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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604215N: <i>Standards Development</i>							
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	62.081	45.667	51.191	-	51.191	67.496	92.587	91.274	61.651	Continuing	Continuing
0572: <i>JT Service/NV Std Avionics CP/SB</i>	41.480	30.961	36.862	-	36.862	52.127	77.075	75.446	45.647	Continuing	Continuing
1857: <i>Calibration Standards</i>	1.910	1.401	1.365	-	1.365	1.877	1.908	1.950	1.992	Continuing	Continuing
2311: <i>Stores Planning and Weaponing Module</i>	11.986	12.377	12.075	-	12.075	12.589	12.686	12.939	13.064	Continuing	Continuing
2312: <i>Common Helicopters</i>	0.929	0.928	0.889	-	0.889	0.903	0.918	0.939	0.948	Continuing	Continuing
9999: <i>Congressional Adds</i>	5.776	-	-	-	-	-	-	-	-	0.000	5.776

Note

FY12-FY16 Avionics Component Improvement Program (AvCIP) - Funding has been moved from PE 0702239N, Project Unit 3170.

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 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	59.044	45.667	57.832	-	57.832
Current President's Budget	62.081	45.667	51.191	-	51.191
Total Adjustments	3.037	-	-6.641	-	-6.641
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	4.710	-			
• SBIR/STTR Transfer	-1.292	-			
• Program Adjustments	-	-	-6.002	-	-6.002
• Section 219 Reprogramming	-0.358	-	-	-	-
• Rate/Misc Adjustments	-	-	-0.639	-	-0.639
• Congressional General Reductions Adjustments	-0.023	-	-	-	-

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 9999: *Congressional Adds*

Congressional Add: *Measurement Standards Research and Development*

Congressional Add Subtotals for Project: 9999

Congressional Add Totals for all Projects

	FY 2010	FY 2011
	5.776	-
	5.776	-
	5.776	-

Change Summary Explanation

Technical: Not applicable.

Schedule:

0572:

Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM) - P-8 Integration/Certification moved from 3Q10-2Q11 to 1Q11-3Q11 based on the P-8 Milestone C (MS C) moving from 2Q10 to 4Q10.

Tactical Communication (TACCOM) - TACCOM Schedule adjusted for Issue 50076 POM12 Offset R&D 5% Overhead Reduction.

Ground Proximity Warning System/Terrain Awareness Warning System (GPWS/TAWS) - MV-22 GPWS efforts were cancelled per OPNAV direction in 2010.

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<p>MFOQA - Schedule changes reflect the rebaselined program. Program Management Review to Milestone Decision Authority occurred on 20 May 10 and Acquisition Program Baseline signature will follow.</p> <p>COLLABORATIVE WARFARE (CW) - The Program Element (PE) was moved from N88 to N2/N6F in FY09 prior to program start. New direction was given to pursue Joint Capability Integration Development System activities and supporting experimentation/demonstration in lieu of the Collaborative Warfare process. In addition, in April 2010, the funding for FY12 through the PE end was marked and, thus, the efforts had to be re-scoped due to resource limitations.</p> <p>AvCIP - Program transferred from PE 0702239N, PU 3170. Schedule provided.</p> <p>CASP - FY11 collision avoidance requirements generation, initiation of design, integration, certification, and NSA IA activities. FY12 and out funding and activities transferred to CNS/ATM, GPWS/TAWS, Airborne Collision Avoidance System (ACAS), and ADDS to properly align budgets and requirements with new and existing programmatic efforts.</p> <p>ADDS - FY12 new start resulting from realignment of CASP activities and initiation of new Acquisition Category program to develop and provide data management enabling H/W and S/W not covered by existing programs. TAWS activities realigned and moved to GPWS/TAWS program.</p> <p>1857: Not Applicable.</p> <p>2311: Acquisition Milestone Changes:</p> <p>Due to a delay in contract award from January 2010 to March 2010 WASP Version 1.2.4 was adjusted accordingly:</p> <p>V.1.2.4 Software Requirements Review (SRR) from 2Q FY10 to 3Q FY10, V.1.2.4 Preliminary Design Review (PDR) from 3Q FY10 to 4Q FY10, V.1.2.4 Critical Design Review (CDR) From 3Q to 4Q FY10, V.1.2.4 Test Readiness Review (TRR) from 1Q FY11 to 2Q FY11</p> <p>Due to a change in contract vehicles the WASP program will be able to award the FY11 contract for Version 3.0 in the first quarter of FY11. The schedule has been realigned to reflect contract award and release dates of Version 3.0 and subsequent versions are adjusted accordingly to accommodate the earlier awards and adjustment of version releases and testing.</p> <p>WASP V3.0 Phase II Technical Information Review Board (TIRB) from 2Q FY13 to 4Q FY12, V3.0 Phase II Functional Qualification Test (FQT) from 2QFY13 to 4QFY12, V3.0; Phase II Test and Evaluation from 4QFY12-1QFY13 to 3QFY12-4QFY12; V3.0 Phase II Release Initial Operational Capability (IOC) from 3QFY13 to 2QFY13.</p> <p>WASP V3.1 SRR from 3Q FY13 to 3Q FY 12, V3.1 PDR, from 4Q FY13 to 4Q FY12, V3.1 CDR from 1QFY14 to 1QY13, V3.1 TRR from 3QFY14 to 3QFY13, P V3.1 TIRB from 2QFY15 to 4QFY13, V3.1 FQT from 2QFY15 to 4QFY13; V3.1 Phase II Test and Evaluation from 4QFY14-1QFY15 to 3QFY13-4QFY13; V3.1 IOC from 1QFY15 to 2QFY14.</p> <p>WASP V3.2 SRR from 4Q FY14 to 3QFY13, V3.2 PDR, from 1Q FY15 to 4Q FY13, V3.2 CDR from 2QFY15 to 1QY14, V3.2 TRR from 4QFY15 to 3QFY14, V3.2 TIRB added 4QFY14, V3.2 FQT added 4QFY14; V3.2 Test and Evaluation from 4QFY15 to 3QFY14-4QFY14; V3.2 IOC added 2QFY15.</p>		

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WASP V3.3 SRR added 3QFY14, V3.3 PDR, added 4Q FY14, V3.3 CDR added 1QFY15, V3.3 TRR added 3QFY15, V3.3 TIRB added 4QFY15, V3.3 FQT added 4QFY15; V3.3 Test and Evaluation added 3QFY15-4QFY15; V3.3 IOC added 2QFY16.

WASP V3.4 SRR added 3QFY15, V3.4 PDR, added 4Q FY15, V3.4 CDR added 1QFY16, V3.4 TRR added 3QFY16, V3.4 TIRB added 4QFY16, V3.4 FQT added 4QFY16; V3.4 Test and Evaluation added 2QFY16-3QFY16.

2312: Not Applicable.

9999: Not Applicable.

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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
0572: <i>JT Service/NV Std Avionics CP/SB</i>	41.480	30.961	36.862	-	36.862	52.127	77.075	75.446	45.647	Continuing	Continuing
Quantity of RDT&E Articles	0	0	1	0	1	0	0	0	0		

Note

The Collision Avoidance Safety Program (CASP) Program, which begins 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.
 Military Flight Operational Quality Assurance (MFOQA) RDT&E Article (1) for first F/A-18 Squadron.

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), MFOQA, Collaborative Warfare (CW), AvCIP, CASP, ADDS and 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 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Mission Computer/Mission Systems Upgrade (AMCD)	4.140	0.500	-	-	-
Articles:	0	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 2010 Accomplishments: Efforts for Open Systems Processor upgrade activity will focus on requirements analysis of the F/A-18E/F/G platforms in support of the Super Hornet Flight Plan increments III and IV. Conducted Trade Studies for the Fiber Channel Network Switch and Network Processor.					
FY 2011 Plans:					

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Complete 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) <p align="right">Articles:</p> <p>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, VH-71A, JSF, CH-53K, and Unmanned Air Systems. Capabilities include Mode S, 8.33kHz, RVSM, RNP/RNAV and ADS-B, and other civil and military capabilities.</p> <p>FY 2010 Accomplishments: Completed E-2D Integration/Certification of Mode S & 8.33kHz and completed RNP/RNAV integration and certification efforts into the E-2D.</p> <p>FY 2011 Plans: Initiate P-8A Integration/Certification of RVSM & RNP RNAV capability.</p> <p>FY 2012 Base Plans: Integrate ADS-B into MH-53E concurrent with Cockpit Upgrade.</p>			0.150 0	0.150 0	4.660 0	-	4.660 0
Title: Provide Support to Tri-Service/Joint Programs <p align="right">Articles:</p> <p>FY 2010 Accomplishments: Joint Services Review Committee (JSRC) - 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 Core Avionics Master Plan</p>			1.037 0	1.060 0	1.000 0	-	1.000 0

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
<p>(CAMP). Supported and participated in Naval Aviation Requirements (NARG) panels, Operational Advisory Groups (OAG), and HFQMB.</p> <p>FY 2011 Plans: 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.</p> <p>FY 2012 Base Plans: 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.</p>					
Title: Develop Evolutionary Communication Systems (TACCOM)					
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, Beyond Line-of-Sight, Mobile Users Objective System (MUOS), 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 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 2010 Accomplishments:					
	9.633	3.681	3.601	-	3.601
	0	0	0		0

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
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<p>Received Final Gen5 certification from National Security Agency (NSA) (Aug 2010). Provided Test Assets to Platform Program Offices for Systems Integration Lab (SIL) and regression testing. Continued to develop ancillary equipment in support of Gen5 integration.</p>					
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<p>FY 2011 Plans: Receive Joint Interoperability Testing Center (JITC) certification of the RT-1939(C). Receive approval for Full Rate Production. Continue development of the Tactical Secure Voice (TSV) and JPALS for inclusion in a Gen5 Receiver Transmitter. Assist platforms with Gen5 SIL and aircraft regression testing. Compile test results into source data document for future Gen5 testing.</p>					
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<p>FY 2012 Base Plans: Continue development of the TSV and JPALS. Perform test and evaluation of Version 003/004 software for inclusion into Gen5.</p>					
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<p>Title: Develop Ground Terrain Warning Capability (GPWS/TAWS)</p>	5.512	5.419	1.335	-	1.335
Articles:	0	0	0		0

<p>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.</p>					
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<p>FY 2010 Accomplishments: Completed H-1 GPWS development and delivered to the integrator. Supported integration and lab testing.</p>					
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<p>FY 2011 Plans: Deliver GPWS software load to the fleet for the H-1 and H-60 platforms.</p>					
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<p>FY 2012 Base Plans:</p>					
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
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Support fielding of H-1 GPWS in platform Software Configuration Set 6.0 fleet release. Initiate TAWS development for H-60.

Title: Develop MFOQA Capability	16.025	12.600	12.709	-	12.709
Articles:	0	0	1		1

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 2010 Accomplishments:
Phase 1 develop software for test.

FY 2011 Plans:
Phase 1 conduct delta design review and conduct DT-B2 and DT-B3.

FY 2012 Base Plans:
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.

Title: Collaborative Warfare (CW)	4.983	4.051	0.478	-	0.478
Articles:	0	0	0		0

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

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
<p>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.</p> <p>FY 2010 Accomplishments: The NEXT CBA was approved and kicked-off. The Trident Warrior 2011 demonstration is in the planning stages and on schedule. The technical study contract was awarded to L3 and the effort is underway. The MS&A Study was completed for the Counter Air mission area and the results are currently being disseminated.</p> <p>FY 2011 Plans: Complete NEXT CBA. Coordinate execution of Trident Warrior 2011 Netted Sensors demonstration. Complete Netted Sponsor/Sensor Fusion technical study. Incorporating technical study results, develop Netted sensors architectures and complete/update netted sensors Concept of Operations (CONOPS).</p> <p>FY 2012 Base Plans: Complete Netted Sponsor/Sensor Fusion technical study. Incorporating technical study results, develop Netted sensors architectures and complete/update netted sensors CONOPS.</p>					
<p>Title: CASP</p> <p align="right">Articles:</p> <p>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.</p> <p>FY 2011 Plans: Initiate documentation, development, and NSA certification for capability enabling hardware and software components.</p>					
<p>Title: AvCIP</p> <p align="right">Articles:</p>					
	-	3.500 0	-	-	-
	-	-	2.000 0	-	2.000 0

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>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.</p> <p>FY 2012 Base 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.</p> <p>NOTE: FY12-FY16 AvCIP funding has been moved from PE 0702239N, Project Unit 3170.</p>					
<p>Title: ADDS</p> <p align="right">Articles:</p> <p>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, collision avoidance, and mission planning.</p> <p>FY 2012 Base Plans:</p>	-	-	11.079 0	-	11.079 0

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 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.					
Accomplishments/Planned Programs Subtotals	41.480	30.961	36.862	-	36.862

C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• APN/05770: <i>Common Avionics</i>	145.768	115.220	147.093	13.467	160.560	78.021	120.141	140.000	168.980	1,676.993	4,456.572

D. Acquisition Strategy

AMCD sole-source cost contract for EMD study activities in support of the V-22 Mission Systems Upgrade. 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 the existing government software product team. The software modules will be integrated into the platform host computer by the platform's prime integrator. 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. 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. GPWS/TAWS software modules will be developed by the existing Government software product team and implemented via sole-source cost contract. The software modules will be integrated into the platform host computer by the platform's prime integrator using platform contract vehicles. 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 (i.e., Snapshot, Naval Aviation Logistics Command/Management Information System, Naval Aviation Logistics Data Analysis, Logistics Management Data System, Visibility and Management of Operation and Support Cost). Demonstrate Fleet operation/sustainment cost avoidances will be coordinated with N43 Flying Hour Program. Modification solutions include modular hardware, software and material upgrades. 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 DT/operational testing (OT). ADDS will conduct

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
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<p>a full and open competition to develop and procure enabling hardware and software. ACAS 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.</p>		
<p>E. Performance Metrics</p> <p>AMCD - Successful product redesign of 3 Circuit Card Assemblies of the Advanced Mission Computer (AMC) to sustain AMC production capability through current Program of Record requirements of the Navy's F/A-18E/F and EA-18G aircraft delivery schedules. Specific milestones include: Successful Production Readiness Review with no Priority 1 or 2 problem reports, Function Configuration Audit, and Production Decision.</p> <p>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.</p> <p>CNS/ATM - Successfully complete DT/OT and achieve platform certifications.</p> <p>TACCOM - Successfully pass Test Readiness Review and First Article Software Verification Test.</p> <p>GPWS/TAWS - Successfully complete flight test and deliver product on schedule.</p> <p>MFOQA - Successfully complete Design Review capturing revised requirements, and successfully complete MS C on schedule.</p> <p>CW - Identify collaborative warfighting capability gaps and ensure the development of the most intelligent, cost effective, and timely solutions to fill those gaps.</p> <p>CASP - Initiate requirements development, design, integration, test and NSA Information Assurance.</p> <p>AvCIP - Successful selection establishment, and execution of AVCIP projects, with benefits tracking.</p> <p>ADDS - Achieve program acquisition milestones on cost and schedule meeting platform requirements.</p> <p>ACAS SYSTEM - Reduce the number of mid-air collisions.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604215N: <i>Standards Development</i>	PROJECT 0572: <i>JT Service/NV Std Avionics CP/SB</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Dev MFOQA	C/CPFF	Mantech:Fairfax, VA	20.760	6.725	Nov 2010	3.419	Dec 2011	-		3.419	14.110	45.014	45.014
Primary Hardware Dev	C/FFP	BGI:Dallas, TX	3.490	0.491	Jan 2011	1.671	Feb 2012	-		1.671	12.414	18.066	18.066
Primary Hardware Dev	SS/T&M	DCS Corporation:Alexandria, VA	6.264	1.185	Nov 2010	0.100	Nov 2011	-		0.100	0.000	7.549	7.549
Primary Hardware Dev ADDS	TBD	TBD:TBD	-	-		7.654	Jan 2012	-		7.654	Continuing	Continuing	Continuing
Primary Hardware Dev	Various	Various:Various	55.437	1.373	Mar 2011	1.415	Mar 2012	-		1.415	Continuing	Continuing	Continuing
Aircraft Integration	SS/FFP	Rockwell Collins:Cedar Rapids, IA	57.183	0.170	Nov 2010	-		-		-	0.000	57.353	57.353
Aircraft Integration	WR	NAWCWD:China Lake, CA	7.036	0.387	Nov 2010	-		-		-	Continuing	Continuing	Continuing
Aircraft Integration	Various	Various:Various	40.180	1.006	Mar 2011	2.613	Mar 2012	-		2.613	Continuing	Continuing	Continuing
Systems Engineering	WR	NAWCAD:Patuxent River, MD	21.640	1.113	Mar 2011	2.785	Nov 2011	-		2.785	Continuing	Continuing	Continuing
Systems Engineering	Various	Various:Various	30.043	3.278	Mar 2011	1.836	Mar 2012	-		1.836	Continuing	Continuing	Continuing
Prior year costs no longer funded in FYDP	Various	Various:Various	287.758	-		-		-		-	0.000	287.758	
Subtotal			529.791	15.728		21.493		-		21.493			

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	Various	Various:Various	1.954	0.307	Mar 2011	0.253	Mar 2012	-		0.253	Continuing	Continuing	Continuing
Software Development	Various	Various:Various	1.975	-		0.770	Apr 2012	-		0.770	0.000	2.745	
Integrated Logistics Support	Various	Various:Various	12.351	1.239	Mar 2011	1.677	Mar 2012	-		1.677	Continuing	Continuing	Continuing
Studies and Analysis	Various	Various:Various	16.156	4.116	Apr 2011	-		-		-	Continuing	Continuing	Continuing
Prior year costs no longer funded in FYDP	Various	Various:Various	25.371	-		-		-		-	0.000	25.371	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604215N: <i>Standards Development</i>	PROJECT 0572: <i>JT Service/NV Std Avionics CP/SB</i>
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Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			57.807	5.662		2.700		-		2.700			

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test and Evaluation	WR	NAWCAD:Patuxent River, MD	6.765	1.066	Feb 2011	1.650	Jan 2012	-		1.650	Continuing	Continuing	Continuing
Prior year costs no longer funded in FYDP	Various	Various:Various	39.111	-		-		-		-	0.000	39.111	
Subtotal			45.876	1.066		1.650		-		1.650			

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	Various	Various:Various	49.499	2.983	Feb 2011	4.631	Feb 2012	-		4.631	Continuing	Continuing	Continuing
Government Engineering Support	WR	NAWCAD:Patuxent River, MD	10.867	2.716	Feb 2011	2.543	Mar 2012	-		2.543	Continuing	Continuing	Continuing
Program Management Support	Various	Various:Various	8.626	0.302	Dec 2010	0.055	Jan 2012	-		0.055	0.000	8.983	
Program Management Support	WR	NAWCAD:Patuxent River, MD	12.567	2.394	Feb 2011	3.612	Mar 2012	-		3.612	Continuing	Continuing	Continuing
Travel	WR	NAVAIR:Patuxent River, MD	0.904	0.110	Oct 2010	0.178	Oct 2011	-		0.178	Continuing	Continuing	Continuing
Prior year costs no longer funded in FYDP	Various	Various:Various	12.608	-		-		-		-	0.000	12.608	
Subtotal			95.071	8.505		11.019		-		11.019			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy							DATE: February 2011		
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	Total Prior Years Cost	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals	728.545	30.961	36.862	-	36.862				

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604215N: <i>Standards Development</i>	PROJECT 0572: <i>JT Service/NV Std Avionics CP/SB</i>

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
ADVANCED MISSION COMPUTERS AND DISPLAYS (AMCD)				
Acquisition Milestones: FCNS Network Processor Risk Reduction T/S	1	2010	1	2011
Acquisition Milestones: OSP3e Roadmap Risk Reduction T/S	1	2010	1	2011
COMMUNICATION, NAVIGATION, SURVEILLANCE/AIR TRAFFIC MGMT (CNS/ATM)				
Test and Evaluation: E-2D Integration/Certification Mode S , 8.33 KHZ	1	2010	2	2010
Test and Evaluation: E-2D Integration/Certification RNP RNAV	3	2010	4	2010
Test and Evaluation: P-8 Integration/Certification Reduced Vertical Separation Minimums, Required Navigation Performance (RNP RNAV)	1	2011	3	2011
Test and Evaluation: MH-53E Automatic Dependent Surveillance-Broadcast Integration/Certification	1	2012	1	2013
TACTICAL COMMUNICATIONS (TACCOM)				
Systems Development: GEN 5 RT-1939 Development	1	2010	4	2010
Systems Development: GEN 5 NSA/Information Assurance (IA)	1	2010	4	2010
Systems Development: GEN 5 Hardware Development for SATCOM P3I	1	2010	1	2011
Systems Development: GEN 5 Integrated Waveform Satellite Communications (SATCOM) S/W Development	1	2010	1	2012
Systems Development: GEN 5 Crypto Algorithm Assessment/Development	1	2010	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	2016
Test and Evaluation: GEN 5 First Article Test & Software (S/W) Verification	3	2010	3	2010
Test and Evaluation: GEN 5 National Security Agency Certification	4	2010	4	2010
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

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
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
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
GROUND PROXIMITY WARNING SYSTEM/TERRAIN AWARENESS WARNING SYSTEM (GPWS/TAWS)				
Acquisition Milestones: Milestones: H-60 GPWS IOC	3	2011	3	2011
Acquisition Milestones: Milestones: H-1 GPWS IOC	3	2011	3	2011
Acquisition Milestones: Milestones: H-60 TAWS IOC	3	2016	3	2016
Systems Development: H-1 Government S/W Development	1	2010	3	2010
Systems Development: H-60 TAWS Obstacles Government Software Development	1	2012	2	2014
Test and Evaluation: Developmental Testing: H-1 Developmental Testing (DT)	1	2011	1	2011
Test and Evaluation: Developmental Testing: H-60 TAWS Obstacles DT	3	2014	1	2015
Test and Evaluation: Operational Testing: H-1 Operational Testing (OT)	2	2011	2	2011
Test and Evaluation: Operational Testing: H-60 TAWS Obstacles OT	2	2016	3	2016
MILITARY FLIGHT OPERATION QUALITY ASSURANCE (MFOQA)				
Acquisition Milestones: Milestones: Milestone C (MS C)	1	2012	1	2012
Acquisition Milestones: Milestones: IOC	1	2012	1	2012
Acquisition Milestones: Milestones: MH-60R/S & CH-53E Fielding Decision	2	2014	2	2014
Systems Development: Software Development: F/A-18 Software Rework	2	2010	1	2011

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Systems Development: Software Development: MH-60R/S & CH-53E Requirements Development	1	2012	2	2012
Systems Development: Software Development: MH-60R/S & CH-53E Systems Integration	3	2012	3	2013
Systems Development: Reviews: F/A-18 Delta Design Review	1	2011	1	2011
Systems Development: Flight Visualization and Data Analysis (FVDA) S/W Modules: Flight Visualization and Data Analysis (FVDA) S/W Modules OPT2	1	2010	1	2010
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: Flight Visualization and Data Analysis (FVDA) S/W Modules: FVDA S/W Modules OPT1	1	2014	1	2014
Systems Development: Product Team: Product Team OPT3	1	2010	1	2010
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
Systems Development: Product Team: Product Team OPT1	1	2013	1	2013
Systems Development: Product Team: Product Team OPT2	1	2014	1	2014
Test and Evaluation: F/A-18 Testing: F/A-18 DT-B1	1	2010	1	2010
Test and Evaluation: F/A-18 Testing: F/A-18 DT-B2	2	2011	3	2011
Test and Evaluation: F/A-18 Testing: F/A-18 DT-B3	4	2011	1	2012
Test and Evaluation: Reviews: F/A-18 Test Readiness Review (TRR)1	1	2011	1	2011
Test and Evaluation: Reviews: F/A-18 TRR2	3	2011	3	2011
Test and Evaluation: MH-53R/S & CH-53E Testing: MH-60R/S & CH-53E DT-D1	4	2013	2	2014

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Test and Evaluation: Reviews: MH-60R/S & CH-53E TRR	3	2013	3	2013
Production Milestones: Production Fielding: F/A-18 Fielding	1	2012	4	2015
Production Milestones: Production Fielding: MH-60R/S & CH-53E Fielding	3	2014	4	2016
Production Milestones: F/A-18: 1 Squadron R&D/ 7 Squadrons APN	1	2012	4	2012
Production Milestones: F/A-18: 16 Squadrons APN	1	2013	4	2013
Production Milestones: F/A-18: 19 Squadrons APN	1	2014	4	2014
Production Milestones: F/A-18: 21 Squadrons APN	1	2015	4	2015
Production Milestones: H-60R/S: 1 Squadron R&D	1	2014	4	2014
Production Milestones: H-60R/S: 6 Squadrons APN	1	2015	4	2015
Production Milestones: H-60R/S: 19 Squadrons APN	1	2016	4	2016
Production Milestones: CH-53E: 1 Squadron R&D	1	2014	4	2014
Production Milestones: CH-53E: 5 Squadrons APN 1	1	2015	4	2015
Production Milestones: CH-53E: 5 Squadrons APN 2	1	2016	4	2016
COLLABORATIVE WARFARE (CW)				
Acquisition Milestones: JCIDS Activities: Joint Capability Integration Development System Activities	2	2010	1	2011
Acquisition Milestones: Netted Sensors CONOPS, Standards and Architectures/ Requirements Development: Netted Sensors CONOPS, Standards, and Architectures/ Requirements Development	2	2010	4	2016
Acquisition Milestones: Netted Sensors Demonstrations: Netted Sensors Demonstrations	3	2010	4	2011
Acquisition Milestones: Capabilities-Based Assessment: Capabilities-Based Assessment	1	2011	1	2011
Systems Development: Experimentation: TRIDENT WARRIOR 11	3	2011	3	2011
AVIONICS COMPONENT IMPROVEMENT PROGRAM (AVCIP)				

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Acquisition Milestones: Funding Allocation: -Funding Allocation	1	2012	1	2012
Acquisition Milestones: Funding Allocation: -Funding Allocation1	1	2013	1	2013
Acquisition Milestones: Funding Allocation: -Funding Allocation2	1	2014	1	2014
Acquisition Milestones: Funding Allocation: -Funding Allocation3	1	2015	1	2015
Acquisition Milestones: Funding Allocation: -Funding Allocation4	1	2016	1	2016
Acquisition Milestones: Candidate Collection: -Candidate Collection	1	2012	2	2012
Acquisition Milestones: Candidate Collection: -Candidate Collection1	1	2013	2	2013
Acquisition Milestones: Candidate Collection: -Candidate Collection2	1	2014	2	2014
Acquisition Milestones: Candidate Collection: -Candidate Collection3	1	2015	2	2015
Acquisition Milestones: Candidate Collection: -Candidate Collection4	1	2016	2	2016
Acquisition Milestones: Candidate Evaluation: -Candidate Evaluation	2	2012	3	2012
Acquisition Milestones: Candidate Evaluation: -Candidate Evaluation1	2	2013	3	2013
Acquisition Milestones: Candidate Evaluation: -Candidate Evaluation2	2	2014	3	2014
Acquisition Milestones: Candidate Evaluation: -Candidate Evaluation3	2	2015	3	2015
Acquisition Milestones: Candidate Evaluation: -Candidate Evaluation4	2	2016	3	2016
Acquisition Milestones: Candidate Prioritization and Selection: -Candidate Prioritization and Selection	3	2012	3	2012
Acquisition Milestones: Candidate Prioritization and Selection: -Candidate Prioritization and Selection1	3	2013	3	2013
Acquisition Milestones: Candidate Prioritization and Selection: -Candidate Prioritization and Selection2	3	2014	3	2014
Acquisition Milestones: Candidate Prioritization and Selection: -Candidate Prioritization and Selection3	3	2015	3	2015
Acquisition Milestones: Candidate Prioritization and Selection: -Candidate Prioritization and Selection4	3	2016	3	2016

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604215N: <i>Standards Development</i>	PROJECT 0572: <i>JT Service/NV Std Avionics CP/SB</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Acquisition Milestones: Candidate Endorsement: -Candidate Endorsement	3	2012	3	2012
Acquisition Milestones: Candidate Endorsement: -Candidate Endorsement1	3	2013	3	2013
Acquisition Milestones: Candidate Endorsement: -Candidate Endorsement2	3	2014	3	2014
Acquisition Milestones: Candidate Endorsement: -Candidate Endorsement3	3	2015	3	2015
Acquisition Milestones: Candidate Endorsement: -Candidate Endorsement4	3	2016	3	2016
Acquisition Milestones: Contract Establishment: -Contract Establishment	3	2012	4	2012
Acquisition Milestones: Contract Establishment: -Contract Establishment1	3	2013	4	2013
Acquisition Milestones: Contract Establishment: -Contract Establishment2	3	2014	4	2014
Acquisition Milestones: Contract Establishment: -Contract Establishment3	3	2015	4	2015
Acquisition Milestones: Contract Establishment: -Contract Establishment4	3	2016	4	2016
COLLISION AVOIDANCE SAFETY PROGRAM (CASP)				
System Development: Requirements Development: CASP Requirement Development Capabilities Development Document	1	2011	4	2011
System Development: Design/Integration/Certification Activities: CASP Design/Integrate/Certification Activities	1	2011	4	2011
System Development: NSA IA: CASP NSA IA	1	2011	4	2011
ADVANCED DIGITAL DATA SET (ADDS)				
Acquisition Milestones: Milestones: Milestone B	1	2012	1	2012
Acquisition Milestones: Milestones: Milestone C	1	2015	1	2015
Systems Development: Engineering & Management Development Contract Award	1	2012	1	2012
Systems Development: NSA Information Assurance	1	2012	3	2014
Systems Development: Reviews: System Requirements Review/System Functional Review	3	2012	3	2012
Systems Development: Reviews: Preliminary Design Review	4	2012	4	2012
Systems Development: Reviews: Critical Design Review	2	2013	2	2013

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Systems Development: Reviews: Test Readiness Review	2	2014	2	2014
Systems Development: Reviews: Test Readiness Assessment	3	2014	3	2014
Systems Development: Reviews: System Verification Review/Functional Configuration Audit/Program Readiness Review	3	2014	3	2014
Systems Development: Reviews: Physical Configuration Audit	1	2016	1	2016
Test and Evaluation: Developmental Testing	1	2014	1	2016
Production Milestones: Contract Awards: Low Rate Initial Production Contract Award	1	2015	1	2015
Production Milestones: Contract Awards: Full Rate Production Award Contract Award	2	2016	2	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604215N: <i>Standards Development</i>	PROJECT 1857: <i>Calibration Standards</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
1857: <i>Calibration Standards</i>	1.910	1.401	1.365	-	1.365	1.877	1.908	1.950	1.992	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Project 1857, Calibration Standards: This project is a Navy-wide program to develop required calibration standards (hardware) in all major measurement technology areas in support of Navy Hull, Mechanical and Electrical 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 Meteorology Research and Development program. This project supports the military requirement to verify the performance of all test systems used to validate the operation of Navy Hull, Mechanical and Electrical as well as Navy Weapon Systems with calibration standards traceable to the National Institute of Standards and Technology.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Calibration Standards	1.910	1.401	1.365	-	1.365
Articles:	0	0	0		0
FY 2010 Accomplishments: (\$1.182) Begin development of 3 new calibration standards in support of chemical biological detection systems. (\$.300) Begin development of standards in support for wireless micro electrical mechanical sensors in support of the next generation DD(X) ships and Smart Carriers. (\$.428) Complete (1) calibration standard hardware in support of chemical and biological systems and (1) high power laser attenuator in support of optical tests.					
FY 2011 Plans: (\$.940) Continue development of calibration standards (hardware) in support of chemical and biological detection systems. (\$.252) Begin development of portable calibration standards in support of Fleet for in-situ wireless closed loop calibrations on board naval ships.					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604215N: <i>Standards Development</i>	PROJECT 1857: <i>Calibration Standards</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
(\$.209) Continue development of standards in support for wireless micro electrical sensors in support of next generation DD(X) ships and Smart Carriers. <i>FY 2012 Base Plans:</i> (\$.700) Complete development of calibration standards (hardware) in support of chemical and biological detection systems (Chemical Warfare Agent detectors). (\$.320) Continue development of portable calibration standards in support of Fleet for in-situ wireless closed loop calibrations on board naval ships. (\$.345) 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	1.910	1.401	1.365	-	1.365

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

Funds being sent to NSWC Corona to initiate the research and development of projects in the technology areas of Physical/Mechanical, Microwave/Millimeter-Wave, Electro-Optics, and Nuclear, Biological and Chemical for the purpose of ensuring measurement accuracy in combat systems of new advance technology and current weapon systems and associated test equipment. Efforts will provide for more cost effective and efficient system measurements for performing maintenance and calibration and reduce wrong test decisions that will result in lower maintenance costs and higher system performance reliability.

E. Performance Metrics

The US Navy Metrology RDT&E program will transition 4 current projects within the next 12 months in the technology areas of, Physical/Mechanical, Nuclear, Biological and Chemical consisting new hardware calibration standards and capabilities. Within the next 12 months, develop and transition 3 current and 2 new Electro Optics measurement standards (Hardware). Will initiate the research and development of 7 new and 5 continuing projects in the technology areas of Physical/Mechanical, Microwave/Millimeter-Wave, Electro-Optics, and Nuclear, Biological and Chemical for the purpose of ensuring measurement accuracy in combat systems of new advance technology and current weapon systems and associated test equipment. Efforts will provide for more cost effective and efficient system measurements for performing maintenance and calibration and reduce wrong test decisions that will result in lower maintenance costs and higher system performance reliability. Success measures will be articulated through program goals and a Balance Scorecard Strategy System.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604215N: <i>Standards Development</i>	PROJECT 1857: <i>Calibration Standards</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	WR	NSWC Corona:Corona, CA	3.330	0.851	Oct 2010	0.700	Oct 2011	-		0.700	0.000	4.881	
Subtotal			3.330	0.851		0.700		-		0.700	0.000	4.881	

Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	WR	NSWC Corona:Corona, CA	1.067	0.209	Oct 2010	0.300	Oct 2011	-		0.300	0.000	1.576	
Government Engineering Support	WR	NSWC Corona:Corona, CA	1.849	0.321	Oct 2010	0.325	Oct 2011	-		0.325	0.000	2.495	
Defense Acquisition Workforce	Various	Various:Various	0.007	-		-		-		-	0.000	0.007	
Travel	WR	NSWC Corona:Corona, CA	0.058	0.020	Oct 2010	0.040	Oct 2011	-		0.040	0.000	0.118	
Subtotal			2.981	0.550		0.665		-		0.665	0.000	4.196	

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		6.311	1.401		1.365		-	1.365	0.000	9.077	

Remarks

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604215N: <i>Standards Development</i>	PROJECT 1857: <i>Calibration Standards</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Proj 1857</i>				
Chemical Biological Detection Systems development	1	2010	4	2012
Wireless micro Electrical Mechanical Sensors development	1	2010	4	2014
In-situ Wireless Closed Loop Calibrations development	1	2011	4	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy								DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604215N: <i>Standards Development</i>				PROJECT 2311: <i>Stores Planning and Weaponeeing Module</i>			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2311: <i>Stores Planning and Weaponeeing Module</i>	11.986	12.377	12.075	-	12.075	12.589	12.686	12.939	13.064	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 Weaponeeing Module: The Naval Aircraft Weaponeeing Components (NAWC) project, now referred to as the Weaponeeing 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 weaponeeing 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-Off-The-Shelf (GOTS) and Commercial-Off-The-Shelf (COTS) 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 by N88, 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 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Product Development	6.224	7.456	6.597	-	6.597
Articles:	0	0	0		0
Description: Includes associated system engineering design, development, installation, integration and software development for WASP components V1.2, V1.2.2, V1.2.3, V1.2.4, V3.0, V3.1 to support F/A-18 A-F. NAWCWD, JSSA (Joint Software Support Activity) will develop and maintain the AV-8B Weapons and Release Planning (WARP) tool using \$.3M in FY10, \$1M in FY11 and .4M in FY12. Define requirements to integrate WASP components into the Joint Mission Planning System (JMPS). Provide domain engineering support for weapons separation, aircraft loads, flutter, fuzing and safe escape for application to WASP. Provide government Joint Munitions Effectiveness Manual (JMEM) engineering support (JMEM Subject Matter Experts) for integration of new JMEM capabilities into 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					

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604215N: <i>Standards Development</i>	PROJECT 2311: <i>Stores Planning and Weaponeeing Module</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
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A-F 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 GOTS/COTS software components and tools (aircraft target maneuver simulations, weapon flyout models, target probability of damage calculators, etc.) that are used as GFI 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 2010 Accomplishments:
Complete and release WASP V 1.2.3 to fleet. \$3M funding provided to NAWCWD, JSSA for WARP product development.

FY 2011 Plans:
Complete WASP V1.2.4 for FY12 release to fleet and analyze requirements for WASP V3.0. \$1M funding provided to NAWCWD, JSSA for WARP product development.

FY 2012 Base Plans:
Release V1.2.4 to the fleet 1QFY12. Start development of V3.0. Provide .7M of funding to NAWCWD, JSSA for WARP product development.

Title: Test and Evaluation (T&E)	4.314	2.128	2.669	-	2.669
Articles:	0	0	0		0

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 V1.2, V1.2.2, V1.2.3 WASP V3.0, and V3.1. Provide Test & Evaluation (T&E) support for guided weapons and Joint Munitions Effectiveness Manual (JMEM) accreditation. Provide JMPS Mission Planning Environment (MPE) Integration test support. Provide testing and test support to ensure all (to include internally developed software, externally developed GOTS components and COTS products) complies 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 2010 Accomplishments:

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy			DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604215N: <i>Standards Development</i>	PROJECT 2311: <i>Stores Planning and Weaponing Module</i>				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continue test and evaluation of WASP V 1.2.3 in order to release to the fleet.						
FY 2011 Plans: 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 Base Plans: Complete test and evaluation of WASP V3.0 in order to release to fleet in FY13. Analyze test requirements for V3.1.						
Title: Program Management/Systems Engineering		1.448	2.793	2.809	-	2.809
		0	0	0		0
Description: Provide program management and systems engineering support, which includes requirements definition and analysis, compliance with NAVAIR systems engineering technical review processes, 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 Development Plan (FYDP).						
FY 2010 Accomplishments: Continue project management support to the WASP for future releases of WASP to the fleet.						
FY 2011 Plans: Continue project management support to the WASP for future releases of WASP to the fleet.						
FY 2012 Base Plans: Continue project management support to the WASP for future releases of WASP to the fleet.						
Accomplishments/Planned Programs Subtotals		11.986	12.377	12.075	-	12.075

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604215N: <i>Standards Development</i>	PROJECT 2311: <i>Stores Planning and Weaponing Module</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• RDTE/3858: <i>Air Force Mission Planning</i>	81.577	83.554	74.172	0.000	74.172	76.036	82.732	96.123	0.000	0.000	494.194

D. Acquisition Strategy

WASP products, delivered annually, were developed in-house by Naval Air Systems Command consisting of NAWCAD and NAWCWD, 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. WASP utilizes the Logistics Maintenance Supply Support (LMSS) contract.

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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604215N: <i>Standards Development</i>	PROJECT 2311: <i>Stores Planning and Weaponering Module</i>
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Product Development (NOMWN, 5169 6 FI&OCC)	WR	NAWCAD:Patuxent River, MD	16.991	0.010	Nov 2010	0.142	Nov 2011	-		0.142	Continuing	Continuing	Continuing
Product Development SEAL	Various	Various:Various	30.225	0.203	Nov 2010	0.391	Nov 2011	-		0.391	0.000	30.819	30.833
Product Development	WR	AF Seek Eagle:Eglin AFB, FL	-	0.074	Nov 2010	0.076	Nov 2011	-		0.076	Continuing	Continuing	Continuing
Primary Software Development TWH	C/CPFF	Lockheed Martin:Marlton, NJ	-	6.469	Nov 2010	5.594	Nov 2011	-		5.594	0.000	12.063	12.263
Product Development WARP	WR	NAWCWD:China Lake, CA	-	0.700	Nov 2010	0.394	Nov 2011	-		0.394	Continuing	Continuing	Continuing
Prior year cost no longer funded in FYDP	Various	Various:Various	26.492	-		-		-		-	0.000	26.492	
Subtotal			73.708	7.456		6.597		-		6.597			

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test & Evaluation CIV & OCC	WR	NAWCAD:Patuxent River, MD	17.398	0.793	Nov 2010	1.206	Nov 2011	-		1.206	Continuing	Continuing	Continuing
Test & Evaluation	WR	NAWCWD:Pt. Mugu, CA	0.100	0.165	Nov 2010	-		-		-	Continuing	Continuing	Continuing
Test & Evaluation MANTECH & WYLE	C/CPFF	Various:Various	6.000	1.170	Nov 2010	1.463	Nov 2011	-		1.463	0.000	8.633	11.472
Prior Year costs no longer funded in FYDP	Various	Various:Various	0.377	-		-		-		-	0.000	0.377	
Subtotal			23.875	2.128		2.669		-		2.669			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604215N: <i>Standards Development</i>	PROJECT 2311: <i>Stores Planning and Weaponering Module</i>
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Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Program Management Support Tecelote, shared costs, Materials	WR	NAWCAD:Patuxent River, MD	8.088	0.520	Nov 2010	0.729	Nov 2011	-		0.729	Continuing	Continuing	Continuing	
Government Engineering Support CIV Sys Eng	WR	NAWCAD:Patuxent River, MD	4.827	0.853	Nov 2010	0.631	Nov 2011	-		0.631	Continuing	Continuing	Continuing	
Program Management Support Brandes & MANTECH	Various	Various:Various	-	0.659	Nov 2010	0.636	Nov 2011	-		0.636	0.000	1.295	1.295	
Government Engineering Support	WR	NAWCWD:China Lake, CA	1.098	0.017	Nov 2010	0.018	Nov 2011	-		0.018	Continuing	Continuing	Continuing	
Travel	WR	NAWCAD:Patuxent River, MD	1.261	0.060	Nov 2010	0.030	Nov 2011	-		0.030	Continuing	Continuing	Continuing	
Systems Engineering Support	Various	Various:Various	-	0.684	Nov 2010	0.765	Nov 2011	-		0.765	0.000	1.449	1.549	
Prior year costs no longer funded in FYDP	Various	Various:Various	0.663	-		-		-		-	0.000	0.663		
Subtotal			15.937	2.793		2.809		-		2.809				
Project Cost Totals			113.520	12.377		12.075		-		12.075				

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604215N: <i>Standards Development</i>	PROJECT 2311: <i>Stores Planning and Weaponneering Module</i>

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604215N: <i>Standards Development</i>	PROJECT 2311: <i>Stores Planning and Weaponneering Module</i>

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604215N: <i>Standards Development</i>	PROJECT 2311: <i>Stores Planning and Weaponering Module</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Stores Planning and Weaponering Module				
Acquisition Milestones: WASP V1.2.3 (F/A-18A/B/C/D/E/F): Technical Information Review Board	2	2010	2	2010
Acquisition Milestones: WASP V1.2.3 (F/A-18A/B/C/D/E/F): Functional Qualification Test	2	2010	2	2010
Acquisition Milestones: WASP V3.0 (F/A-18A/B/C/D/E/F) Phase I to design only (used in V1.2.4): Critical Design Review	2	2010	2	2010
Acquisition Milestones: WASP V1.2.4: Software Requirements Review	3	2010	3	2010
Acquisition Milestones: WASP V1.2.4: Preliminary Design Review	4	2010	4	2010
Acquisition Milestones: WASP V1.2.4: Critical Design Review	4	2010	4	2010
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	3	2011	3	2011
Acquisition Milestones: WASP V3.0 Phase II (F/A-18A/B/C/D/E/F): Preliminary Design Review	4	2011	4	2011
Acquisition Milestones: WASP V3.0 Phase II (F/A-18A/B/C/D/E/F): Critical Design Review	1	2012	1	2012
Acquisition Milestones: WASP V3.0 Phase II (F/A-18A/B/C/D/E/F): Test Readiness Review	3	2012	3	2012
Acquisition Milestones: WASP V3.0 Phase II (F/A-18A/B/C/D/E/F): Technical Information Review Board	4	2012	4	2012
	4	2012	4	2012

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604215N: <i>Standards Development</i>	PROJECT 2311: <i>Stores Planning and Weaponing Module</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Acquisition Milestones: WASP V3.0 Phase II (F/A-18A/B/C/D/E/F): Functional Qualification Test				
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	1	2013	1	2013
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	4	2013	4	2013
Acquisition Milestones: WASP V3.1 (F/A-18A/B/C/D/E/F): Functional Qualification Test	4	2013	4	2013
Acquisition Milestones: WASP V3.2 (F/A-18A/B/C/D/E/F): Software Requirements Review	3	2013	3	2013
Acquisition Milestones: WASP V3.2 (F/A-18A/B/C/D/E/F): Preliminary Design Review	4	2013	4	2013
Acquisition Milestones: WASP V3.2 (F/A-18A/B/C/D/E/F): Critical Design Review	1	2014	1	2014
Acquisition Milestones: WASP V3.2 (F/A-18A/B/C/D/E/F): Test Readiness Review	3	2014	3	2014
Acquisition Milestones: WASP V3.2 (F/A-18A/B/C/D/E/F): Technical Information Review Board	4	2014	4	2014
Acquisition Milestones: WASP V3.2 (F/A-18A/B/C/D/E/F): Functional Qualification Test	4	2014	4	2014
Acquisition Milestones: WASP V3.3 (F/A-18A/B/C/D/E/F): Software Requirements Review	3	2014	3	2014
Acquisition Milestones: WASP V3.3 (F/A-18A/B/C/D/E/F): Preliminary Design Review	4	2014	4	2014
Acquisition Milestones: WASP V3.3 (F/A-18A/B/C/D/E/F): Critical Design Review	1	2015	1	2015
Acquisition Milestones: WASP V3.3 (F/A-18A/B/C/D/E/F): Test Readiness Review	3	2015	3	2015
Acquisition Milestones: WASP V3.3 (F/A-18A/B/C/D/E/F): Technical Information Review Board	4	2015	4	2015
Acquisition Milestones: WASP V3.3 (F/A-18A/B/C/D/E/F): Functional Qualification Test	4	2015	4	2015

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604215N: <i>Standards Development</i>	PROJECT 2311: <i>Stores Planning and Weaponing Module</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Acquisition Milestones: WASP V3.4 (F/A-18A/B/C/D/E/F): Software Requirements Review	3	2015	3	2015
Acquisition Milestones: WASP V3.4 (F/A-18A/B/C/D/E/F): Preliminary Design Review	4	2015	4	2015
Acquisition Milestones: WASP V3.4 (F/A-18A/B/C/D/E/F): Critical Design Review	1	2016	1	2016
Acquisition Milestones: WASP V3.4 (F/A-18A/B/C/D/E/F): Test Readiness Review	3	2016	3	2016
Acquisition Milestones: WASP V3.4 (F/A-18A/B/C/D/E/F): Technical Information Review Board	4	2016	4	2016
Acquisition Milestones: WASP V3.4 (F/A-18A/B/C/D/E/F): Functional Qualification Test	4	2016	4	2016
Test & Evaluation Milestones: WASP V1.2.3 (F/A-18A/B/C/D/F):	1	2010	2	2010
Test & Evaluation Milestones: WASP V1.2.4 (F/A-18A/B/C/D/F):	2	2011	3	2011
Test & Evaluation Milestones: WASP V3.0 Phase II (F/A-18A/B/C/D/E/F) SRR to reelease to Fleet (Rearchitecture):	3	2012	4	2012
Test & Evaluation Milestones: WASP V3.1 (F/A-18A/B/C/D/E/F):	3	2013	4	2013
Test & Evaluation Milestones: WASP V3.2 (F/A-18A/B/C/D/E/F):	3	2014	4	2014
Test & Evaluation Milestones: WASP V3.3 (F/A-18A/B/C/D/E/F):	3	2015	4	2015
Test & Evaluation Milestones: WASP V3.4 (F/A-18A/B/C/D/E/F):	2	2016	3	2016
Production Milestones: WASP V1.2.3 (F/A-18A/B/C/D/E/F) Initial Operational Capability (IOC):	4	2010	4	2010
Production Milestones: WASP V1.2.4 (F/A-18A/B/C/D/E/F) IOC:	1	2012	1	2012
Production Milestones: WASP V3.0 Release (F/A-18A/B/C/D/E/F) 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	2015	2	2015
Production Milestones: WASP V3.3 (F/A-18A/B/C/D/E/F) IOC:	2	2016	2	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604215N: <i>Standards Development</i>	PROJECT 2312: <i>Common Helicopters</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2312: <i>Common Helicopters</i>	0.929	0.928	0.889	-	0.889	0.903	0.918	0.939	0.948	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 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Common Helicopters	0.929	0.928	0.889	-	0.889
Articles:	0	0	0		0
Description: Continue development of Common Helicopter functionality and integration with JMPS Version 1.2.4, 1.4 and Portable Flight Planning Station (PFPS) Version 3.31.					
FY 2010 Accomplishments: Performed Common Mission Data Loader (CMDL) .NET UPC Preliminary Design Review (PDR) and Critical Design Review (CDR), developed and delivered two builds of legacy CMDL UPC to Developmental Test (DT), developed and delivered VH-3D and VH-60N Weight & Power Calculator (WPC) module to DT, and developed and delivered two additional helicopter WPC modules to DT.					
FY 2011 Plans: Develop and deliver two builds of legacy CMDL UPC DT, develop and deliver CMDL .net UPC to DT, and develop and deliver three helicopter WPC modules to DT.					
FY 2012 Base Plans: Develop and deliver CMDL compatibility with Windows 7, FW 1.2, 1.3 and 1.4 to DT.					
Accomplishments/Planned Programs Subtotals	0.929	0.928	0.889	-	0.889

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604215N: <i>Standards Development</i>	PROJECT 2312: <i>Common Helicopters</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• RDTE/3858: <i>Air Force Mission Planning Systems</i>	81.577	83.554	74.172	0.000	74.172	76.036	82.723	96.123	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.

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 5: <i>Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604215N: <i>Standards Development</i>	PROJECT 9999: <i>Congressional Adds</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
9999: <i>Congressional Adds</i>	5.776	-	-	-	-	-	-	-	-	0.000	5.776
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Congressional Adds.

B. Accomplishments/Planned Programs (\$ in Millions)

<i>Congressional Add:</i> Measurement Standards Research and Development	FY 2010	FY 2011
	5.776	-
<i>FY 2010 Accomplishments:</i> FY 2010 RDT&E Congressional Plus-up Funds for the U.S. Navy Metrology R&D Program efforts at the Naval Surface Warfare Center, Corona, Ca, will be issued for the research and development (R&D) of National, Primary, and Depot Maintenance calibration standards (hardware) in the technology areas of Physical-mechanical, Microwave/Millimeter-Wave, Electro-optics, and Nuclear, Biological and Chemical (NBC) for the purpose of ensuring measurement accuracy in combat systems of new advance technology and current weapon systems and associated test equipment. This will provide for the development of metrology standards in support of test measurements of air launched missiles, automated calibration of shipboard smart sensors, shipboard and aircraft test systems. This will also continue the development of the new generation automated calibration system and NBC standards for hand-held Ion Mobility Spectrometry (IMS) detectors and quantifiable UV data accuracy in support of portable biological detector systems.		
Congressional Adds Subtotals	5.776	-

C. Other Program Funding Summary (\$ in Millions)

N/A

D. Acquisition Strategy

Not Required for Congressional Adds.

E. Performance Metrics

Not Required for Congressional Adds.