Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Navy										DATE: February 2012	
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*				R-1 ITEM NOMENCLATURE PE 0604215N: *Standards Development*							
COST ($ in Millions)	**FY 2011**	**FY 2012**	**FY 2013 Base**	**FY 2013 OCO**	**FY 2013 Total**	**FY 2014**	**FY 2015**	**FY 2016**	**FY 2017**	**Cost To Complete**	**Total Cost**
Total Program Element	41.991	49.439	84.988	-	84.988	91.136	66.714	57.382	56.588	Continuing	Continuing
0572: *JT Service/NV Std Avionics CP/SB*	26.978	35.110	69.745	-	69.745	76.283	51.629	42.137	40.971	Continuing	Continuing
1857: *Calibration Standards*	1.394	1.365	1.856	-	1.856	1.871	1.901	1.937	1.975	Continuing	Continuing
2311: *Stores Planning and Weaponeering Module*	12.725	12.075	12.508	-	12.508	12.417	12.624	12.726	12.971	Continuing	Continuing
2312: *Common Helicopters*	0.894	0.889	0.879	-	0.879	0.565	0.560	0.582	0.671	Continuing	Continuing

Note

FY12-FY16 Avionics Component Improvement Program (AvCIP) - Funding has been moved from PE 0702239N, Project Unit 3170.
FY13-FY17 Avionics Component Improvement Program (AvCIP) cancelled by Issue# 50388 POM 13 ENDGAME OFFSET.

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 DOD 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.

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B. Program Change Summary ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	45.667	51.191	67.496	-	67.496
Current President's Budget	41.991	49.439	84.988	-	84.988
Total Adjustments	-3.676	-1.752	17.492	-	17.492
• Congressional General Reductions	-	-0.052			
• Congressional Directed Reductions	-	-1.700			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-2.400	-			
• SBIR/STTR Transfer	-0.963	-			
• Program Adjustments	-	-	17.447	-	17.447
• Rate/Misc Adjustments	-	-	0.045	-	0.045
• Congressional General Reductions Adjustments	-0.313	-	-	-	-

Change Summary Explanation

Technical: Not applicable.

Schedule:

0572:
Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM) - P-8 Integration extended into 1Q FY12 due to increased platform requirements of 8.33 kHz and Mode S functionalities. The start of MH-53 ADS-B DT/OT moved from 1Q FY12 to 1Q FY13 due to engineering analysis delays.
Ground Proximity Warning System/Terrain Awareness Warning System (GPWS/TAWS) - H-1 GPWS IOC moved from 3Q FY11 to 2Q FY13, H-60 TAWS IOC removed, H-1 DT moved from 1Q FY11 to 4Q FY12, and H-1 OT moved from 2Q FY11 to 1Q FY13 due to platform SCS schedule slip and non-availability of aircraft to support test. Added H-60 Obstacles MSB, MSC, and moved H-60 SW development from 1Q FY12 to 3Q FY12 due to re-designation of H-60 Obstacles from ECP to ACAT IV T Program. Changed H-60 TAWS Obstacles DT to H-60 TAWS Obstacles IT&E and moved start date to 4Q FY15 and deleted H-60 TAWS Obstacles OT due to platform test approach.
Military Flight Operational Quality Assurance (MFOQA) - Schedule changes due to the inclusion of additional requirements. MSC is now 3Q FY12 vice 1Q FY12.
Collaborative Warfare (CW) - NEXT CBA efforts extended from 1Q FY11 to 4Q FY11 due to execution and review of NEXT CBA products.
Collision Avoidance Safety Program (CASP) - Removed NSA IA efforts from CASP schedule and realigned in ADDS schedule for development contract award.
Advanced Digital Data Set (ADDS) - Schedule updated to align with lead platform schedule. MSB is now 3Q FY12 vice 1Q FY12.
Avionics Component Improvement Program (AvCIP) cancelled by Issue #50388 POM 13 ENDGAME OFSET.

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1857: Not Applicable.

2311: Acquisition Milestone Changes:

Due to funding constraints, Weaponeering and Stores Planning (WASP) V3.2 development was delayed resulting in a push of V3.3 and V3.4. WASP V3.2, V3.3 and V3.4 were adjusted accordingly:
V3.2 Software Requirements Review (SRR) from 3QFY13 to 3QFY14, V3.2 Preliminary Design Review (PDR) from 4QFY13 to 3QFY14, V3.2 Technical Information Review Board (TIRB) moved from 4QFY14 to 4QFY15, V3.2 Functional Qualification Test (FQT) moved from 4QFY14 to 4QFY15. WASP V3.2 Inital Operational Capability (IOC) moved from 2QFY15 to 2QFY16.

V3.3 Software Requirements Review (SRR) from 3QFY14 to 1QFY16, V3.3 Preliminary Design Review (PDR) from 4QFY14 to 1QFY16, V3.3 Critical Design Review (CDR) from 1QFY15 to 2QFY16, V3.3 Test Readiness Review (TRR) from 3QFY15 to 4QFY16, V3.3 Technical Information Review Board (TIRB) moved from 4QFY15 to 2QFY17, V3.3 Functional Qualification Test (FQT) moved from 4QFY15 to 2QFY17, WASP V3.3 Test and Evaluation moved from 3QFY15-4QFY15 to 4QFY16-2QFY17. WASP V3.3 Inital Operational Capability (IOC) moved from 3QFY16 to 3QFY17.

V3.4 Software Requirements Review (SRR) moved from 3QFY15 to 3QFY17, V3.4 Preliminary Design Review (PDR) moved from 4QFY15 to 4QFY17, V3.4 Critical Design Review (CDR) moved from 1QFY16 to 4QFY17, V3.4 Technical Information Review Board (TIRB) and V3.3 Functional Qualification Test (FQT) moved outside the FYDP.

2312: Not Applicable.

9999: Not Applicable.

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COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
0572: *JT Service/NV Std Avionics CP/SB*	26.978	35.110	69.745	-	69.745	76.283	51.629	42.137	40.971	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

The Collision Avoidance Safety Program (CASP) Program, which began in FY11 and the follow-on Advanced Digital Data Set (ADDS) program in FY12 was simply a name change and re-distribution of requirements.
FY12-FY16 Avionics Component Improvement Program (AvCIP) funding has been moved from PE 0702239N, PU 3170.
FY12 Military Flight Operational Quality Assurance (MFOQA) RDT&E Article (1) for F/A-18 Squadron.
FY14 Military Flight Operational Quality Assurance (MFOQA) RDT&E Articles (2) for MH-60R/S (1) and CH-53E (1).
FY14 Advanced Digital Data Set RDT&E Articles (20) for CH-53K and MH-60R/S.
FY15 Advanced Digital Data Set RDT&E Articles (20) for CH-53K and MH-60R/S.

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 Communication Navigation Surveillance Air Traffic Management (CNS/ATM), Advanced Mission Computers and Displays (AMCD), Tactical Communications (TACCOM), Ground Proximity Warning System/Terrain Awareness Warning System (GPWS/TAWS), Military Flight Operational Quality Assurance (MFOQA), Collaborative Warfare (CW), Avionics Component Improvement Program (AvCIP), Collision Avoidance Safety Program (CASP), Advanced Digital Data Set (ADDS) and Mid Air Collision Avoidance Capability (MCAC) formerly named Airborne Collision Avoidance System (ACAS). Participation in Human Factors Quality Management Board (HFQMB) ensures Navy safety upgrades and mandatory safety improvements for naval aircraft.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Mission Computer/Mission Systems Upgrade (AMCD)	0.477	-	-	-	-
Articles:	0				
Description: This program will conduct research, studies, development, integration, demonstration, test and evaluation efforts to ensure viable aircraft computers, processors, and displays are developed and available to support naval aviation requirements. Perform platform integration studies and activities to expand the user base of common hardware and core system software capabilities.					
FY 2011 Accomplishments:					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Completed Trade Study activities for Type-4 Advanced Mission Computer upgrade to support the F/A-18E/F/G Super Hornet Flight Plan with Increment III and Increment IV capabilities.					
Title: Integration/Certification of Developmental Aircraft (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, 8.33kHz, Reduced Vertical Separation Minimums (RVSM), Required Navigation Performance (RNP RNAV), and Automatic Dependent Surveillance-Broadcast (ADS-B) functional integration and certification efforts into naval aircraft. Perform platform functional integration for F/A-18E/F, MH-60S, MH-60R, AH-1Z, UH-1Y and other developmental platforms in the areas of communication, navigation, surveillance, processing and displays. 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 (JSF), CH-53K, and Unmanned Air Systems. Capabilities include Mode S, 8.33kHz, RVSM, RNP/RNAV, ADS-B, and other civil and military capabilities. ***FY 2011 Accomplishments:*** Complete P-8A Certification of 8.33 kHz, Mode S, RVSM and RNP RNAV capabilities. Initiate MH-53E integration of ADS-B capability concurrent with Cockpit Upgrade. Assist with insertion of CNS/ATM technologies on and certification of developmental platforms. ***FY 2012 Plans:*** Integrate ADS-B into MH-53E concurrent with Cockpit Upgrade. Assist with insertion of CNS/ATM technologies on and certification of developmental platforms. ***FY 2013 Base Plans:*** Complete integration/certification of ADS-B into MH-53E concurrent with Cockpit Upgrade. Assist with insertion of CNS/ATM technologies on and certification of developmental platforms.	0.140 0	1.595 0	0.600 0	-	0.600 0
Title: Joint Service Review Committee for Avionics Standardization (JSRC-AS) ***Articles:*** ***Description:*** The JSRC-AS program supports Congressional and ASN (RDA) direction to control the growing proliferation of 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 JRSC-	0.728 0	1.585 0	1.000 0	-	1.000 0

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
AS supports generation and review of new avionics requirements with potential for joint service application. The JSRC-AS consists of one O-6/0-5 Level member from each service and Coast Guard to chair the committee as well as the appropriate staff to support joint service working group efforts. The JSRC-AS reports up to the O-7 level tri-service Aviation Common Systems Board (ACSB) who reports up to the O-9 level Joint Aeronautical Commanders Group. ***FY 2011 Accomplishments:*** Provided leadership in support of the Navy's interest to the JSRC tri-service committee promoting commonality and joint programs with focus on interoperability, communications, CNS/ATM, Joint Services avionics obsolescence management and the update of the CAMP. Supported and participated in NARG panels, OAG, and HFQMB. ***FY 2012 Plans:*** 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, CNS/ATM, Joint Services avionics obsolescence management and the update of the CAMP. Support and participate in NARG panels, OAG, and HFQMB. ***FY 2013 Base Plans:*** Provide leadership and strategic vision as naval aviation's representatives to the JSRC-AS. Participate in joint working groups and promote efforts that makes good technical and economic sense to more than one service.					
Title: Develop Evolutionary Communication Systems (TACCOM)	5.055	3.549	2.809	-	2.809
Articles:	0	0	0		0
Description: This program will conduct research, studies, development, integration, demonstration, test and evaluation efforts to ensure tactical communication systems and capabilites 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, Beyond Line-of-Sight, Satellite Communication, High Frequency, civil interoperability, and Joint Precision Approach Landing System (JPALS) data link into the ARC-210 system. Support for networking requirements development and prototyping, Integrated Waveform, Intelligence Broadcast System, Joint Tactical Radio System, Tactical Networks, Datalinks					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
and Link 16. Awarded integration study contracts for Tactical Communication systems within E-2 AHE (Advanced Hawkeye), H-1, H-53, V22, and AV-8B and other aircraft along with Link-16 and MUOS. ***FY 2011 Accomplishments:*** Received Joint Interoperability Testing Center (JITC) certification of the RT-1939(C) and received approval for Gen5 Full Rate Production. Continued development of the Tactical Secure Voice (TSV) and JPALS for inclusion in a Gen5 Receiver Transmitter. Assisted platforms with Gen5 SIL and aircraft regression testing. Compiled test results into source data document for future Gen5 testing. ***FY 2012 Plans:*** Continue development of the TSV. Perform test and evaluation of Version 003/004 software for inclusion into Gen5. ***FY 2013 Base Plans:*** Continue development of Integrated Waveform (IW) and Variable Message Format (VMF).					
Title: Develop Ground Terrain Warning Capability (GPWS/TAWS) ***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 Collision Avoidance System (CAS) 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 CAS development effort. Develop GPWS/TAWS CAS 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. ***FY 2011 Accomplishments:*** Delivered GPWS software load to the fleet for the H-60 platform. ***FY 2012 Plans:*** Support DT of GPWS in H-1 Software Configuration Set 6.0. Initiate TAWS with obstacles acquisition documentation and complete Milestone B for H-60. ***FY 2013 Base Plans:***	3.707 0	1.735 0	7.949 0	-	7.949 0

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Support OT and fielding of H-1 GPWS in platform Software Configuration Set 6.0. Initiate TAWS with obstacles requirements definition and software development for H-60.					
Title: Develop MFOQA Capability ***Articles:*** ***Description:*** This program will develop a Military Flight Operations Quality Assurance (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 (SRR), Preliminary Design Review (PDR), Critical Design Review, Developmental Testing (DT), Milestone C (MS C) and follow-on Decision Reviews in support of initial Fixed Wing (Phase 1) and Rotary Wing (Phase 2) platforms. ***FY 2011 Accomplishments:*** Phase 1 completed Delta Critical Design Review, completed Contractor Risk Reduction Testing, and began DT-B2 System test. ***FY 2012 Plans:*** Complete Phase I DT-B2 and DT-B3 testing, Achieve MS C and initiate fielding to F/A-18C/D/E/F and EA-18G. Phase 2 conduct Requirements Development and begin Systems Integration for MH-60R/S and CH-53E. RDT&E Article (1) for F/A-18 Squadron. ***FY 2013 Base Plans:*** Complete Phase 2 Systems Integration for MH-60R/S and CH-53E.	12.603 0	14.789 1	13.649 0	-	13.649 0
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 following efforts are included: 1) A concept refinement Joint Capability Integration Development System activity, specifically, the Naval Effects Cross Domain Targeting (NEXT) Capabilities Based Assessment (CBA). 2) A	0.798 0	0.478 0	0.540 0	-	0.540 0

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
netted sensors proof of concept prototype demonstration in Trident Warrior exercises. 3) An integration of Netted Sensors/Sensor Fusion into the airborne tactical edge technical study. 4) A Modeling Simulation and Analysis (MS&A) Study to quantify benefits of collaborative warfare capabilities, assess feasibility, and derive initial decomposition to system requirements for use by various platform's Program Objective Memorandum issue sheets. ***FY 2011 Accomplishments:*** Completed NEXT CBA. Participated with FLTCYBERCOM/10F and Fleet Forces Command in the Trident Warrior 2011 netted sensors experiment. Completed Netted-Sensor/Fusion Engine Distribution technical study. Developed Integrated Targeting and Fire Control (ITFC) Roadmap to incorporate technical study results and netted sensors architectures into a Concept of Operations (CONOPS). ***FY 2012 Plans:*** Develop requirements, standards, and architectures in support of new and updated netted-sensors' CONOPS and capabilities. ***FY 2013 Base Plans:*** Develop requirements, standards, and architectures in support of new and updated netted-sensors' CONOPS and capabilities.					
Title: Collision Avoidance Safety Program (CASP) ***Articles:*** ***Description:*** This is a defense directed safety program to develop integrated common avionics enabling hardware and software necessary for predictive collision awareness and avoidance warning for man-made and natural obstacles in the air and on the ground. This program will conduct research, studies, development, integration, test and evaluation, and demonstration efforts to meet collision avoidance requirements. The program includes development of crash survival recording capability for post collision analysis. ***FY 2011 Accomplishments:*** Complete initial research and acquisition documentation for capability enabling hardware and software components.	3.470 0	-	-	-	-
Title: Avionics Component Improvement Program (AvCIP) ***Articles:***	-	2.000 0	-	-	-

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Description: Investigate High Value Return on Investment Candidates, addressing avionics critical readiness and reliability deficiencies, obsolescence, loss of sustainability and top repair cost drivers. Prioritize critical avionics performance, capability and obsolescence problems that require immediate attention. Pursue solutions to these problems based upon urgency, warfighting contribution and return on investment. Develop and test system solutions based on priority. Resources will cover program management, engineering, contracting and logistics efforts; design and development, logistics elements such as technical data, support equipment, provisioning, and training; prototypes; platform integration; and developmental/operational testing. NOTE: FY12-FY16 AvCIP funding has been moved from PE 0702239N, Project Unit 3170. ***FY 2012 Plans:*** Address current fleet problem avionics systems (top readiness degraders, cost drivers, obsolescence-driven sustainability, capability loss, fleet head-hurters). They will be chosen following a comprehensive review of most important and executable project submissions. In order to address those issues with more imminent and direct Fleet operational impacts, this review is completed following a formal solicitation and review that is completed mid-year in the year prior to execution. Candidate prioritization and selection are followed by project endorsement which leads to contract award in year of execution.					
Title: Advanced Digital Data Set (ADDS) ***Articles:*** ***Description:*** The Collision Avoidance Safety Program (CASP) Program, which began in FY11 and the follow-on Advanced Digital Data Set (ADDS) program in FY12 was simply a name change and re-distribution of requirements. ADDS consists of enabling hardware and software solutions for an advanced digital data military operating environment including removable memory, secure data management and storage, high speed data transfer, recording (including mission, sensor, audio, and video), crash survivability, maintenance diagnostics as well as mission and safety application processing and protection. It is a system of systems approach that includes the design, development, test, integration and production of test hardware and software to provide advanced digital data management, storage and processing capability. ADDS will increase mission effectiveness and survivability by providing improved situation awareness, reduced crew workload, and enhanced capability for navigation, targeting, collison avoidance, and mission planning. ***FY 2012 Plans:***	- 	9.379 0	43.198 0	- 	43.198 0

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Enter DoD Acquisition Lifecycle Management Framework at Milestone B and establish a System Design Specification (SDS) via the SRR process. The SDS will be used for a competitively awarded Engineering Management and Development (EMD) Contract for the design and development of ADDS. FY12 EMD will include all activities required to complete an Integrated Baseline Review, System Functional Review and PDR. ***FY 2013 Base Plans:*** Under EMD development, conduct Preliminary Design Review (PDR) and Critical Design Review (CDR) to ensure we are meeting platforms requirements by staying within cost and meeting schedule requirements.					
Accomplishments/Planned Programs Subtotals	26.978	35.110	69.745	-	69.745

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• APN/05770: *Common Avionics*	93.464	147.760	77.333	19.420	96.753	123.637	140.887	166.716	161.919	885.726	3,801.284

D. Acquisition Strategy

CNS/ATM program is a system of systems. The program will encompass the integration of various systems that are currently post-MS III. Systems will be procured utilizing existing contracts for integration on forward-fit and retrofit platforms to provide CNS/ATM functionality. TACCOM 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. GPWS/TAWS Software Modules will be developed by a Government Software Product Team in conjunction with Industry via cost plus fixed fee contracts. 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., AME, HUMS) and existing databases. The Navy conducted a full and open competition for both the MFOQA software development, integration and support contract as well as the COTS software data analysis product. A follow-on Sole Source Product Contract will be awarded to complete MFOQA development, as required. The CASP is a system of systems and will design, develop and test hardware and software that provides awareness and avoidance warning for man-made and natural obstacles in the air and on the ground. The Navy will award a contract(s) to develop and integrate hardware and software needed to support these capabilities in a military operating environment. AvCIP will annually compete candidate solutions according to criticality of operational contributions, technical risk, return on investment, and breadth of application. OPNAV N88 and N43, NAVAIR, NAVICP and the Fleet will participate in project selection for execution year allocation. The AvCIP Integrated Program Team will monitor project execution and track return on investment using Fleet supply and component performance tracking systems. Modification solutions include modular hardware, software and material upgrades. Resources will cover program management, engineering, contracting and logisitics efforts; design and development, logistics elements such as technical data, support equipment, provisioning, and training; prototypes; platform integration; and DT/operational testing (OT). ADDS will conduct a full and open competition to develop and procure enabling hardware and software. Mid Air Collision Avoidance Capability (MCAC) is the capability umbrella which encompasses

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all systems designed and developed to aid in air to air collison avoidance. Systems include but are not limited to Traffic Collision Avoidance Systems (TCAS), Mid-Air Collision Avoidance Systems (MCAS). MCAC will include a mix of sole source contracts and full and open competitive contracts to provide tailored software algorithms, hardware modifications, and new hardware, as required.

E. Performance Metrics

JSRC - 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, CNS/ATM, Joint Services avionics obsolescence management and the update of the CAMP. Support and participate in NARG panels, OAG, and HFQMB.
CNS/ATM - Successfully complete platform integration, test, and certifications.
TACCOM - Achieve NSA certification Ver 003 TSV Crypto Equip Aloor (CEA).
GPWS/TAWS - Develop software to meet platform specific requirements, successfully complete flight test, and deliver product on schedule.
MFOQA - Successfully complete MS C and IOC on schedule; successfully complete Phase 2 development and fleet introduction.
CW - Identify collaborative warfighting capability gaps and ensure the development of the most intelligent, cost effective, and timely solutions to fill those gaps.
CASP - Initiate requirements development, design, integration, and test.
AvCIP - Successful selection establishment, and execution of AVCIP projects, with benefits tracking.
ADDS - Achieve program acquisition milestones on cost and schedule meeting platform requirements.
MCAC - Achieve program acquisition milestones on cost and schedule meeting platform requirements.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604215N: *Standards Development*	PROJECT 0572: *JT Service/NV Std Avionics CP/SB*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Dev MFOQA	SS/CPIF	Mantech:Fairfax, VA	27.485	5.161	Dec 2011	5.242	Dec 2012	-		5.242	0.000	37.888	37.888
Primary Hardware Dev MFOQA	SS/CPFF	BGI:Dallas, TX	3.981	1.056	May 2012	1.686	Dec 2012	-		1.686	12.414	19.137	19.137
Primary Hardware Dev GPWS	TBD	TBD:TBD	7.449	0.303	Nov 2011	4.650	Nov 2012	-		4.650	0.000	12.402	12.402
Primary Hardware Dev ADDS	TBD	TBD:TBD	-	5.954	Jun 2012	34.781	Dec 2012	-		34.781	Continuing	Continuing	Continuing
Primary Hardware Dev	Various	Various:Various	55.510	1.823	Mar 2012	0.673	Mar 2013	-		0.673	Continuing	Continuing	Continuing
Aircraft Integration TACCOM	SS/FFP	Rockwell Collins:Cedar Rapids, IA	57.049	0.613	Mar 2012	0.427	Mar 2013	-		0.427	0.000	58.089	58.089
Aircraft Integration	WR	NAWCWD:China Lake, CA	7.423	-		-		-		-	0.000	7.423	
Aircraft Integration	Various	Various:Various	41.036	0.445	Mar 2012	-		-		-	Continuing	Continuing	Continuing
Systems Engineering	WR	NAWCAD:Patuxent River, MD	22.668	2.008	Nov 2011	1.937	Dec 2012	-		1.937	Continuing	Continuing	Continuing
Systems Engineering	Various	Various:Various	33.321	1.055	Mar 2012	-		-		-	Continuing	Continuing	Continuing
Training Development	Various	Various:Various	-	0.062	Mar 2012	-		-		-	0.000	0.062	
Prior year costs no longer funded in FYDP	Various	Various:Various	287.758	-		-		-		-	0.000	287.758	
		Subtotal	543.680	18.480		49.396		-		49.396			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	Various	Various:Various	2.261	0.253	Mar 2012	-		-		-	Continuing	Continuing	Continuing
Software Development	Various	Various:Various	1.975	0.171	Apr 2012	-		-		-	0.000	2.146	
Integrated Logistics Support	Various	Vartious:Various	13.558	2.811	Mar 2012	2.404	Mar 2013	-		2.404	Continuing	Continuing	Continuing
Studies and Analysis	Various	Various:Various	17.172	-		-		-		-	0.000	17.172	
Prior year costs no longer funded in FYDP	Various	Various:Various	25.371	-		-		-		-	0.000	25.371	

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604215N: *Standards Development*	PROJECT 0572: *JT Service/NV Std Avionics CP/SB*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	60.337	3.235		2.404		-		2.404			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test and Evaluation	WR	NAWCAD:Patuxent River, MD	7.821	0.777	Jan 2012	0.119	Jan 2013	-		0.119	Continuing	Continuing	Continuing
Prior year costs no longer funded in FYDP	Various	Various:Various	39.111	-		-		-		-	0.000	39.111	
		Subtotal	46.932	0.777		0.119		-		0.119			

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	Various	Various:Various	51.825	5.294	Feb 2012	7.130	Feb 2013	-		7.130	Continuing	Continuing	Continuing
Government Engineering Support	WR	NAWCAD:Patuxent River, MD	15.613	3.398	Mar 2012	3.832	Mar 2013	-		3.832	Continuing	Continuing	Continuing
Program Management Support	Various	Various:Various	8.928	-		-		-		-	0.000	8.928	
Program Management Support	WR	NAWCAD:Patuxent River, MD	14.489	3.754	Mar 2012	6.694	Mar 2013	-		6.694	Continuing	Continuing	Continuing
Travel	WR	NAVAIR:Patuxent River, MD	1.111	0.172	Oct 2011	0.170	Oct 2012	-		0.170	Continuing	Continuing	Continuing
Prior year costs no longer funded in FYDP	Various	Various:Various	12.608	-		-		-		-	0.000	12.608	
		Subtotal	104.574	12.618		17.826		-		17.826			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy			DATE: February 2012
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	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	755.523	35.110		69.745		-		69.745			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604215N: *Standards Development*	**PROJECT** 0572: *JT Service/NV Std Avionics CP/SB*

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604215N: *Standards Development*	PROJECT 0572: *JT Service/NV Std Avionics CP/SB*

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604215N: *Standards Development*	PROJECT 0572: *JT Service/NV Std Avionics CP/SB*

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604215N: *Standards Development*	PROJECT 0572: *JT Service/NV Std Avionics CP/SB*

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604215N: *Standards Development*	PROJECT 0572: *JT Service/NV Std Avionics CP/SB*

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604215N: *Standards Development*	PROJECT 0572: *JT Service/NV Std Avionics CP/SB*

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APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604215N: *Standards Development*	PROJECT 0572: *JT Service/NV Std Avionics CP/SB*

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APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604215N: *Standards Development*	PROJECT 0572: *JT Service/NV Std Avionics CP/SB*

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APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604215N: *Standards Development*	PROJECT 0572: *JT Service/NV Std Avionics CP/SB*

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APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604215N: *Standards Development*	PROJECT 0572: *JT Service/NV Std Avionics CP/SB*

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604215N: *Standards Development*	PROJECT 0572: *JT Service/NV Std Avionics CP/SB*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
ADVANCED MISSION COMPUTERS AND DISPLAYS (AMCD)				
Acquisition Milestones: FCNS Network Processor Risk Reduction T/S	1	2011	1	2011
Acquisition Milestones: OSP3e Roadmap Risk Reduction T/S	1	2011	1	2011
COMMUNICATION, NAVIGATION, SURVEILLANCE/AIR TRAFFIC MGMT (CNS/ATM)				
Test and Evaluation: P-8A Integration/Certification 8.33 kHz, MODE S, Reduced Vertical Separation Minimums (RVSM, Required Navigation Performance (RNP RNAV)	1	2011	2	2012
Test and Evaluation: MH-53E Automatic Dependent Surveillance-Broadcast Integration/Certification	1	2013	3	2013
Test and Evaluation: Assist with Insertion of CNS/ATM technologies on and certification of developmental platforms	1	2011	4	2017
TACTICAL COMMUNICATIONS (TACCOM)				
Systems Development: GEN 5 Hardware Development for SATCOM P3I	1	2011	1	2011
Systems Development: GEN 5 Integrated Waveform Satellite Communications (SATCOM) S/W Development	1	2011	1	2012
Systems Development: GEN 5 Crypto Algorithm Assessment/Development	1	2011	1	2013
Systems Development: GEN 5 SATCOM P3I S/W Assessment/Development	1	2012	4	2015
Systems Development: Joint Precision Approach Landing System (S/W) Integration	4	2015	4	2017
Test and Evaluation: GEN 5 Joint Interoperability Test Command Certification (JITC)	1	2011	1	2011
Test and Evaluation: GEN 5 JTIC Certification1	1	2012	1	2012
Test and Evaluation: GEN 5 JTIC Certification2	4	2014	4	2014
Test and Evaluation: GEN 5 National Security Agency (NSA) Certification1	4	2012	4	2012
Production Milestones: GEN 5 Production Starts	2	2011	2	2011
Production Milestones: GEN 5 Evolution (Evol) S/W Releases 2	2	2011	2	2011

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604215N: *Standards Development*	PROJECT 0572: *JT Service/NV Std Avionics CP/SB*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Production Milestones: GEN 5 Evol S/W Releases 3	3	2012	3	2012
Production Milestones: GEN 5 Evol S/W Releases 4	3	2013	3	2013
Production Milestones: GEN 5 Evol S/W Releases 5	1	2015	1	2015
Production Milestones: GEN 5 Evol S/W Releases 6	2	2016	2	2016
Production Milestones: GEN 5 Evol S/W Releases 7	4	2017	4	2017
GROUND PROXIMITY WARNING SYSTEM/TERRAIN AWARNESS WARNING SYSTEM (GPWS/TAWS)				
Acquisition Milestones: Milestones: H-60 GPWS IOC	3	2011	3	2011
Acquisition Milestones: Milestones: H-1 GPWS IOC	2	2013	2	2013
Acquisition Milestones: Milestones: H-60 OBSTACLES MS B	3	2012	3	2012
Acquisition Milestones: Milestones: H-60 OBSTACLES MS C	4	2017	4	2017
Systems Development: H-60 Obstacles Government Software Development	3	2012	4	2015
Test and Evaluation: Developmental Testing: H-1 Developmental Testing (DT)	4	2012	4	2012
Test and Evaluation: Developmental Testing: H-60 TAWS Obstacles IT&E	4	2015	1	2017
Test and Evaluation: Operational Testing: H-1 Operational Testing (OT)	1	2013	1	2013
MILITARY FLIGHT OPERATION QUALITY ASSURANCE (MFOQA)				
Acquisition Milestones: Milestones: Milestone C (MS C)	3	2012	3	2012
Acquisition Milestones: Milestones: IOC	3	2012	3	2012
Acquisition Milestones: Milestones: MH-60R/S & CH-53E Fielding Decision	3	2014	3	2014
Systems Development: Software Development: F/A-18 Software Rework	1	2011	1	2011
Systems Development: Software Development: MH-60R/S & CH-53E Requirements Development	3	2012	3	2012
Systems Development: Software Development: MH-60R/S & CH-53E Systems Integration	4	2012	4	2013
Systems Development: Reviews: F/A-18 Delta Design Review	2	2011	2	2011

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604215N: *Standards Development*	PROJECT 0572: *JT Service/NV Std Avionics CP/SB*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Systems Development: Flight Visualization and Data Analysis (FVDA) S/W Modules: FVDA S/W Modules OPT3	1	2011	1	2011
Systems Development: Flight Visualization and Data Analysis (FVDA) S/W Modules: FVDA S/W Modules OPT4	1	2012	1	2012
Systems Development: Flight Visualization and Data Analysis (FVDA) S/W Modules: FVDA S/W Modules Contract Award RDTEN	1	2013	1	2013
Systems Development: Product Team: Product Team OPT4	1	2011	1	2011
Systems Development: Product Team: Product Team Contract Award RDT&EN	1	2012	1	2012
Test and Evaluation: F/A-18 Testing: F/A-18 DT-B2	4	2011	2	2012
Test and Evaluation: F/A-18 Testing: F/A-18 DT-B3	2	2012	3	2012
Test and Evaluation: Reviews: F/A-18 Test Readiness Review (TRR)1	4	2011	4	2011
Test and Evaluation: Reviews: F/A-18 TRR2	2	2012	2	2012
Test and Evaluation: MH-53R/S & CH-53E Testing: MH-60R/S & CH-53E DT-D1	1	2014	3	2014
Test and Evaluation: Reviews: MH-60R/S & CH-53E TRR	1	2014	1	2014
Production Milestones: Production Fielding: F/A-18 Fielding	3	2012	4	2015
Production Milestones: Production Fielding: MH-60R/S & CH-53E Fielding	4	2014	4	2017
Production Milestones: F/A-18: 1 Squadron R&D	3	2012	3	2012
Production Milestones: H-60R/S: 1 Squadron R&D	4	2014	4	2014
Production Milestones: CH-53E: 1 Squadron R&D	1	2014	1	2014
COLLABORATIVE WARFARE (CW)				
Acquisition Milestones: JCIDS Activities: Joint Capability Integration Development System Activities	1	2011	4	2011
Acquisition Milestones: Netted Sensors CONOPS, Standards and Architectures/ Requirements Development: Netted Sensors CONOPS, Standards, and Architectures/ Requirements Development	1	2011	4	2017
Acquisition Milestones: Netted Sensors Demonstrations: Netted Sensors Demonstrations	1	2011	4	2011

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604215N: *Standards Development*	PROJECT 0572: *JT Service/NV Std Avionics CP/SB*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Acquisition Milestones: Capabilities-Based Assessment: Capabilities-Based Assessment	1	2011	1	2011
AVIONICS COMPONENT IMPROVEMENT PROGRAM (AVCIP)				
Acquisition Milestones: Funding Allocation: -Funding Allocation	1	2012	1	2012
COLLISION AVOIDANCE SAFETY PROGRAM (CASP)				
System Development: Requirements Development: CASP Requirement Development Capabilities Development Document	1	2011	4	2011
System Development: Design and Integration Activities: CASP Design and Integrate Activities	1	2011	4	2011
ADVANCED DIGITAL DATA SET (ADDS)				
Acquisition Milestones: Milestones: Milestone B	3	2012	3	2012
Acquisition Milestones: Milestones: Milestone C	1	2015	1	2015
Systems Development: Engineering & Management Development Contract Award	3	2012	3	2012
Systems Development: NSA Information Assurance	2	2012	3	2014
Systems Development: Reviews: System Requirements Review/System Functional Review	3	2012	3	2012
Systems Development: Reviews: Preliminary Design Review	1	2013	1	2013
Systems Development: Reviews: Critical Design Review	4	2013	4	2013
Systems Development: Reviews: Test Readiness Review	2	2014	2	2014
Systems Development: Reviews: Test Readiness Assessment	4	2014	4	2014
Systems Development: Reviews: System Verification Review/Functional Configuration Audit/Program Readiness Review	4	2014	4	2014
Systems Development: Reviews: Physical Configuration Audit	2	2016	2	2016
Test and Evaluation: Developmental Testing	1	2014	4	2016
Production Milestones: Contract Awards: Low Rate Initial Production Contract Award	3	2012	3	2012
Production Milestones: Contract Awards: Full Rate Production Award Contract Award	4	2016	4	2016

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy			DATE: February 2012
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COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
1857: *Calibration Standards*	1.394	1.365	1.856	-	1.856	1.871	1.901	1.937	1.975	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

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 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Calibration Standards	1.394	1.365	1.856	-	1.856
Articles:	0	0	0		0
FY 2011 Accomplishments:					
($.936) Continue development of calibration standards (hardware) in support of chemical and biological detection systems.					
($.250) Begin development of portable calibration standards (hardware) in support of Fleet shipboard calibration enhancements.					
($.208) Continue development of standards in support for wireless micro electrical sensors in support of next generation DD(X) ships and Smart Carriers.					
FY 2012 Plans:					
($.133) Transition a calibration standard (hardware) in support of chemical and biological detection systems.					

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604215N: *Standards Development*	PROJECT 1857: *Calibration Standards*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
($.259) Transition a couple of electro optical measurement calibration standards (hardware) to support flight safety and operations. ($.188) Transition analytical metrology (processes) in support of automated interval and uncertainty analysis. ($.167) Continue development of calibration standards (hardware) in support of chemical and biological detection systems (chemical warfare agent detection systems). ($.234) Continue development of physical and mechanical calibration standards (hardware) in support of Fleet shipboard calibration enhancements. ($.252) Continue development of electro optical standards (hardware) in support of safety of flight operations. ($.132) Continue development of analytical metrology (processes) in support of automated interval and uncertainty analysis. ***FY 2013 Base Plans:*** ($ .759) Continue to develop calibration standards (hardware) in support of physical mechanical and chemical biological detection systems. ($.321) Continue development of physical and mechanical calibration standards in support of Fleet shipboard calibration enhancements. ($.776) Continue development of standards in support for wireless micro electrical sensors in support of next generation DD(X) ships and Smart Carriers.					
Accomplishments/Planned Programs Subtotals	1.394	1.365	1.856	-	1.856

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
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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-3, RDT&E Project Cost Analysis: PB 2013 Navy		DATE: February 2012
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	WR	NSWC Corona:Corona, CA	4.181	0.700	Oct 2011	0.115	Jan 2013	-		0.115	0.000	4.996	
		Subtotal	4.181	0.700		0.115		-		0.115	0.000	4.996	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	WR	NSWC Corona:Corona, CA	1.276	0.300	Oct 2011	0.226	Oct 2012	-		0.226	0.000	1.802	
Government Engineering Support	WR	NSWC Corona:Corona, CA	2.170	0.325	Oct 2011	1.480	Oct 2012	-		1.480	0.000	3.975	
Defense Acquisition Workforce	Various	Various:Various	0.007	-		-		-		-	0.000	0.007	
Travel	WR	NSWC Corona:Corona, CA	0.064	0.040	Oct 2011	0.035	Oct 2012	-		0.035	0.000	0.139	
		Subtotal	3.517	0.665		1.741		-		1.741	0.000	5.923	

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	7.698	1.365		1.856		-		1.856	0.000	10.919	

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604215N: *Standards Development*	PROJECT 1857: *Calibration Standards*

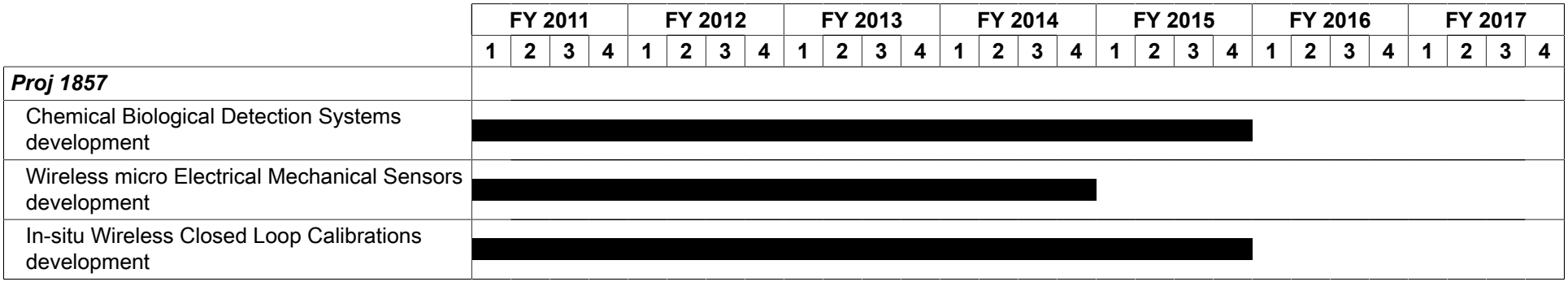

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604215N: *Standards Development*	**PROJECT** 1857: *Calibration Standards*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 1857				
Chemical Biological Detection Systems development	1	2011	4	2015
Wireless micro Electrical Mechanical Sensors development	1	2011	4	2014
In-situ Wireless Closed Loop Calibrations development	1	2011	4	2015

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604215N: *Standards Development*	PROJECT 2311: *Stores Planning and Weaponeering Module*	

COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
2311: *Stores Planning and Weaponeering Module*	12.725	12.075	12.508	-	12.508	12.417	12.624	12.726	12.971	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Project 2311, Stores Planning and Weaponeering Module: The Naval Aircraft Weaponeering Components (NAWC) 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 (N88) as a flight clearance implementation system for the F/A-18 A, A+, B, C, D, D (RC), E and F. 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 (JCA) 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 (RECCE) 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. The WASP product encompasses a multitude of Government Furnished Information (GFI) 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 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Product Development	7.393	6.597	7.026	-	7.026
Articles:	0	0	0		0
Description: Includes associated system engineering design, development, installation, integration and software development for Weapons and Stores Planning (WASP) components V1.2.4, V3.0, V3.1, V3.1.1, V3.1.2, V3.2, V3.2.1, V3.3, V3.3.1 to support F/A-18 A-F. Naval Air Warfare Center Weapons Division, Joint Software Support Activity will develop and maintain the AV-8B Weapons and Release Planning tool using $.7M in FY11, $1M in FY12, and $.3M in FY13. 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 new flight clearances and flight restrictions issued by NAVAIRSYSCOM. Provide configuration management, system administration, quality assurance,					

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604215N: *Standards Development*	PROJECT 2311: *Stores Planning and Weaponeering Module*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
documentation, metrics and software risk management for WASP. Acquire, integrate and modify numerous GFI software 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 2011 Accomplishments:*** Complete WASP V1.2.4 for FY12 release to fleet and analyze requirements and start development for WASP V3.0. $.7M funding provided to NAWCWD, JSSA for WARP product development. ***FY 2012 Plans:*** Release V1.2.4 to the fleet 1QFY12. Continue development of V3.0. Provide $1M of funding to NAWCWD, JSSA for WARP product development. ***FY 2013 Base Plans:*** Release V3.0 to the fleet by 1QFY13, and continue development of V3.1. Provide $.3M of funding to Naval Air Warfare Center Weapons Division (NAWCWD), Joint Software Support Activity (JSSA) for Weapons and Release Planning (WARP) product development.					
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 Weaponeering and Stores Planning (WASP) versions V1.2.4, V3.0, V3.1, V3.1.1, V3.1.2, V3.2, V3.2.1, V3.3, V3.3.1. Provide Joint Mission Planning System (JMPS) Mission Planning Environment (MPE) Integration test support. Provide testing and test support to ensure all (to include internally developed software, externally developed Government Furnished Information (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 (LANs) or NMCI. ***FY 2011 Accomplishments:***	2.539 0	2.669 0	2.378 0	-	2.378 0

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604215N: *Standards Development*	PROJECT 2311: *Stores Planning and Weaponeering Module*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Continue test and evaluation of WASP V 1.2.4 in order to release to fleet and analyze test requirements for WASP V3.0. ***FY 2012 Plans:*** Complete test and evaluation of WASP V3.0 in order to release to fleet in FY13. Analyze test requirements for V3.1. ***FY 2013 Base Plans:*** Complete test and evaluation of WASP V3.1 in order to release to fleet in FY14. Analyze test requirements for V3.2.					
Title: Program Management/Systems Engineering ***Articles:*** ***Description:*** Provide program management and systems engineering support, which includes requirements definition and analysis, compliance with Naval Air Systems Command (NAVAIR) 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 (FYDP). ***FY 2011 Accomplishments:*** Continue project management and systems engineering support to the WASP for future releases of WASP to the fleet. ***FY 2012 Plans:*** Continue project management and systems engineering support to the WASP for future releases of WASP to the fleet. ***FY 2013 Base Plans:*** Continue project management and systems engineering support to the WASP for future releases of WASP to the fleet.	2.793 0	2.809 0	3.104 0	-	3.104 0
Accomplishments/Planned Programs Subtotals	12.725	12.075	12.508	-	12.508

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604215N: *Standards Development*	PROJECT 2311: *Stores Planning and Weaponeering Module*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• RDTE/3858: *Air Force Mission Planning*	83.555	69.918	72.037	0.000	72.037	78.534	90.995	92.164	0.000	Continuing	Continuing

D. Acquisition Strategy

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 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-3, RDT&E Project Cost Analysis: PB 2013 Navy			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604215N: *Standards Development*	PROJECT 2311: *Stores Planning and Weaponeering Module*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Product Development (5.1,6,9 Government Furnished Information (GFI), Occupancy (OCC))	WR	Naval Air Warfare Center Aircraft Division NAWCAD:Patuxent River, MD	17.001	0.142	Nov 2011	0.090	Nov 2012	-		0.090	Continuing	Continuing	Continuing
Product Development - Safe Escape (SEAL)	Various	Various:Various	30.225	0.391	Nov 2011	-		-		-	0.000	30.616	30.616
Product Development	WR	Air Force Seek Eagle:Eglin Air Force Base (AFB), FL	0.074	0.076	Nov 2011	0.079	Nov 2012	-		0.079	Continuing	Continuing	Continuing
Primary Software Development	C/CPFF	Lockheed Martin:Marlton, NJ	5.389	5.594	Nov 2011	-		-		-	0.000	10.983	10.983
Product Development - Weapons and Release Planning (WARP)	WR	Naval Air Warfare Center Weapons Division NAWCWD:China Lake, CA	0.700	0.394	Nov 2011	0.302	Nov 2012	-		0.302	Continuing	Continuing	Continuing
Prior year cost no longer funded in Future Years Defense Program/Plan (FYDP)	Various	Various:Various	26.492	-		-		-		-	0.000	26.492	
Primary Software Development/Cost Plus Fixed Fee (CPFF)	C/CPFF	Various:Various	-	-		6.555	Nov 2012	-		6.555	0.000	6.555	6.555
		Subtotal	79.881	6.597		7.026		-		7.026			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test & Evaluation Civilian (CIV) & OCC	WR	NAWCAD:Patuxent River, MD	18.191	1.206	Nov 2011	1.050	Nov 2012	-		1.050	Continuing	Continuing	Continuing
Test & Evaluation	WR	NAWCWD:Point Mugu, CA	0.528	-		-		-		-	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604215N: *Standards Development*	PROJECT 2311: *Stores Planning and Weaponeering Module*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test & Evaluation MANTECH & WYLE	C/CPFF	Various:Various	8.250	1.463	Nov 2011	1.328	Nov 2012	-		1.328	0.000	11.041	11.041
Prior Year costs no longer funded in Future Years Defense Program/Plan (FYDP)	Various	Various:Various	0.377	-		-		-		-	0.000	0.377	
		Subtotal	27.346	2.669		2.378		-		2.378			

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support Tecelote, shared costs, Materials	WR	Naval Air Warfare Center Aircraft Division NAWCAD:Patuxent River, MD	8.608	0.729	Nov 2011	0.718	Nov 2012	-		0.718	Continuing	Continuing	Continuing
Government Engineering Support Civilian (CIV) Sys Eng	WR	NAWCAD:Patuxent River, MD	5.617	0.631	Nov 2011	0.617	Nov 2012	-		0.617	Continuing	Continuing	Continuing
Program Management Support Brandes & MANTECH	Various	Various:Various	0.659	0.636	Nov 2011	0.513	Nov 2012	-		0.513	0.000	1.808	1.808
Government Engineering Support	WR	Naval Air Warfare Center Weapons Division NAWCWD:China Lake, CA	1.115	0.018	Nov 2011	0.018	Nov 2012	-		0.018	Continuing	Continuing	Continuing
Travel	WR	NAWCAD:Patuxent River, MD	1.261	0.030	Nov 2011	0.015	Nov 2012	-		0.015	Continuing	Continuing	Continuing
Systems Engineering Support	Various	Various:Various	0.684	0.765	Nov 2011	1.023	Nov 2012	-		1.023	0.000	2.472	2.472
Prior year costs no longer funded in FYDP	Various	Various:Various	0.663	-		-		-		-	0.000	0.663	

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604215N: *Standards Development*	PROJECT 2311: *Stores Planning and Weaponeering Module*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Govt Engineering Support: Mission Planning Environment (MPE) Integration	TBD	NAWCWD:Point Mugu, CA	-	-		0.200	Nov 2012	-		0.200	0.000	0.200	
		Subtotal	18.607	2.809		3.104		-		3.104			

	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	125.834	12.075		12.508		-		12.508			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604215N: *Standards Development*	**PROJECT** 2311: *Stores Planning and Weaponeering Module*

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604215N: *Standards Development*	PROJECT 2311: *Stores Planning and Weaponeering Module*

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604215N: *Standards Development*	**PROJECT** 2311: *Stores Planning and Weaponeering Module*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Stores Planning and Weaponeering Module				
Acquisition Milestones: WASP V1.2.4: Test Readiness Review	2	2011	2	2011
Acquisition Milestones: WASP V1.2.4: Technical Information Review Board	4	2011	4	2011
Acquisition Milestones: WASP V1.2.4: Functional Qualification Test	4	2011	4	2011
Acquisition Milestones: WASP V3.0 Phase II (F/A-18A/B/C/D/E/F): Software Requirements Review	2	2011	2	2011
Acquisition Milestones: WASP V3.0 Phase II (F/A-18A/B/C/D/E/F): Preliminary Design Review	3	2011	3	2011
Acquisition Milestones: WASP V3.0 Phase II (F/A-18A/B/C/D/E/F): Critical Design Review	4	2011	4	2011
Acquisition Milestones: WASP V3.0 Phase II (F/A-18A/B/C/D/E/F): Test Readiness Review	2	2012	2	2012
Acquisition Milestones: WASP V3.0 Phase II (F/A-18A/B/C/D/E/F): Technical Information Review Board	4	2012	4	2012
Acquisition Milestones: WASP V3.0 Phase II (F/A-18A/B/C/D/E/F): Functional Qualification Test	4	2012	4	2012
Acquisition Milestones: WASP V3.1 (F/A-18A/B/C/D/E/F): Software Requirements Review	3	2012	3	2012
Acquisition Milestones: WASP V3.1 (F/A-18A/B/C/D/E/F): Preliminary Design Review	4	2012	4	2012
Acquisition Milestones: WASP V3.1 (F/A-18A/B/C/D/E/F): Critical Design Review	4	2012	4	2012
Acquisition Milestones: WASP V3.1 (F/A-18A/B/C/D/E/F): Test Readiness Review	3	2013	3	2013
Acquisition Milestones: WASP V3.1 (F/A-18A/B/C/D/E/F): Technical Information Review Board	1	2014	1	2014
Acquisition Milestones: WASP V3.1 (F/A-18A/B/C/D/E/F): Functional Qualification Test	1	2014	1	2014

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604215N: *Standards Development*	PROJECT 2311: *Stores Planning and Weaponeering Module*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Acquisition Milestones: WASP V3.2 (F/A-18A/B/C/D/E/F): Software Requirements Review	3	2014	3	2014
Acquisition Milestones: WASP V3.2 (F/A-18A/B/C/D/E/F): Preliminary Design Review	3	2014	3	2014
Acquisition Milestones: WASP V3.2 (F/A-18A/B/C/D/E/F): Critical Design Review	4	2014	4	2014
Acquisition Milestones: WASP V3.2 (F/A-18A/B/C/D/E/F): Test Readiness Review	2	2015	2	2015
Acquisition Milestones: WASP V3.2 (F/A-18A/B/C/D/E/F): Technical Information Review Board	4	2015	4	2015
Acquisition Milestones: WASP V3.2 (F/A-18A/B/C/D/E/F): Functional Qualification Test	4	2015	4	2015
Acquisition Milestones: WASP V3.3 (F/A-18A/B/C/D/E/F): Software Requirements Review	1	2016	1	2016
Acquisition Milestones: WASP V3.3 (F/A-18A/B/C/D/E/F): Preliminary Design Review	1	2016	1	2016
Acquisition Milestones: WASP V3.3 (F/A-18A/B/C/D/E/F): Critical Design Review	2	2016	2	2016
Acquisition Milestones: WASP V3.3 (F/A-18A/B/C/D/E/F): Test Readiness Review	4	2016	4	2016
Acquisition Milestones: WASP V3.3 (F/A-18A/B/C/D/E/F): Technical Information Review Board	2	2017	2	2017
Acquisition Milestones: WASP V3.3 (F/A-18A/B/C/D/E/F): Functional Qualification Test	2	2017	2	2017
Acquisition Milestones: WASP V3.4 (F/A-18A/B/C/D/E/F): Software Requirements Review	3	2017	3	2017
Acquisition Milestones: WASP V3.4 (F/A-18A/B/C/D/E/F): Preliminary Design Review	4	2017	4	2017
Acquisition Milestones: WASP V3.4 (F/A-18A/B/C/D/E/F): Critical Design Review	4	2017	4	2017
Test & Evaluation Milestones: WASP V1.2.4 (F/A-18A/B/C/D/F): Test and Evaluation	2	2011	4	2011
Test & Evaluation Milestones: WASP V3.0 Phase II (F/A-18A/B/C/D/E/F release to Fleet (Rearchitecture) SRR to: Test and Evaluation	2	2012	3	2012
Test & Evaluation Milestones: WASP V3.1 (F/A-18A/B/C/D/E/F): Test and Evaluation	3	2013	4	2013
Test & Evaluation Milestones: WASP V3.2 (F/A-18A/B/C/D/E/F): Test and Evaluation	2	2015	3	2015
Test & Evaluation Milestones: WASP V3.3 (F/A-18A/B/C/D/E/F): Test and Evaluation	4	2016	2	2017

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604215N: *Standards Development*	PROJECT 2311: *Stores Planning and Weaponeering Module*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Production Milestones: WASP V1.2.4 (F/A-18A/B/C/D/E/F) Initial Operational Capability (IOC):	1	2012	1	2012
Production Milestones: WASP V3.0 Release (F/A-18A/B/C/D/E/F) Initial Operational Capability (IOC):	2	2013	2	2013
Production Milestones: WASP V3.1 Release (F/A-18A/B/C/D/E/F) IOC:	2	2014	2	2014
Production Milestones: WASP V3.2 (F/A-18A/B/C/D/E/F) IOC:	2	2016	2	2016
Production Milestones: WASP V3.3 (F/A-18A/B/C/D/E/F) IOC:	3	2017	3	2017

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604215N: *Standards Development*	PROJECT 2312: *Common Helicopters*	

COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
2312: *Common Helicopters*	0.894	0.889	0.879	-	0.879	0.565	0.560	0.582	0.671	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

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 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Common Helicopters	0.894	0.889	0.879	-	0.879
Articles:	0	0	0		0
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.					
FY 2011 Accomplishments: Develop and deliver two builds of legacy Common Mission Data Loader (CMDL) Unique Planning Component (UPC) Development Test (DT), develop and deliver CMDL .net UPC to DT, and develop and deliver three helicopter Weight and Power Calculator (WPC) modules to DT.					
FY 2012 Plans: Develop CMDL and Weapons Employment Zone Overlay Tool (WEZOT) compatibility with Windows 7, FW 1.2, 1.3 and 1.4 to DT.					
FY 2013 Base Plans: Complete CMDL and WEZOT compatibility with Windows 7, FW 1.2, 1.3 and 1.4.					
Accomplishments/Planned Programs Subtotals	0.894	0.889	0.879	-	0.879

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604215N: *Standards Development*	PROJECT 2312: *Common Helicopters*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• RDTE/3858: *Air Force Mission Planning Systems*	83.555	69.918	72.037	0.000	72.037	78.534	90.995	92.164	0.000	Continuing	Continuing

D. Acquisition Strategy

Not Applicable.

E. Performance Metrics

Export Mission Data to Data Transfer Device (DTD): 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.