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Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Navy									DATE: February 2010		
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 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	67.789	59.044	45.667	0.000	45.667	57.832	74.094	71.794	71.468	Continuing	Continuing
0572: JT Service/NV Std Avionics CP/SB	51.435	37.914	30.961	0.000	30.961	42.503	57.690	55.140	54.486	Continuing	Continuing
1857: Calibration Standards	1.511	2.023	1.401	0.000	1.401	1.457	1.952	1.997	2.038	Continuing	Continuing
2311: Stores Planning and Weaponneering Module	11.119	12.365	12.377	0.000	12.377	12.926	13.489	13.672	13.939	Continuing	Continuing
2312: Common Helicopters	0.931	0.966	0.928	0.000	0.928	0.946	0.963	0.985	1.005	Continuing	Continuing
9999: Congressional Adds	2.793	5.776	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	17.501
Note PU 0572 FY11 NEW START - Collision Avoidance Safety Program.											
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 Navy Hull, Mechanical and Electrical (HM&E) as well as Navy Weapon Systems with calibration standards traceable to the National Institute of Standards and Technology.											

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1319: Research, Development, Test & Evaluation, Navy		PE 0604215N: Standards Development			
BA 5: Development & Demonstration (SDD)					
B. Program Change Summary (\$ in Millions)					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Previous President's Budget	66.517	53.540	0.000	0.000	0.000
Current President's Budget	67.789	59.044	45.667	0.000	45.667
Total Adjustments	1.272	5.504	45.667	0.000	45.667
• Congressional General Reductions		-0.245			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	-0.051			
• Congressional Adds		5.800			
• Congressional Directed Transfers		0.000			
• Reprogrammings	3.153	0.000			
• SBIR/STTR Transfer	-1.881	0.000			
• Program Adjustments	0.000	0.000	45.667	0.000	45.667
Congressional Add Details (\$ in Millions, and Includes General Reductions)					
Project: 9999: Congressional Adds					
Congressional Add: Measurement Standards Research and Development					
Congressional Add: U.S. Navy Metrology and Calibration (METCAL)					
Congressional Add Subtotals for Project: 9999					
Congressional Add Totals for all Projects					
Change Summary Explanation					
Technical: Not applicable.					
Schedule:					
0572: AMCD-Upon completion of the V-22 Mission System Upgrade (MSU) Risk Reduction activity, follow-on MSU development effort cancelled. Remaining activity includes the conduct of Trade Studies for the Fiber Channel Network Switch (FCNS), Network Processor and OSP3e upgrades to meet future Naval Aviation requirements.					

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<p>TACCOM-Moved NSA Certification for Gen5 Design Reviews/Certifications from 4th Qtr FY09 to 2nd Qtr FY10 and Production Starts from 3rd Qtr FY10 to 4th Qtr FY10 to reflect fact of life schedule delays brought on by changing NSA security requirements to maintain radio CCI classification.</p> <p>GPWS-MV-22 GPWS efforts were delayed. Moved from 1st Qtr FY09-4th Qtr FY10 to 3rd Qtr FY11-4th Qtr FY13.</p> <p>MFOQA-Milestone C moved from 4Q09 to 4Q11 and IOC moved from 1Q10 to 2Q12 due to fleet requirements changes to address security, access control, expanding data trending/analysis capability, and speed of application across all squadron and enterprise users. F/A-18 Lead Platform Schedule change resulted from a change in MFOQA Program Baseline Requirements. MH-60/R/S/CH-53 Platform Schedule change resulted from a change in MFOQA Program Baseline Requirements. T-45 Platform Schedule change resulted from a change in MFOQA Program Baseline Requirements. All follow-on program efforts were delayed due to this change in the Baseline Platform Schedule.</p> <p>COLLABORATIVE WARFARE - Collaborative Warfare efforts were delayed due to FY10 new start and operating under a CRA. Warfighting Gap Analysis moved from 1st Qtr FY10 to 2nd Qtr FY10. Candidate Solution ID moved from 2nd Qtr FY10 to 3rd Qtr FY10. Candidate Evaluation (M&S) moved from 2nd Qtr FY10 to 3rd Qtr FY10.</p> <p>1857: Not Applicable.</p> <p>2311: Acquisition Milestone Changes:</p> <table> <thead> <tr> <th>FROM</th><th>TO</th><th>REASON</th></tr> </thead> <tbody> <tr> <td>a. WASP 1.2.3 IOC</td><td>2Q FY10</td><td>3Q FY10</td></tr> <tr> <td>b. WASP AV-8B</td><td>4Q FY10</td><td>Deleted</td></tr> <tr> <td>c. WASP 1.2.4 IOC</td><td>3Q FY10</td><td>Deleted</td></tr> </tbody> </table> <p>1. 1.2.3 TRR is now grey (completed) as the TRR was held in Dec 09.</p> <p>2. 3.0 TRR/TIRB/FQT were deleted as now 3.0 has been split into two phases: Phase I will conclude at CDR in March of 2010, Phase II will start in 2011. This project had to be split because of contract issues.</p> <p>3. 1.2.4 was added to be a interim release while a new contract is processed for the 3.0 Phase II effort. All milestones were added.</p> <p>4. 3.1 & 3.2 projects had to slide due to contract constraints (new contract to be awarded in 2011).</p> <p>5. 3.3 & 3.4 projects were deleted because they no longer occur during FY10-FY15. We anticipate that they will reoccur after this time frame.</p> <p>2312: Not Applicable.</p> <p>9999: Not Applicable.</p>			FROM	TO	REASON	a. WASP 1.2.3 IOC	2Q FY10	3Q FY10	b. WASP AV-8B	4Q FY10	Deleted	c. WASP 1.2.4 IOC	3Q FY10	Deleted
FROM	TO	REASON												
a. WASP 1.2.3 IOC	2Q FY10	3Q FY10												
b. WASP AV-8B	4Q FY10	Deleted												
c. WASP 1.2.4 IOC	3Q FY10	Deleted												

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FY11 from previous President's Budget is shown as zero because no FY11-15 data was presented in President's Budget 2010.		

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COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
0572: <i>JT Service/NV Std Avionics CP/SB</i>	51.435	37.914	30.961	0.000	30.961	42.503	57.690	55.140	54.486	Continuing	Continuing
Quantity of RDT&E Articles	2	0	0	0	0	0	0	0	0		
Note New Start FY11: Collision Avoidance Safety Program.											
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), Aircraft Computers, Processors, & Displays, Wireless Internal Communications, Tactical Communications (TAC COM), Ground Proximity Warning System/Terrain Awareness Warning System (GPWS/TAWS), Military Flight Operational Quality Assurance (MFOQA), Collaborative Warfare and the Collision Avoidance Safety Program. Participation in Human Factors Quality Management Board (HFQMB) ensures Navy safety upgrades and mandatory safety improvements for naval aircraft.											
B. Accomplishments/Planned Program (\$ in Millions)											
						FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	
Mission Computer/Mission Systems Upgrade						2.966	4.820	0.500	0.000	0.500	
AMCD - 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.											

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2009 Accomplishments: Conducted risk reduction activities to facilitate management of critical obsolescence issues for a mission systems upgrade, provide for implementation of Capability Development Document (CDD) requirements for avionics systems, and address net-centric warfare capability Key Performance Parameters (KPPs) via modernization of existing hardware and core system software for V-22 platforms. Objectives met, Risk Reduction efforts producing tangible upgrade path for V-22 platform avionics.						
FY 2010 Plans: Efforts for OSP 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. Conduct Trade Studies for the Fiber Channel Network Switch (FCNS) and Network Processor.						
FY 2011 Base Plans: 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.						
Development of AWICS Encrypted Module AWICS - Safety: Complete development and testing of the Joint, Cooperative Encrypted Wireless Internal Communication System (ICS) system in cooperation with the U.S. Army led program. To replace the long cord ICS with a wireless system.		0.197	0.000	0.000	0.000	0.000
FY 2009 Accomplishments: High altitude testing conducted on encrypted AWICS.						
Integration/Certification of Developmental Aircraft CNS/ATM -This program will conduct and support CNS/ATM research, studies, development, integration, demonstration, test and evaluation efforts for Naval Aviation platforms in development.		0.050	0.150	0.150	0.000	0.150

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Platform integration of Mode S, 8.33kHz, Reduced Vertical Separation Minimums (RVSM) and Required Navigation Performance (RNP RNAV) 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 communications, 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 and RNP/RNAV, and other civil and military capabilities. FY 2009 Accomplishments: Initiated E-2D Integration/Certification for MODE S & 8.33 kHz. FY 2010 Plans: Complete E-2D Integration/Certification of MODE S & 8.33kHz; Complete RNP/RNAV integration and certification efforts into the E-2D; Start P-8 Integration/Certification for RVSM & RNP RNAV. FY 2011 Base Plans: Complete P-8 Integration/Certification of RVSM & RNP RNAV capability.						
Provide Support to Tri-Service/Joint Programs FY 2009 Accomplishments: 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 (CAMP). Supported and participated in Naval Aviation Requirements (NARG) panels, Operational Advisory Groups (OAG), and HFQMB.		0.768	1.117	1.060	0.000	1.060

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2010 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 Core Avionics Master Plan (CAMP). Support and participate in Naval Aviation Requirements (NARG) panels, Operational Advisory Groups (OAG), and HFQMB.						
FY 2011 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 Core Avionics Master Plan (CAMP). Support and participate in Naval Aviation Requirements (NARG) panels, Operational Advisory Groups (OAG), and HFQMB.						
Develop Evolutionary Communication Systems Tactical Communications - 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 (COMSEC), Variable Message Format (VMF), Over the Horizon Communications (MUOS, SATCOM, HF), civil interoperability, and Joint Precision and Landing System (JPALS) data link into the ARC-210 system. Support for networking requirements development and prototyping, Integrated Waveform (IW), Intelligence Broadcast System (IBS), JTRS, Tactical Networks, Datalinks and Link 16. Awarded integration study contracts for Tactical Communication systems within E-2 AHE (Advanced Hawkeye),		25.599	9.916	3.681	0.000	3.681

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
H-1, H-53, V22, and AV-8B and other aircraft along with Link-16 and Mobile Users Objective System (MUOS). FY 2009 Accomplishments: Continued development of the RT-1939 (Gen5) and Gen5 ancillary equipment. FY 2010 Plans: Receive Final Gen5 certificaton from NSA (May2010). Provide Test Assets to Platform Program Offices for SIL and regression testing (Mar-Jun 2010). Receive approval for FRP (Jul 2010). Continue to develop ancillary equipment in support of Gen5 integration. FY 2011 Base Plans: Continue development of the Tactical Secure Voice (TSV), Mobile User Objective System (MUOS) and Joint Precision Approach Landing System (JPALS) for inclusion in a Gen5 RT.						
Develop Ground Terrain Warning Capability GPWS/TAWS - 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.		8.123	5.951	5.419	0.000	5.419

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2009 Accomplishments: Completed the platform level Preliminary Design Review (PDR) and Critical Design Review (CDR) for H-1. Started alpha software testing in the Man Flight Simulator (MFS) for H-1. Worked the software development and correction of deficiencies for the H-60 platform.						
FY 2010 Plans: Deliver the engineering software build to the Prime contractor, and sign off on the Interface Design Document (IDD) and System Specification (SS) for the H-1 platform. Complete the requirements definition for the MV-22 platform.						
FY 2011 Base Plans: Deliver GPWS software load to the fleet for the H-1 and H-60 platforms. Commence the study with Boeing, and sign off on the IDD and Sys Spec for the MV-22 platform.						
Develop MFOQA Capability MFOQA -This program will develop an 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 for each aircraft TMS such as SRR, PDR, CDR, DT, Milestone C and follow-on Decision Reviews.		13.732	10.977	12.600	0.000	12.600
FY 2009 Accomplishments: Phase 1 (F/A-18 C/D/E/F, EA-18G) MFOQA completed the Systems Integration and the associated Test Readiness Review (TRR) and began DT-B1 (contractor testing). Phase 2 (MH-60R/S and CH-53E), initiated requirements development.						

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2010 Plans: Phase I conduct delta requirements review, delta design review, and develop software for test.						
FY 2011 Base Plans: Phase I conduct DT-B2 and DT-B3. Achieve Milestone C and initiate fielding to F/A-18C/D/E/F and EA-18G.						
Collaborative Warfare Collaborative Warfare- This program will establish and execute a process to ensure Naval Aviation warfighter needs drive coherent network investments. The process will use prioritized scenarios, missions, and threats to align Naval Aviation Enterprise (NAE) operational, science and technology (S&T), and acquisition communities to ensure network investments deliver warfighting capability. Execute a mission-focused collaborative warfare process to identify warfighting capability gaps and define Measures of Effectiveness (MOEs) to formulate solutions sets. Employ modeling, simulations, and analysis and focused, scalable technology demonstrations and prototyping to validate solutions and establish standards. Develop POM/PR investment strategies leveraging existing programs and ensuring common systems and Open Architecture (OA) approaches contribute to solutions.		0.000	4.983	4.051	0.000	4.051
FY 2010 Plans: Conduct Warfighting Gap Analysis for two missions, Initiate Solutions ID and Candidate Eval (Modeling and Simulation). Prototype 1 network based solution to improve target classification and ID.						
FY 2011 Base Plans: Initiate Solutions ID and Candidate Eval (Modeling and Simulation) for 2 Mission areas. Conduct Warfighting Gap Analysis for two mission areas, Complete Solutions ID and Candidate Eval (Modeling and Simulation) started in FY10.						
Develop Collision Avoidance Safety Program		0.000	0.000	3.500	0.000	3.500

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B. Accomplishments/Planned Program (\$ in Millions)											
						FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	
Collision Avoidance Safety Program (CASP)- This is an 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, simulation models and procurement of test article hardware. <i>FY 2011 Base Plans:</i> Initiate documentation development and NSA certification for capability enabling hardware and software components.											
Accomplishments/Planned Programs Subtotals						51.435	37.914	30.961	0.000	30.961	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• APN/05770: <i>Common Avionics</i>	147.362	142.372	101.120	14.100	115.220	144.034	80.584	122.301	134.126	1,349.967	3,939.309
D. Acquisition Strategy											
Advanced Mission Computer & Displays (AMC&D) sole-source cost contract to Bell Boeing Joint Program Office for EMD study activities in support of the V-22 Mission Systems Upgrade (MSU). Aircrew Wireless Internal Communication System (AWICS) acquisition strategy is aligned with the Army Wireless ICS developmental program resulting in a common system for use aboard multiple assault, logistics, Rotary Wing and Fixed Wing aircraft. Communication, Navigation, Surveillance/ Air Traffic Management (CNS/ATM) program is a system of systems. The program will encompass the integration of various systems that are currently post-MS III. Systems will be procured utilizing existing contracts for integration on forward-fit and retrofit platforms to provide CNS/ATM functionality. Tactical Communications is utilizing a firm fixed price contract to Rockwell Collins for research and development of the ARC-210 Gen 5 and other Navy contract vehicles for integration studies. The Navy will integrate systems and components to satisfy platform requirements to achieve tactical communication capability as determined by analyses. GPWS/ TAWS software modules will be developed by the existing PMA209 government software product team. The software modules will be integrated into the platform											

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<p>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/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 S/W development, integration and support contract as well as the commercial off the shelf S/W data analysis product. The Collision Avoidance Safety Program 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 hardware and software needed to support these capabilities in a military operating environment including data loaders and recorders for obstacles databases, and related functionality. GPWS/TAWS software modules will be developed by the existing Government software product team and implemented by the sole-source cost contract to DCS Corporation. The software modules will be integrated into the platform host computer by the platform's prime integrator using platform contract vehicles.</p> <p>E. Performance Metrics</p> <p>AMCD - Successful product redesign of 3 CCAs of the 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 M/S 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 Core Avionics Master Plan (CAMP). Support and participate in Naval Aviation Requirements (NARG) panels, Operational Advisory Groups (OAG), and HFQMB.</p> <p>CNS/ATM - Successfully complete Development Test/Operational Test and achieve platform certification.</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 - The MFOQA program will successfully complete a Design Review capturing revised requirements. The MFOQA program will successfully complete Milestone C.</p> <p>Collaborative Warfare - Each iteration of the Collaborative Warfare Process (CWP) will assess 1 mission area.</p> <p>For each iteration, the output of the Capabilities Working Group (CWG) is a Capabilities Case Assessment (CCA) identifying at least 3 capability gap(s) and at least 1 high level solution proposal serving as the primary input to the Solutions Working Group (SWG). The output of the SWG is a Solutions Analysis which is to serve as the primary input to the Investment Working Group (IWG). The output of the IWG, the primary output of the CWP, is a coordinated investment strategy for use in the POM process by the appropriate parties.</p> <p>Collision Avoidance Safety Program (CASP) - The CASP will initiate release of RFP, requirements development and NSA Information Assurance.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy											DATE: February 2010			
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)														
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 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	SS/CPIF	Bell Boeing Amarillo, TX	0.000	0.627	May 2010	0.000		0.000		0.000	0.000	0.627	0.627	
Primary Hardware Development	C/CPFF	Mantech Fairfax, VA	12.097	5.429	Nov 2009	6.725	Nov 2010	0.000		6.725	14.110	38.361	38.361	
Primary Hardware Development	C/FFP	BGI Dallas, TX	0.919	0.283	Jan 2010	0.491	Jan 2011	0.000		0.491	12.414	14.107	14.107	
Primary Hardware Development	TM	DCS Corporation Alexandria, VA	5.081	1.386	Nov 2009	1.185	Nov 2010	0.000		1.185	0.000	7.652	7.652	
Primary Hardware Development	Various/ Various	Various Various	52.990	1.477		1.373		0.000		1.373	Continuing	Continuing	Continuing	
Aircraft Integration	SS/FFP	Rockwell Collins Cedar Rapids, IA	54.360	3.106	Jan 2010	0.170	Nov 2010	0.000		0.170	0.000	57.636	57.636	
Aircraft Integration	SS/CPFF	Bell Helicopter Hurst, TX	8.666	0.650	Jan 2010	0.000		0.000		0.000	0.000	9.316	9.316	
Aircraft Integration	WR	NAWC WD China Lake, CA	6.736	0.300	Nov 2009	0.387	Nov 2010	0.000		0.387	Continuing	Continuing	Continuing	
Aircraft Integration	Various/ Various	Various Various	39.065	1.106		1.006		0.000		1.006	Continuing	Continuing	Continuing	
Systems Engineering	WR	NAWC AD Patuxent River, MD	18.829	2.575		1.113		0.000		1.113	Continuing	Continuing	Continuing	
Systems Engineering	Various/ Various	Various Various	24.498	3.347		3.278		0.000		3.278	Continuing	Continuing	Continuing	
From FY94-02	Various/ Various	Various Various	277.703	0.000		0.000		0.000		0.000	0.000	277.703	Continuing	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy											DATE: February 2010																																																																																																																									
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Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract																																																																																																																							
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Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract																																																																																																																							
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Development Support	Various/ Various	Various Various	1.617	0.337		0.307		0.000		0.307	Continuing	Continuing	Continuing																																																																																																																							
Software Development	Various/ Various	Various Various	1.975	0.000		0.000		0.000		0.000	0.000	1.975	Continuing																																																																																																																							
Integrated Logistics Support	Various/ Various	Various Various	10.507	2.034		1.239		0.000		1.239	Continuing	Continuing	Continuing																																																																																																																							
Technical Data	Various/ Various	Various Various	0.735	0.000		0.000		0.000		0.000	0.000	0.735	Continuing																																																																																																																							
Studies and Analysis	Various/ Various	Various Various	11.060	5.096		4.116		0.000		4.116	Continuing	Continuing	Continuing																																																																																																																							
From FY94-02	Various/ Various	Various Various	24.636	0.000		0.000		0.000		0.000	0.000	24.636	Continuing																																																																																																																							
Subtotal			50.530	7.467		5.662		0.000		5.662																																																																																																																										
Remarks																																																																																																																																				

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy										DATE: February 2010	
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	

Test and Evaluation (\$ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 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	NAWC AD Patuxent River, MD	6.527	0.238		1.066		0.000		1.066	Continuing	Continuing	Continuing
Developmental Test and Evaluation	WR	NAWC WD China Lake, CA	3.025	0.999		0.000		0.000		0.000	0.000	4.024	Continuing
Developmental Test and Evaluation	Various/ Various	Various Various	6.975	0.000		0.000		0.000		0.000	0.000	6.975	Continuing
Operational Test and Evaluation	Various/ Various	Various Various	1.973	0.000		0.000		0.000		0.000	0.000	1.973	Continuing
Test Assets	Various/ Various	Various Various	1.776	0.000		0.000		0.000		0.000	0.000	1.776	Continuing
From FY94-02	Various/ Various	Various Various	24.363	0.000		0.000		0.000		0.000	0.000	24.363	Continuing
Subtotal			44.639	1.237		1.066		0.000		1.066			

Remarks

Management Services (\$ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 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 Various	43.819	4.728		2.983		0.000		2.983	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy											DATE: February 2010		
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>					
Management Services (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 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
Government Engineering Support	Various/ Various	Various Various	11.662	0.946		0.000		0.000		0.000	0.000	12.608	Continuing
Government Engineering Support	WR	NAWC AD Patuxent River, MD	10.460	0.639		2.716		0.000		2.716	0.000	13.815	Continuing
Program Management Support	Various/ Various	Various Various	8.694	0.136		0.302		0.000		0.302	0.000	9.132	Continuing
Program Management Support	WR	NAWC AD Patuxent River, MD	10.664	2.370		2.394		0.000		2.394	Continuing	Continuing	Continuing
Travel	WR	NAVAIR Patuxent River, MD	0.799	0.105		0.110		0.000		0.110	Continuing	Continuing	Continuing
Subtotal			86.098	8.924		8.505		0.000		8.505			
Remarks													
			Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			682.211	37.914		30.961		0.000		30.961			
Remarks													

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Exhibit R-4, RDT&E Schedule Profile: PB 2011 Navy																			DATE: February 2010										
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Fiscal Year AMC&D		2009				2010				2011				2012				2013				2014				2015			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones																													
MSU Risk Reduction/Study					▼																								
FCNS Network Processor Risk Reduction T/S						▼						▽																	
OSP3e Road Map Risk Reduction T/S						▼						▽																	
Test & Evaluation Milestones																													
Production Milestones																													
Production Deliveries																													

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Exhibit R-4, RDT&E Schedule Profile: PB 2011 Navy																							DATE: February 2010						
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Fiscal Year AVICS		2009				2010				2011				2012				2013				2014				2015			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones																													
Product Development																													
Test & Evaluation Milestones																													
Production Milestones																													
Production Deliveries																													

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Fiscal Year CNS/ATM		2009				2010				2011				2012				2013				2014				2015			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones																													
P-8 Integration/Certification RVSM & RNP RNAV																													
E-2D Integration/Certification MODE S & 8.33 KhZ																													
E-2D Integration/Certification RNP RNAV																													
Test & Evaluation Milestones																													
Production Milestones Platform Procurements (S/w upgrades ONLY)																													
Production Deliveries																													

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Exhibit R-4, RDT&E Schedule Profile: PB 2011 Navy

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

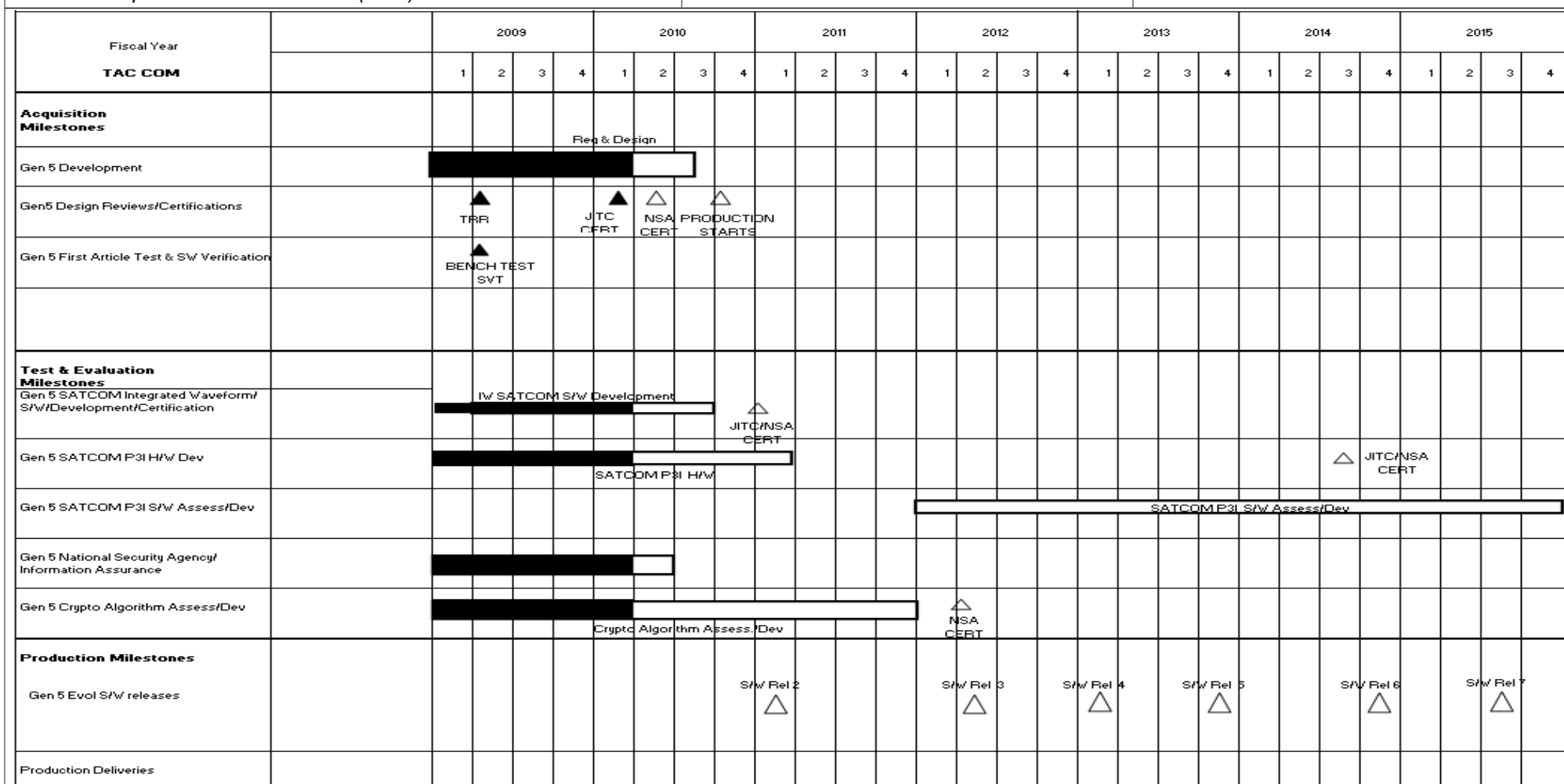
1319: Research, Development, Test & Evaluation, Navy
BA 5: Development & Demonstration (SDD)

R-1 ITEM NOMENCLATURE

PE 0604215N: Standards Development

PROJECT

0572: JT Service/NV Std Avionics CP/SB



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Exhibit R-4, RDT&E Schedule Profile: PB 2011 Navy

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APPROPRIATION/BUDGET ACTIVITY

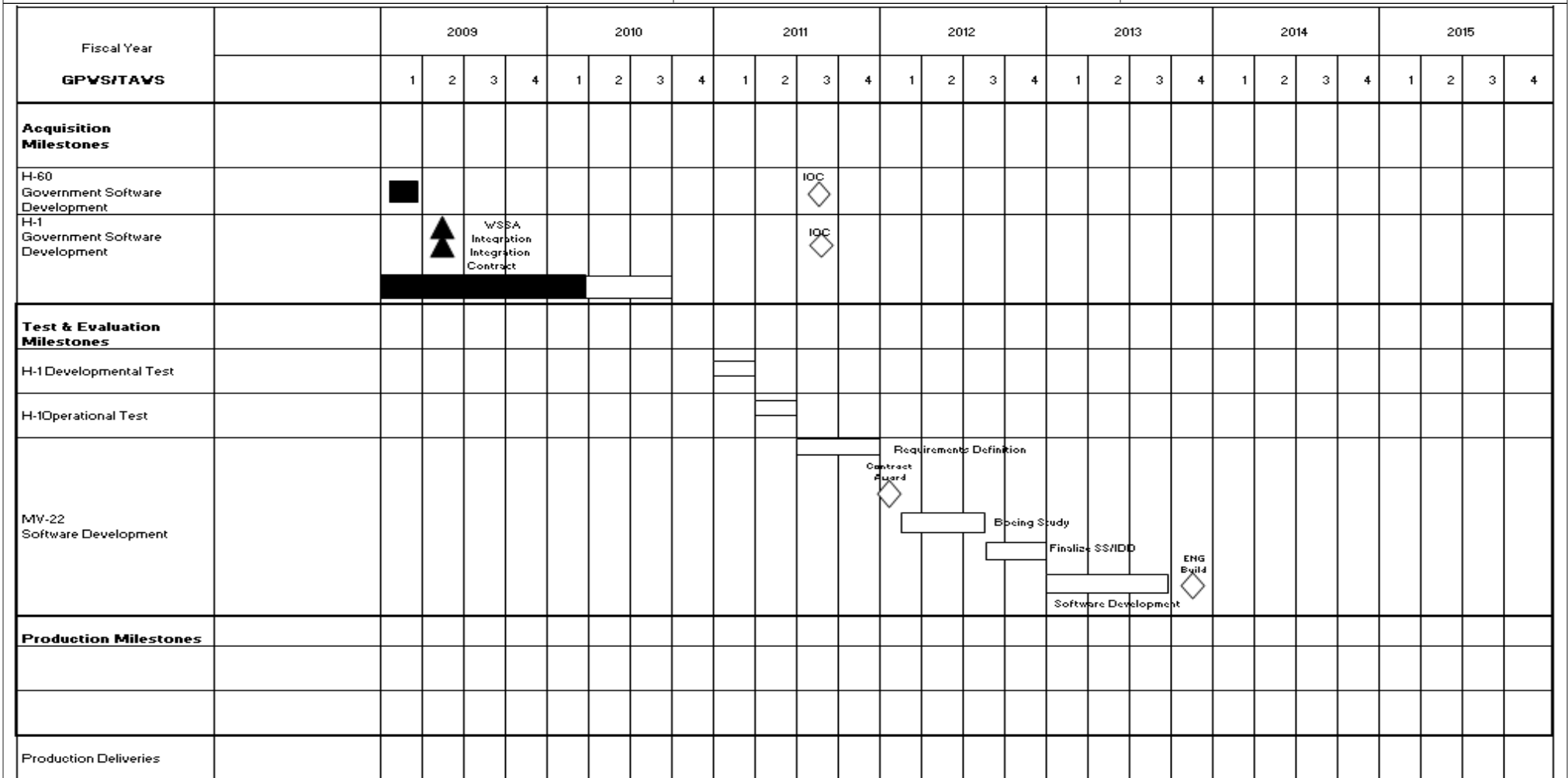
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PE 0604215N: Standards Development

PROJECT

0572: JT Service/NV Std Avionics CP/SB



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PE 0604215N: Standards Development

PROJECT

0572: JT Service/NV Std Avionics CP/SB

Fiscal Year MFOQA	2009				2010				2011				2012				2013				2014				2015							
Quarter	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Program Milestones	▲ IOCSR								▲ MS C				▲ IOC																			
Contracting (FVDA SW Modules) (Product Team)	▲ OPT 1 ▲ OPT 2				▲ OPT 2 ▲ OPT 3				▲ OPT 3 ▲ OPT 4				▲ OPT 4																			
F/A-18C/D/E/F EA-18G (Lead Platform)	◆ TRR Syst				◆ DT-B1 Software Rework				◆ TRR DT2 ◆ TRR DT-B3 ◆ SVR				F/A-18C/D/E/F & E/A-18G Fielding																			
Phase 2 - Helo CH-53E, MH-60R/S	Req.												◆ SRR ◆ SFR ◆ PDR ◆ CDR ◆ TRR				◆ SVR ◆ FD															
													Req. Dev				System Integration				DT-D1											
Phase 3 T-45																									◆ SRR / SFR ◆ PDR ◆ CDR							
																									Req. Dev				System Integration			
Phase 4 MV-22B																																

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Exhibit R-4, RDT&E Schedule Profile: PB 2011 Navy																							DATE: February 2010									
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Fiscal Year					2009				2010				2011				2012				2013				2014				2015			
					1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
COLLABORATIVE WARFARE																																
Acquisition Milestones									FY13 CW CYCLE				FY14 CW CYCLE				FY15 CW CYCLE				FY16 CW CYCLE				FY17 CW CYCLE				FY18 CW CYCLE			
Warfighting Gap Analysis																																
Candidate Solution ID																																
Candidate Evaluation (M&S)																																
Candidate Prioritization & Selection																																
Investment Strategy																																

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DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

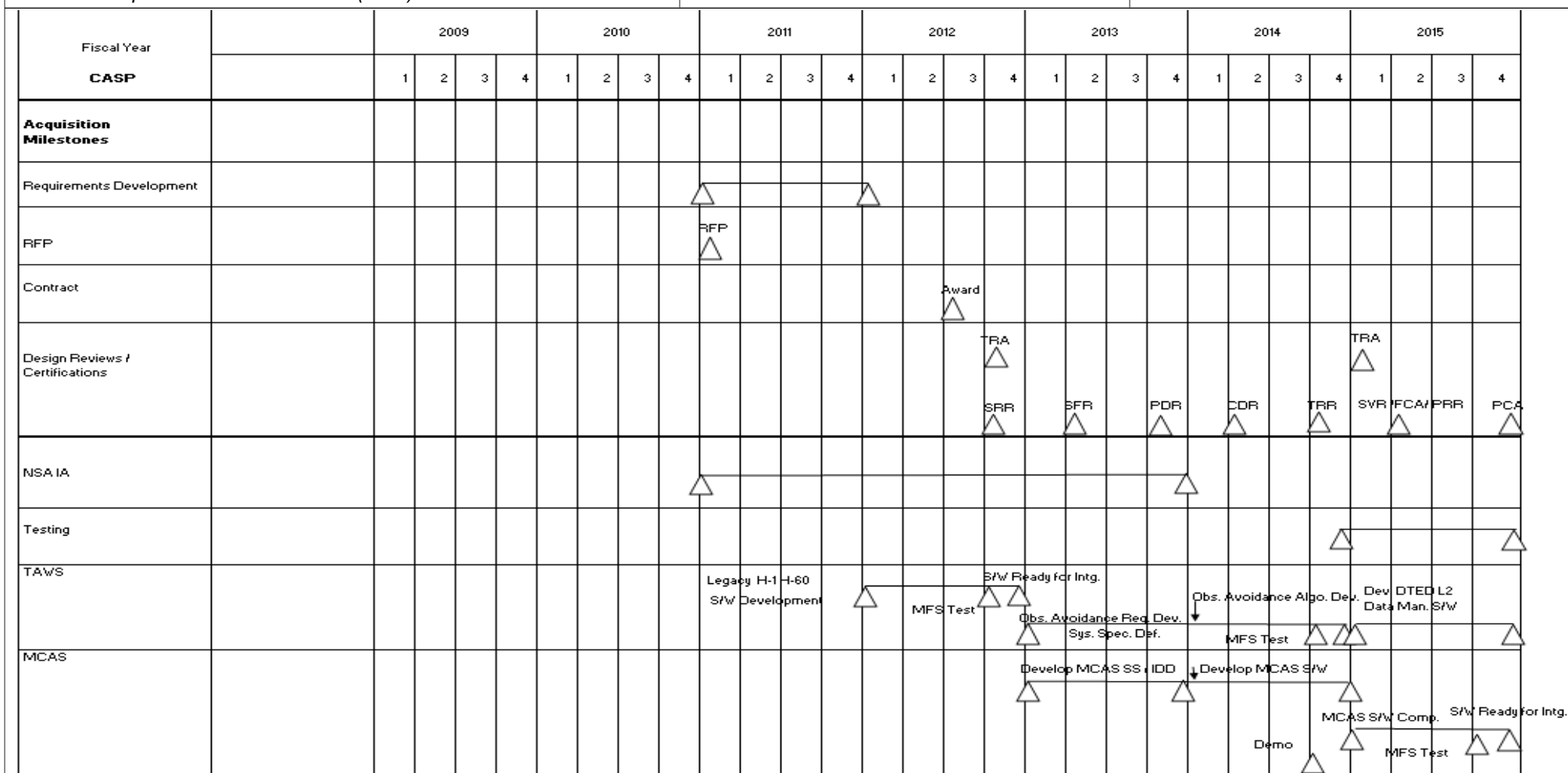
1319: Research, Development, Test & Evaluation, Navy
BA 5: Development & Demonstration (SDD)

R-1 ITEM NOMENCLATURE

PE 0604215N: Standards Development

PROJECT

0572: JT Service/NV Std Avionics CP/SB



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Exhibit R-4A, RDT&E Schedule Details: PB 2011 Navy			DATE: February 2010
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>	

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
AMCD	1	2009	1	2011
-MSU Risk Reduction/Study	1	2009	4	2009
-FCNS Network Processor Risk Reduction T/S	1	2010	1	2011
-OSP3e Road Map Risk Reduction T/S	1	2010	1	2011
AWICS	1	2009	1	2009
-Product Development	1	2009	1	2009
CNS/ATM	4	2009	2	2011
-P-8 Integration/Certification RVSM, RNP RNAV	3	2010	2	2011
-E-2D Integration/Certification MODE S , 8.33 KHZ	4	2009	2	2010
-E-2D Integration/Certification RNP RNAV	3	2010	4	2010
TACCOM	1	2009	4	2015
-GEN 5 Development	1	2009	3	2010
-GEN 5 Test Readiness Review (TRR)	2	2009	2	2009
-GEN 5 Joint Interoperability Test Command Certification	1	2010	1	2010
-GEN 5 Joint Interoperability Test Command Certification1	4	2010	1	2011
-GEN 5 National Security Agency Certification	2	2010	2	2010
-GEN 5 Joint Interoperability Test Command Certification2	3	2014	3	2014
-GEN 5 Production Starts	4	2010	4	2010

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Exhibit R-4A, RDT&E Schedule Details: PB 2011 Navy			DATE: February 2010	
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	Start		End	
Event	Quarter	Year	Quarter	Year
-GEN 5 First Article Test & SW Verification	2	2009	2	2009
-GEN 5 IW SATCOM S/W Development	1	2009	3	2010
-GEN 5 H/W Development for SATCOM P3I	1	2009	1	2011
-GEN 5 SATCOM P3I S/W Assess/Dev	1	2012	4	2015
-GEN 5 National Security Agency Certification1	2	2012	2	2012
-GEN 5 National Security Agency/Information Assurance	1	2009	2	2010
-GEN 5 Crypto Algorithm Assess/Dev	1	2009	4	2011
-GEN 5 Evol S/W Releases 2	1	2011	1	2011
-GEN 5 Evol S/W Releases 3	2	2012	2	2012
-GEN 5 Evol S/W Releases 4	1	2013	1	2013
-GEN 5 Evol S/W Releases 5	4	2013	4	2013
-GEN 5 Evol S/W Releases 6	4	2014	4	2014
-GEN 5 Evol S/W Releases 7	3	2015	3	2015
GPWS/TAWS	1	2009	4	2013
-H-60 Government Software Development/Integration	1	2009	1	2009
-H-60 Initial Operational Capability (IOC)	3	2011	3	2011
-H-1 Harris Integration Contract	2	2009	2	2009
-H-1 Government Software Development/Integration	1	2009	3	2010
-H-1 WSSA Integration Contract	2	2009	2	2009
-H-1 Developmental Testing	1	2011	1	2011

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Exhibit R-4A, RDT&E Schedule Details: PB 2011 Navy			DATE: February 2010	
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT		
1319: Research, Development, Test & Evaluation, Navy BA 5: Development & Demonstration (SDD)	PE 0604215N: Standards Development	0572: JT Service/NV Std Avionics CP/SB		
Event	Start		End	
	Quarter	Year	Quarter	Year
-H-1 Operational Testing	2	2011	2	2011
-H-1 Initial Operational Capability (IOC)	3	2011	3	2011
-MV-22 Requirements Definition	3	2011	4	2011
-MV-22 Contract Award	1	2012	1	2012
-MV-22 Boeing Study	1	2012	3	2012
-MV-22 Finalize SS/IDD	3	2012	4	2012
-MV-22 Software Development	1	2013	3	2013
-MV-22 Engineering Build Delivery	4	2013	4	2013
MFOQA	1	2009	4	2015
-IOC SR	2	2009	4	2009
-MS C	4	2011	4	2011
-Initial Operational Capability (IOC)	2	2012	2	2012
-FVDA SW Modules OPT1	1	2009	1	2009
-FVDA SW Modules OPT2	1	2010	1	2010
-FVDA SW Modules OPT3	1	2011	1	2011
-FVDA SW Modules OPT4	1	2012	1	2012
-Product Team OPT2	1	2009	1	2009
-Product Team OPT3	1	2010	1	2010
-Product Team OPT4	1	2011	1	2011
-F/A-18 Systems Integration	1	2009	2	2009

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Exhibit R-4A, RDT&E Schedule Details: PB 2011 Navy			DATE: February 2010	
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	Start		End	
Event	Quarter	Year	Quarter	Year
-F/A-18 Test Readiness Review (TRR)	2	2009	2	2009
-F/A-18 Test Readiness Review (TRR)1	1	2011	1	2011
-F/A-18 Test Readiness Review (TRR)2	2	2011	2	2011
-F/A-18 Test Readiness Review (TRR)3	3	2011	4	2011
-F/A-18 DT-B1	2	2009	1	2010
-F/A-18 Software Rework	2	2010	1	2011
-F/A-18 DRR	2	2010	2	2010
-F/A-18 DRR2	4	2010	4	2010
-F/A-18 DT-B2	1	2011	2	2011
-F/A-18 DT-B3	2	2011	3	2011
-F/A-18 SVR	3	2011	3	2011
-F/A-18 Fielding Decision	4	2011	2	2015
-MH-60R/S & CH-53E Requirements Development	1	2009	1	2009
-MH-60R/S & CH-53E System Readiness Review (SRR)	1	2012	1	2012
-MH-60R/S & CH-53E System Readiness Review (SFR)	2	2012	2	2012
-MH-60R/S & CH-53E Requirements Development1	1	2012	2	2012
-MH-60R/S & CH-53E Systems Integration	3	2012	1	2014
-MH-60R/S & CH-53E Preliminary Design Review (PDR)	3	2012	4	2012
-MH-60R/S & CH-53E Critical Design Review (CDR)	1	2013	1	2013
-MH-60R/S & CH-53E Test Readiness Review (TRR)	3	2013	4	2013

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Exhibit R-4A, RDT&E Schedule Details: PB 2011 Navy			DATE: February 2010	
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	Start		End	
Event	Quarter	Year	Quarter	Year
-MH-60R/S & CH-53E DT-D1	2	2014	4	2014
-MH-60R/S & CH-53E SVR	3	2013	4	2014
-MH-60R/S & CH-53E Fielding Decision	4	2014	4	2014
-T-45 Requirements Development	3	2014	4	2014
-T-45 System Readiness Review (SRR/SFR)	4	2014	4	2014
-T-45 System Integration	1	2015	4	2015
-T-45 Preliminary Design Review (PDR)	2	2015	2	2015
-T-45 Critical Design Review (CDR)	3	2015	3	2015
COLLABORATIVE WARFARE	1	2009	4	2015
-Warfighting Gap Analysis	2	2010	2	2010
-Warfighting Gap Analysis1	1	2011	2	2011
-Warfighting Gap Analysis2	1	2012	2	2012
-Warfighting Gap Analysis3	1	2013	2	2013
-Warfighting Gap Analysis4	1	2014	2	2014
-Warfighting Gap Analysis5	1	2015	2	2015
-Candidate Solution Identification	3	2010	4	2010
-Candidate Solution Identification1	2	2011	3	2011
-Candidate Solution Identification2	2	2012	3	2012
-Candidate Solution Identification3	2	2013	3	2013
-Candidate Solution Identification4	2	2014	3	2014

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Exhibit R-4A, RDT&E Schedule Details: PB 2011 Navy			DATE: February 2010
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Event	Start		End	
	Quarter	Year	Quarter	Year
-Candidate Solution Identification5	2	2015	3	2015
-Candidate Evaluation (Modeling & Sim)	3	2010	1	2011
-Candidate Evaluation (Modeling & Sim)1	2	2011	4	2011
-Candidate Evaluation (Modeling & Sim)2	2	2012	4	2012
-Candidate Evaluation (Modeling & Sim)3	2	2013	4	2013
-Candidate Evaluation (Modeling & Sim)4	2	2014	4	2014
-Candidate Evaluation (Modeling & Sim)5	2	2015	4	2015
-Candidate Prioritization & Selection	2	2011	2	2011
-Candidate Prioritization & Selection1	1	2012	1	2012
-Candidate Prioritization & Selection2	1	2013	1	2013
-Candidate Prioritization & Selection3	1	2014	1	2014
-Candidate Prioritization & Selection4	1	2015	1	2015
-Investment Strategy	2	2011	2	2011
-Investment Strategy1	1	2012	1	2012
-Investment Strategy2	1	2013	1	2013
-Investment Strategy3	1	2014	1	2014
-Investment Strategy4	1	2015	1	2015
COLLISION AVOIDANCE SAFETY PROGRAM	1	2009	4	2015
-Requirements Development	1	2011	1	2012
-RFP	1	2011	1	2011

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Event	Start		End	
	Quarter	Year	Quarter	Year
-Contract Award	3	2012	3	2012
-Design Reviews/Certifications TRA	4	2012	4	2012
-Design Reviews/Certifications SRR	4	2012	4	2012
-Design Reviews/Certifications SFR	2	2013	2	2013
-Design Reviews/Certifications PDR	4	2013	4	2013
-Design Reviews/Certifications CDR	2	2014	2	2014
-Design Reviews/Certifications TRR	4	2014	4	2014
-Design Reviews/Certifications TRA1	1	2015	1	2015
-Design Reviews/Certifications SVR/FCA/PRR	2	2015	2	2015
-Design Reviews/Certifications PCA	4	2015	4	2015
-NSA Information Assurance	1	2011	4	2013
-Testing	4	2014	4	2015
-TAWS Legacy H-1/H-60 S/W Integration	1	2012	4	2012
-TAWS Legacy H-1/H-60 MFS Test	4	2012	4	2012
-TAWS Legacy H-1/H-60 Obs Avoidance Req Dev	1	2013	4	2014
-TAWS Legacy H-1/H-60 MFS Test1	4	2014	4	2014
-TAWS MFS Test	4	2014	4	2014
-TAWS Legacy H-1/H-60 Dev DTED L2 Data Man S/W	1	2015	4	2015
-MCAS Dev MCAS SS/IDD	1	2013	1	2015
-MCAS Dev MCAS SW	4	2013	4	2013

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Exhibit R-4A, RDT&E Schedule Details: PB 2011 Navy			DATE: February 2010																									
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>																								
		<table> <tr> <th rowspan="2">Event</th><th colspan="2">Start</th><th colspan="2">End</th></tr> <tr> <th>Quarter</th><th>Year</th><th>Quarter</th><th>Year</th></tr> <tr> <td>-MCAS Demo</td><td align="center">4</td><td align="center">2014</td><td align="center">4</td><td align="center">2014</td></tr> <tr> <td>-MCAS S/W Comp. S/W Ready for Integ.</td><td align="center">4</td><td align="center">2014</td><td align="center">4</td><td align="center">2015</td></tr> <tr> <td>-MCAS Test</td><td align="center">4</td><td align="center">2015</td><td align="center">4</td><td align="center">2015</td></tr> </table>			Event	Start		End		Quarter	Year	Quarter	Year	-MCAS Demo	4	2014	4	2014	-MCAS S/W Comp. S/W Ready for Integ.	4	2014	4	2015	-MCAS Test	4	2015	4	2015
Event	Start		End																									
	Quarter	Year	Quarter	Year																								
-MCAS Demo	4	2014	4	2014																								
-MCAS S/W Comp. S/W Ready for Integ.	4	2014	4	2015																								
-MCAS Test	4	2015	4	2015																								

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy								DATE: February 2010			
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>			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
1857: <i>Calibration Standards</i>	1.511	2.023	1.401	0.000	1.401	1.457	1.952	1.997	2.038	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 (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 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 (HM&E) as well as Navy Weapon Systems with calibration standards traceable to the National Institute of Standards and Technology.

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

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Calibration Standards	1.504	2.023	1.401	0.000	1.401
<p><i>FY 2009 Accomplishments:</i></p> <p>(\$1.204) Complete 1 calibration standard (hardware) in support of chemical biological detection systems, reduce crew size initiatives, and shipboard communication systems and continue to development of 1 additional standard.</p> <p>(\$.300) Continue development of standards for wireless micro electrical mechanical systems (MEMS) sensors and analytical metrology.</p> <p><i>FY 2010 Plans:</i></p> <p>(\$1.295) Continue development of 3 new calibration standards in support of chemical biological detection systems.</p>					

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy				DATE: February 2010	
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B. Accomplishments/Planned Program (\$ in Millions)					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
(\$.300) Begin development of standards in support for wireless micro electrical mechanical sensors (MEMS) 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. <i>FY 2011 Base Plans:</i> Plan (\$.940) Complete (2) calibration standards (hardware) in support of chemical and biological detection systems. (\$.252) Continue development of portable calibration standards in support of Fleet for in-situ wireless closed loop calibrations on board naval ships. (\$.209) Continue development of standards in support for wireless micro electrical sensors in support of next generation DD(X) ships and Smart Carriers.					
Acquisition Workforce <i>FY 2009 Accomplishments:</i> DAWDF Realignment	0.007	0.000	0.000	0.000	0.000
Accomplishments/Planned Programs Subtotals	1.511	2.023	1.401	0.000	1.401
C. Other Program Funding Summary (\$ in Millions) N/A					
D. Acquisition Strategy N/A					

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy		DATE: February 2010
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>
E. Performance Metrics <p>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 (NBC) 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 (NBC) 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.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy											DATE: February 2010																																																																																													
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>																																																																																																
<p>Product Development (\$ in Millions)</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Cost Category Item</th> <th rowspan="2">Contract Method & Type</th> <th rowspan="2">Performing Activity & Location</th> <th rowspan="2">Total Prior Years Cost</th> <th colspan="2">FY 2010</th> <th colspan="2">FY 2011 Base</th> <th colspan="2">FY 2011 OCO</th> <th>FY 2011 Total</th> <th rowspan="2">Cost To Complete</th> <th rowspan="2">Total Cost</th> <th rowspan="2">Target Value of Contract</th> </tr> <tr> <th>Cost</th> <th>Award Date</th> <th>Cost</th> <th>Award Date</th> <th>Cost</th> <th>Award Date</th> <th>Cost</th> </tr> </thead> <tbody> <tr> <td>Primary Hardware Development</td> <td>WR</td> <td>NSWC Corona Corona, CA</td> <td align="right">1.941</td> <td align="right">1.389</td> <td>Jan 2010</td> <td align="right">0.851</td> <td>Oct 2010</td> <td align="right">0.000</td> <td></td> <td align="right">0.851</td> <td align="right">0.000</td> <td align="right">4.181</td> <td>Continuing</td> </tr> <tr> <td align="right" colspan="3">Subtotal</td><td align="right">1.941</td><td align="right">1.389</td><td></td><td align="right">0.851</td><td></td><td align="right">0.000</td><td></td><td align="right">0.851</td><td align="right">0.000</td><td align="right">4.181</td><td></td></tr> </tbody> </table>														Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Primary Hardware Development	WR	NSWC Corona Corona, CA	1.941	1.389	Jan 2010	0.851	Oct 2010	0.000		0.851	0.000	4.181	Continuing	Subtotal			1.941	1.389		0.851		0.000		0.851	0.000	4.181																																											
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract																																																																																											
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost																																																																																														
Primary Hardware Development	WR	NSWC Corona Corona, CA	1.941	1.389	Jan 2010	0.851	Oct 2010	0.000		0.851	0.000	4.181	Continuing																																																																																											
Subtotal			1.941	1.389		0.851		0.000		0.851	0.000	4.181																																																																																												
Remarks																																																																																																								
<p>Management Services (\$ in Millions)</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Cost Category Item</th> <th rowspan="2">Contract Method & Type</th> <th rowspan="2">Performing Activity & Location</th> <th rowspan="2">Total Prior Years Cost</th> <th colspan="2">FY 2010</th> <th colspan="2">FY 2011 Base</th> <th colspan="2">FY 2011 OCO</th> <th>FY 2011 Total</th> <th rowspan="2">Cost To Complete</th> <th rowspan="2">Total Cost</th> <th rowspan="2">Target Value of Contract</th> </tr> <tr> <th>Cost</th> <th>Award Date</th> <th>Cost</th> <th>Award Date</th> <th>Cost</th> <th>Award Date</th> <th>Cost</th> </tr> </thead> <tbody> <tr> <td>Contractor Engineering Support</td> <td>WR</td> <td>NSWC Corona Corona, CA</td> <td align="right">0.760</td> <td align="right">0.307</td> <td>Jan 2010</td> <td align="right">0.209</td> <td>Oct 2010</td> <td align="right">0.000</td> <td></td> <td align="right">0.209</td> <td align="right">0.000</td> <td align="right">1.276</td> <td>Continuing</td> </tr> <tr> <td>Government Engineering Support</td> <td>WR</td> <td>NSWC Corona Corona, CA</td> <td align="right">1.542</td> <td align="right">0.307</td> <td>Jan 2010</td> <td align="right">0.321</td> <td>Oct 2010</td> <td align="right">0.000</td> <td></td> <td align="right">0.321</td> <td align="right">0.000</td> <td align="right">2.170</td> <td>Continuing</td> </tr> <tr> <td>Defense Acquisition Workforce</td> <td>Various/ Various</td> <td>Various Various</td> <td align="right">0.007</td> <td align="right">0.000</td> <td></td> <td align="right">0.000</td> <td></td> <td align="right">0.000</td> <td></td> <td align="right">0.000</td> <td align="right">0.000</td> <td align="right">0.007</td> <td>Continuing</td> </tr> <tr> <td>Travel</td> <td>WR</td> <td>NSWC Corona Corona, CA</td> <td align="right">0.038</td> <td align="right">0.020</td> <td>Jan 2010</td> <td align="right">0.020</td> <td>Oct 2010</td> <td align="right">0.000</td> <td></td> <td align="right">0.020</td> <td align="right">0.000</td> <td align="right">0.078</td> <td>Continuing</td> </tr> <tr> <td align="right" colspan="3">Subtotal</td><td align="right">2.347</td><td align="right">0.634</td><td></td><td align="right">0.550</td><td></td><td align="right">0.000</td><td></td><td align="right">0.550</td><td align="right">0.000</td><td align="right">3.531</td><td></td></tr> </tbody> </table>														Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Contractor Engineering Support	WR	NSWC Corona Corona, CA	0.760	0.307	Jan 2010	0.209	Oct 2010	0.000		0.209	0.000	1.276	Continuing	Government Engineering Support	WR	NSWC Corona Corona, CA	1.542	0.307	Jan 2010	0.321	Oct 2010	0.000		0.321	0.000	2.170	Continuing	Defense Acquisition Workforce	Various/ Various	Various Various	0.007	0.000		0.000		0.000		0.000	0.000	0.007	Continuing	Travel	WR	NSWC Corona Corona, CA	0.038	0.020	Jan 2010	0.020	Oct 2010	0.000		0.020	0.000	0.078	Continuing	Subtotal			2.347	0.634		0.550		0.000		0.550	0.000	3.531	
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract																																																																																											
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Remarks																																																																																																								

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy							DATE: February 2010				
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>				
	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	4.288	2.023		1.401		0.000		1.401	0.000	7.712	
Remarks											

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy								DATE: February 2010			
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>			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
2311: <i>Stores Planning and Weaponneering Module</i>	11.119	12.365	12.377	0.000	12.377	12.926	13.489	13.672	13.939	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 Weaponneering Module: The Naval Aircraft Weaponneering Components (NAWC) project, now referred to as the Weaponneering 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 T/M/S specific safety-of-flight envelopes, and perform detailed weapons employment planning. WASP is approved by 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 weaponneering capabilities that are critical requirements for Interdiction, Armed 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 NAVAIRSYSCOM.

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

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Product Development	6.379	6.301	7.456	0.000	7.456
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 Weapons and Release Planning (WARP) tool using WASP funding of \$1.3M in FY10 and \$.7M in FY11. Define					

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy				DATE: February 2010		
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 Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
requirements to integrate WASP components into the Joint Mission Planning System (JMPS). Provide domain engineering support for weapons separation, aircraft loads, flutter, fuzing, 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 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 JSOW/JDAM/SLAM-ER and other weapons mission planning systems as required.						
FY 2009 Accomplishments: Completed and released WASP Version 1.2.2 to fleet.						
FY 2010 Plans: Complete and release WASP V 1.2.3 to fleet. \$1.3M WASP funding provided to NAWCWD, JSSA for WARP product development.						
FY 2011 Base Plans: Complete WASP V1.2.4 for FY12 release to fleet and analyze requirements for WASP V3.0. \$.7M WASP funding provided to NAWCWD, JSSA for WARP product development.						
Test and Evaluation (T&E) 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 (WASP		3.414	4.314	2.128	0.000	2.128

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy				DATE: February 2010	
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 Weaponneering Module	
B. Accomplishments/Planned Program (\$ in Millions)					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
V1.2, V1.2.2, V1.2.3 WASP V3.0, and V3.1). Provide 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 DoN and DoD software mandates and directives. These include ISNS (IT-21), DIACAP NMCI, DITPR-DON and FAM. All Fleet released software must comply with DoN and DoD software directives or will not be allowed to run on ship LANs or NMCI. FY 2009 Accomplishments: Completed test and evaluation of WASP V 1.2.2 in order to release to the fleet. FY 2010 Plans: Continue test and evaluation of WASP V 1.2.3 in order to release to the fleet. FY 2011 Base 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.					
Program Management Provide program management, which includes 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 FYDP.	1.326	1.750	2.793	0.000	2.793

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy							DATE: February 2010				
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 Weaponneering Module					
B. Accomplishments/Planned Program (\$ in Millions)											
						FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	
FY 2009 Accomplishments: Provided program management support to the WASP team in order to successfully release WASP V 1.2.3 to the fleet.											
FY 2010 Plans: Continue project management support to the WASP for future releases of WASP to the fleet.											
FY 2011 Base Plans: Continue project management support to the WASP for future releases of WASP to the fleet.											
Accomplishments/Planned Programs Subtotals						11.119	12.365	12.377	0.000	12.377	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• RDTE/3858: Air Force Mission Planning	97.296	91.995	99.261	0.000	99.261	101.224	101.635	0.000	0.000	0.000	491.411
D. Acquisition Strategy											
Weaponneering and Stores Planning (WASP) products, delivered annually, were developed in-house by NAVAIR (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 the various contractors. WASP utilizes the Mission Planning Enterprise Contract (MPEC). The various government, engineering, test, and support teams (test facilities, functional qualification testing and certification/accreditation test) are supplemental with contract labor procured predominately through BPA contracts.											
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. End product is a pilot's z-diagram knee board card.											

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy		DATE: February 2010
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>
<p>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.</p> <p>Interoperability: Threshold value is 100% stand alone value. Objective value is 100% stand alone value.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy											DATE: February 2010			
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 Weaponneering Module				
Product Development (\$ in Millions)														
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 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	WR	NAWCAD Patuxent River, MD	16.820	0.171	Nov 2009	0.010	Nov 2010	0.000		0.010	Continuing	Continuing	Continuing	
Product Development	WR	NAWCWD China Lake, CA	0.448	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing	
Product Development	WR	NAWCWD Pt. Mugu, CA	0.000	0.160	Nov 2009	0.000	Nov 2010	0.000		0.000	Continuing	Continuing	Continuing	
Primary Software Development	C/CPFF	MPEC Hanscom AFB, MA	12.404	5.059	Nov 2009	0.000	Nov 2010	0.000		0.000	Continuing	Continuing	Continuing	
Product Development	Various/CPFF	Various Various	29.314	0.911	Nov 2009	0.203	Nov 2010	0.000		0.203	Continuing	Continuing	Continuing	
Product Development	WR	Not Specified Eglin AFB, FL	0.000	0.000		0.074	Nov 2010	0.000		0.074	Continuing	Continuing	Continuing	
Primary Software Development	C/CPFF	Not Specified LMSS/TBD	0.000	0.000		6.469	Nov 2010	0.000		6.469	Continuing	Continuing	Continuing	
Product Development	WR	NWCWD JSSA	0.000	0.000		0.700	Nov 2010	0.000		0.700	Continuing	Continuing	Continuing	
Systems Engineering	WR	NAWCAD Patuxent River, MD	8.182	0.239	Nov 2009	0.000		0.000		0.000	0.000	8.421	Continuing	
Subtotal			67.168	6.540		7.456		0.000		7.456				
Remarks														
*Mission Planning Enterprise Contract (MPEC), **LMSS Contract to be awarded 3/09 is FFP, Follow-on contract will be CPFF and is TBD. Dollars may not add due to rounding.														

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy											DATE: February 2010			
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 Weaponneering Module					
Test and Evaluation (\$ in Millions)														
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 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	WR	NAWCAD Patuxent River, MD	16.585	0.813	Nov 2009	0.793	Nov 2010	0.000		0.793	Continuing	Continuing	Continuing	
Test & Evaluation	WR	NAWCWD China Lake, CA	0.352	0.025	Nov 2009	0.000		0.000		0.000	Continuing	Continuing	Continuing	
Test & Evaluation	WR	NAWCWD Pt. Mugu, CA	0.100	0.000		0.165	Nov 2010	0.000		0.165	Continuing	Continuing	Continuing	
Test & Evaluation	C/CPFF	Various Various	2.524	3.476	Nov 2009	1.170	Nov 2010	0.000		1.170	Continuing	Continuing	Continuing	
Subtotal			19.561	4.314		2.128		0.000		2.128				
Remarks														
Management Services (\$ in Millions)														
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 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	WR	NAWCWD Patuxent River, MD	7.512	0.576	Nov 2009	0.520	Nov 2010	0.000		0.520	Continuing	Continuing	Continuing	
Program Management Support	WR	NAWCWD Pt. Mugu, CA	0.965	0.000	Nov 2009	0.000		0.000		0.000	Continuing	Continuing	Continuing	
	WR	NAWCAD	3.952	0.875	Nov 2009	0.853	Nov 2010	0.000		0.853	Continuing	Continuing	Continuing	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy											DATE: February 2010			
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>				
Management Services (\$ in Millions)														
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 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	
Government Engineering Support		Patuxent River, MD												
Program Management Support	Various/ CPFF	Various Various	0.000	0.000		0.659	Nov 2010	0.000		0.659	Continuing	Continuing	Continuing	
Government Engineering Support	WR	NAWCWD China Lake, CA	1.098	0.000		0.017	Nov 2010	0.000		0.017	Continuing	Continuing	Continuing	
Travel	WR	NAWCAD Patuxent River, MD	1.201	0.060	Nov 2009	0.060	Nov 2010	0.000		0.060	Continuing	Continuing	Continuing	
Government Engineering Support	Various/ CPFF	Various Various	0.000	0.000		0.684	Nov 2010	0.000		0.684	Continuing	Continuing	Continuing	
Subtotal			14.728	1.511		2.793		0.000		2.793				
Remarks														
			Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals			101.457	12.365		12.377		0.000		12.377				
Remarks														

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Exhibit R-4, RDT&E Schedule Profile: PB 2011 Navy																							DATE: February 2010					
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 Weaponneering Module						
EXHIBIT R4, Schedule Profile																							DATE: December 2009					
APPROPRIATION/BUDGET ACTIVITY RDT&E, II / BA-5 System Development & Demonstration											PROGRAM ELEMENT NUMBER AND NAME 0604215N Standards Development											PROJECT NUMBER AND NAME 2311 Navy Stores Planning and Weaponneering Module						
Fiscal Year	2009				2010				2011				2012				2013				2014				2015			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Acquisition Milestones																												
WASP V.1.2.2 (F/A-18A/B/C/D/E/F)																												
WASP V.1.2.3 (F/A-18A/B/C/D/E/F)																												
WASP V.3.0 (F/A-18A/B/C/D/E/F) - Phase I to design only (used in V1.2.4)																												
WASP V.1.2.4 (F/A-18A/B/C/D/E/F)																												
WASP V.3.0 (F/A-18A/B/C/D/E/F) - Phase II SRR to release to Fleet (Rearchitecture)																												
WASP V3.1 (F/A-18A-F) Architecture & Decoupling																												
WASP V3.2 (F/A-18A/B/C/D/E/F)																												
Test & Evaluation Milestones																												
WASP V.1.2.2 (F/A-18A/B/C/D/E/F)																												
WASP V.1.2.3 (F/A-18A/B/C/D/E/F)																												
WASP V.1.2.4 (F/A-18A/B/C/D/E/F)																												
WASP V.3.0 (F/A-18A-F) - Phase II SRR to release to Fleet (Rearchitecture)																												
WASP V3.1 (F/A-18A-F) Architecture & Decoupling																												
WASP V3.2 (F/A-18A/B/C/D/E/F)																												
Production Milestones																												
WASP V.1.2.2 (F/A-18A/B/C/D/E/F)																												
WASP V.1.2.3 (F/A-18A/B/C/D/E/F)																												
WASP V.1.2.4 (F/A-18A/B/C/D/E/F)																												
WASP V.3.0 Release (F/A-18A/B/C/D/E/F)																												
WASP V3.1 Release (F/A-18A-F) Architecture & Decoupling																												
WASP V3.2 Release (F/A-18A/B/C/D/E/F)																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2011 Navy			DATE: February 2010
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>	

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
WASP V.1.2.2 (F/A-18A/B/C/D/E/F) FQT	2	2009	2	2009
WASP V.1.2.3 (F/A-18A/B/C/D/E/F) CDR	2	2009	2	2009
WASP V.1.2.3 (F/A-18A/B/C/D/E/F) TRR	4	2009	4	2009
WASP V.1.2.3 (F/A-18A/B/C/D/E/F) TIRB	2	2010	2	2010
WASP V.1.2.3 (F/A-18A/B/C/D/E/F) FQT	2	2010	2	2010
WASP V.1.2.4 (F/A-18A/B/C/D/E/F) SRR	2	2010	2	2010
WASP V.1.2.4 (F/A-18A/B/C/D/E/F) CDR	3	2010	3	2010
WASP V.1.2.4 (F/A-18A/B/C/D/E/F) TRR	1	2011	1	2011
WASP V.1.2.4 (F/A-18A/B/C/D/E/F) TIRB	4	2011	4	2011
WASP V.1.2.4 (F/A-18A/B/C/D/E/F) FQT	4	2011	4	2011
WASP V3.0 Phase I (F/A-18A/B/C/D/E/F) SRR	2	2009	2	2009
WASP V3.0 Phase I (F/A-18A/B/C/D/E/F) CDR	2	2010	2	2010
WASP V3.0 Phase II (F/A-18A/B/C/D/E/F) SRR	3	2011	3	2011
WASP V3.0 Phase II (F/A-18A/B/C/D/E/F) CDR	1	2012	1	2012
WASP V3.0 Phase II (F/A-18A/B/C/D/E/F) TRR	3	2012	3	2012
WASP V3.0 Phase II (F/A-18A/B/C/D/E/F) TIRB	2	2013	2	2013
WASP V3.0 Phase II (F/A-18A/B/C/D/E/F) FQT	2	2013	2	2013
WASP V3.1 (F/A-18A/B/C/D/E/F) Architecture & Decoupling SRR	3	2013	3	2013

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Exhibit R-4A, RDT&E Schedule Details: PB 2011 Navy			DATE: February 2010	
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 Weaponneering Module
		Start		End
Event	Quarter	Year	Quarter	Year
WASP V3.1 (F/A-18A/B/C/D/E/F) Architecutre & Decoupling CDR	1	2014	1	2014
WASP V3.1 (F/A-18A/B/C/D/E/F) Architecture & Decoupling TRR	3	2014	3	2014
WASP V3.1 (F/A-18A/B/C/D/E/F) Architecture & Decoupling TIRB	2	2015	2	2015
WASP V3.1 (F/A-18A/B/C/D/E/F) Architecture & Decoupling FQT	2	2015	2	2015
WASP V3.2 (F/A-18A/B/C/D/E/F) SRR	4	2014	4	2014
WASP V3.2 (F/A-18A/B/C/D/E/F) CDR	2	2015	2	2015
WASP V3.2 (F/A-18A/B/C/D/E/F) TRR	4	2015	4	2015
WASP V.1.2.2 (F/A-18A/B/C/D/E/F)	2	2009	2	2009
WASP V.1.2.3 (F/A-18A/B/C/D/E/F)	1	2010	2	2010
WASP V.1.2.4 (F/A-18A/B/C/D/E/F)	2	2011	3	2011
WASP V3.0 Phase II (F/A-18A/B/C/D/E/F)	4	2012	1	2013
WASP V3.1 (F/A-18A/B/C/D/E/F) Architecture & Decoupling	4	2014	1	2015
WASP V3.2 (F/A-18A/B/C/D/E/F)	4	2015	4	2015
WASP V.1.2.2 (F/A-18A/B/C/D/E/F) IOC	2	2009	2	2009
WASP V.1.2.3 (F/A-18A/B/C/D/E/F) IOC	4	2010	4	2010
WASP V.1.2.4 (F/A-18A/B/C/D/E/F) IOC	1	2012	1	2012
WASP V3.0 Phase II (F/A-18A/B/C/D/E/F) IOC	3	2013	3	2013
WASP V3.1 (F/A-18A/B/C/D/E/F) Architecture & Decoupling IOC	1	2015	1	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy								DATE: February 2010			
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>			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
2312: <i>Common Helicopters</i>	0.931	0.966	0.928	0.000	0.928	0.946	0.963	0.985	1.005	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, V-22. Common helicopter functionality will be developed for implementation in Joint Mission Planning System (JMPS).											
B. Accomplishments/Planned Program (\$ in Millions)											
						FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	
Common Helicopters						0.931	0.966	0.928	0.000	0.928	
Continue development of Common Helicopter functionality and integration with JMPS Version 1.2.4 and 1.4., and Portable Flight Planning Station (PFPS) Version 3.31.											
FY 2009 Accomplishments: Completed Common Mission Data Loader (CMDL) Unique Planning Component (UPC) build 2.01.21.											
FY 2010 Plans: Perform Common Mission Data Loader (CMDL) .NET UPC Preliminary Design Review (PDR) and Critical Design Review (CDR), develop and deliver two builds of legacy CMDL UPC to Developmental Test (DT), develop and deliver VH-3D and VH-60N Weight & Power Calculator (WPC) module to DT, and develop and deliver two additional helicopter WPC modules to DT.											

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy				DATE: February 2010							
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>							
B. Accomplishments/Planned Program (\$ in Millions)											
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total			
<i>FY 2011 Base Plans:</i> 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.											
Accomplishments/Planned Programs Subtotals				0.931	0.966	0.928	0.000	0.928			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• RDTE/3858: <i>Air Force Mission Planning Systems</i>	97.296	91.995	99.261	0.000	99.261	0.000	0.000	0.000	0.000	0.000	288.552
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 data; mission 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 2011 Navy								DATE: February 2010			
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>			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
9999: <i>Congressional Adds</i>	2.793	5.776	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	17.501
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 Program (\$ in Millions)											
							FY 2009	FY 2010			
Congressional Add: Measurement Standards Research and Development							0.000	5.776			
<i>FY 2010 Plans:</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 Add: U.S. Navy Metrology and Calibration (METCAL)							2.793	0.000			

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy		DATE: February 2010
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>
B. Accomplishments/Planned Program (\$ in Millions)		
	FY 2009	FY 2010
<p><i>FY 2009 Accomplishments:</i></p> <p>FY 2009 RDT&E Congressional Plus-up Funds for the U.S. Navy METCAL R&D Program efforts at the Naval Surface Warfare Center, Corona, CA, issued for the research and development (R&D) of National, Primary and Depot Maintenance calibration standards (hardware) in the technology areas of Nuclear, Biological and Chemical (NBC), Electro-optics, and physical- mechanical for the purpose of ensuring measurement accuracy in support/maintenance and combat readiness of new advance technology weapon systems, current weapon systems and associated support equipment. This will continue the development of NBC simulant testing in support of Chemical and Biological detection devices and systems, and portable calibration standards to the fleet in support of wireless closed loop calibrations onboard ship. This will also continue the development of the new generation automated calibration system.</p>		
Congressional Adds Subtotals	2.793	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		

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