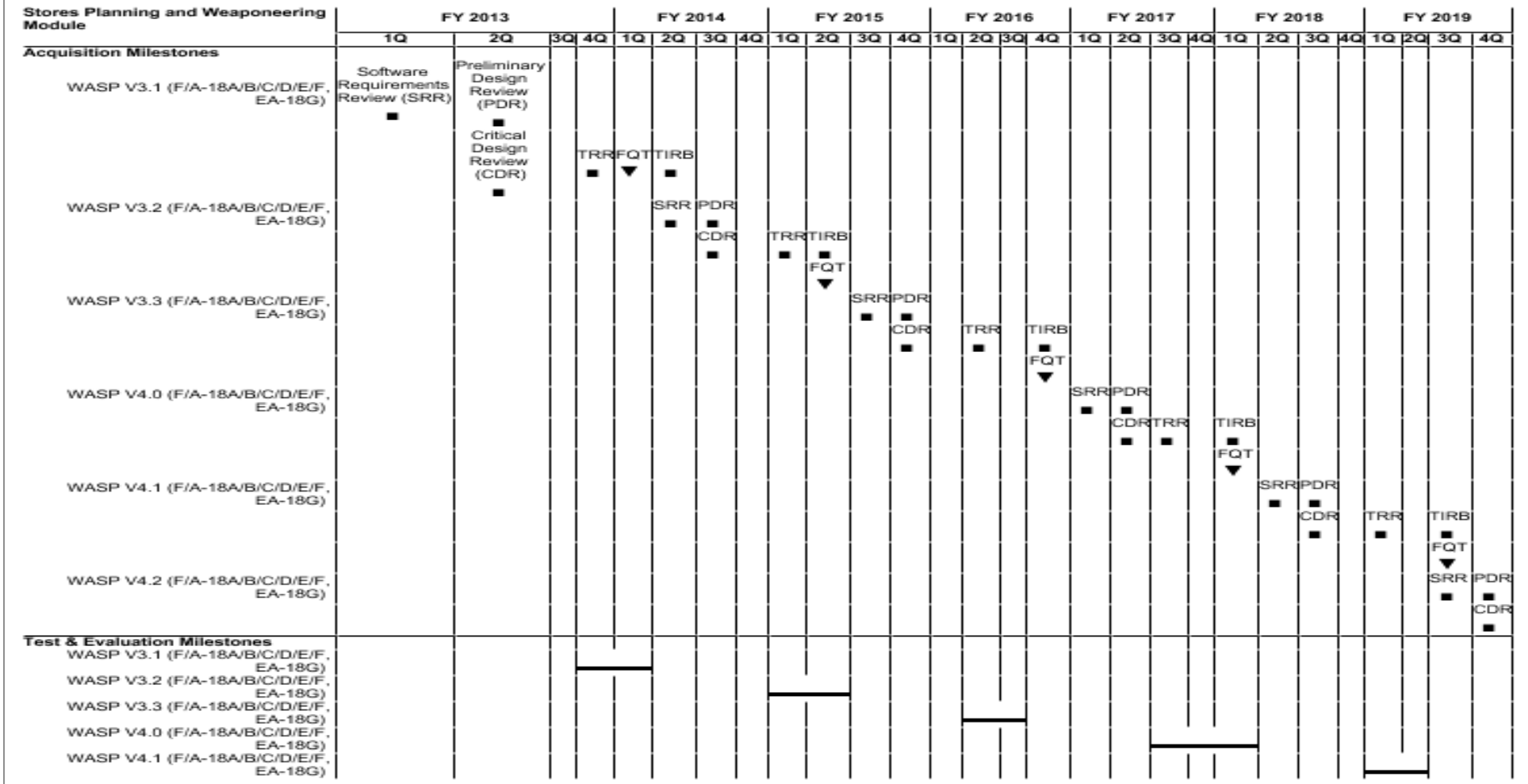


Exhibit R-4, RDT&E Schedule Profile: PB 2015 Navy		Date: March 2014
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604215N / *Standards Development*	**Project (Number/Name)** 2311 / *Stores Planning and Weaponeering Module*

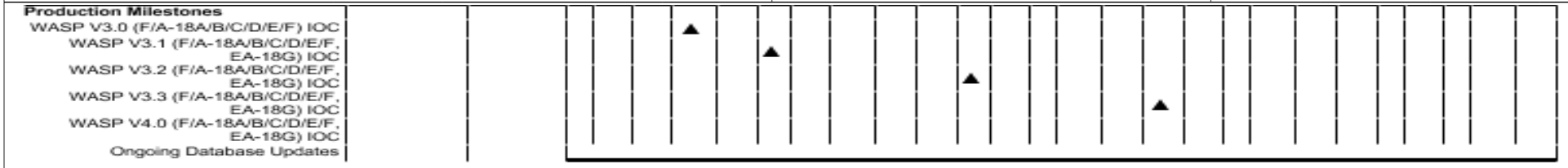


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Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy			Date: March 2014
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604215N / *Standards Development*	Project (Number/Name) 2312 / *Common Helicopters*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
2312: *Common Helicopters*	14.587	0.821	0.564	0.559	-	0.559	0.580	0.672	0.683	0.696	Continuing	Continuing
Quantity of RDT&E Articles	0.000	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

Automated mission planning systems to date have focused on developing planning capabilities for fixed-wing aircraft, while the unique planning requirements for helicopters have not been fully addressed. The unique and enhanced automated mission planning requirements that must be developed and implemented for helicopters include: data loading, an enhanced route editor (serpentine routing, hover), manipulation of higher fidelity (smaller scale) maps and imagery, enhanced performance tools (performance in and out of ground effect, performance degradation due to atmospheric conditions & elevation), and enhanced fidelity of landing zone, target zone, and threat analyses. The following type/model/series aircraft are supported by this PE: AH-1W/Z, UH-1N/Y, H-46/E, H-53D/E, H-60B/F/H/R/S and V-22. Common helicopter functionality will be developed for implementation in Joint Mission Planning System (JMPS).

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Title: Common Helicopters	0.821	0.564	0.559
Articles:	-	-	-
Description: Continue development of Common Helicopter functionality and integration with JMPS Version 1.2.4, 1.3.5, 1.4 and Portable Flight Planning Station (PFPS) Version 3.3.1 and 64 bit. Common Components include Common Mission Data Loader (CMDL), Weapon Employment Zone Overlays Tool (WEZOT) and Point Selection Tool (PST). ***FY 2013 Accomplishments:*** Completed CMDL and WEZOT compatibility with Windows 7, FW 1.2, 1.3 and 1.4. ***FY 2014 Plans:*** Develop a Search Pattern Tool and WEZOT functionality to display weapon employment zone overlays for the Advanced Precision Kill Weapons System and Joint Air-to-Ground Missile for JMPS. Develop CMDL and WEZOT to operate with next JMPS FW and 64 bit Operating System. ***FY 2015 Plans:*** Continue the development of the CMDL, WEZOT and PST to operate with next JMPS FW and 64 bit Operating System.			
Accomplishments/Planned Programs Subtotals	0.821	0.564	0.559

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy			Date: March 2014
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604215N / *Standards Development*	**Project (Number/Name)** 2312 / *Common Helicopters*	

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• RDTE/3858,5302,5380: *Air Force Mission Planning Systems*	69.377	62.605	86.628	-	86.628	86.700	78.456	79.010	-	Continuing	Continuing
• 0604231N/2213: *Mission Planning*	23.104	20.059	36.097	-	36.097	25.704	24.289	22.129	22.570	Continuing	Continuing

Remarks

D. Acquisition Strategy

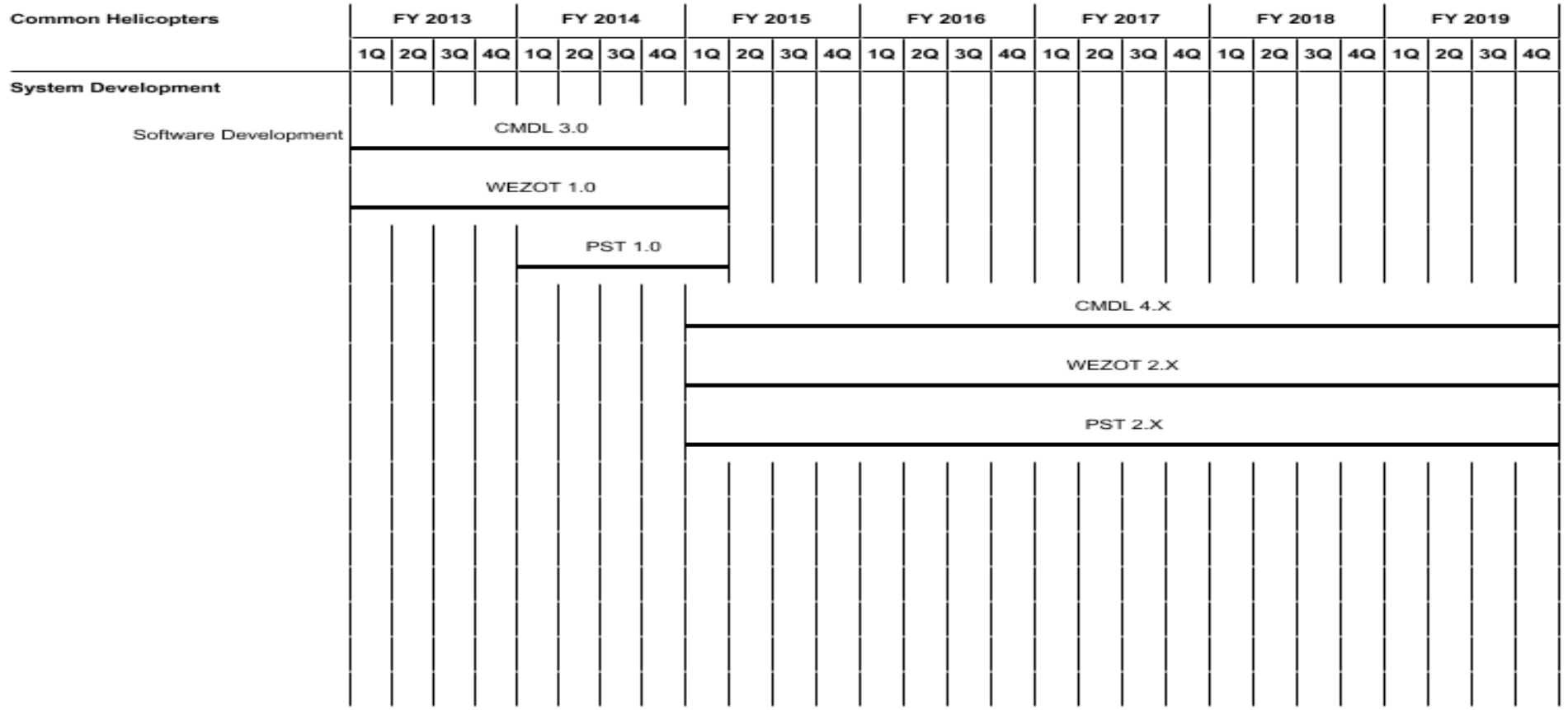
Not Applicable.

E. Performance Metrics

Export Mission Data to Data Transfer Device: Threshold value is < 12 minutes to transfer navigation, communication, weapon system initialization settings and intelligence data.

Interoperability: Threshold value is 100% of top level Information Exchange Requirements (IERs)designated critical will be satisfied. Objective value is 100% of top level IERs will be satisfied.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Navy		Date: March 2014
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604215N / *Standards Development*	**Project (Number/Name)** 2312 / *Common Helicopters*



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