

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						R-1 ITEM NOMENCLATURE 0604215N, Standards Development					
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Total PE Cost	117.685	74.391	100.740	66.748							
E2310/Flight Polynomials	0.000	0.279	0.344	0.355							
E2311/Stores Planning and Weaponeering Module	0.000	7.034	8.497	7.565							
E2312/Common Helicopters	0.000	1.349	1.952	2.739							
S1857/Calibration Standards	0.000	4.499	7.503	1.653							
W0572/Joint Services/Naval Standard Avionics Components and Subsystems	117.685	61.230	82.444	54.436							
Quantity of RDT&E Articles	49	91	43	40							
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:											
Project S1857, Calibration Standards: This project is a Navy-wide program to develop required calibration standards (hardware in all major measurement technology areas). It funds Navy lead-service responsibilities in the DOD metrology RDT&E program.											
Project E2310, Flight Polynomials: The Navy - Portable Flight Planning Software (N-PFPS) is the basic flight planning system for the Navy and Marine Corps. One of the fundamental planning functions of any automated aviation mission planner is the ability to calculate fuel required and performance available corrected for both the aircraft's configuration (weight, drag, speed, etc.) and the environmental factors (altitude, wind, pressure, humidity, etc.) In order to provide accurate performance calculations, performance polynomials (drop-in polynomials) reflecting the performance delineated in the approved NATOPS manuals must be developed, implemented and maintained for each supported type/model/series aircraft. The following type/model/series aircraft are supported by this PE: F/A-18 (400), F/A-18 (402), C-2R, E-2C (Block II), F-14 B/D, AH-1W, UH-1N, CH-46E, H-60F/H, S-3B, EA-6B, AV-8B (406), AV-8 (408), T-45, and KC-130 F/R/T. The developed drop-in performance polynomials will initially be implemented in Naval Portable Flight Planning Software (N-PFPS).											
Project E2311, Stores Planning and Weaponeering Module: The Naval Stores Planning and Weaponeering (NSPW) application is an incrementally developed software product that will provide a certified unit level weaponeering capability for Naval aircraft in the Joint Mission Planning Segment (JMPS). NSPW will provide current planning results for specific aircraft type and model that include store/weapon carriage authorizations, restrictions and limitations; store/weapon delivery restrictions and limitations (including safe-escape aspects of the planned delivery profile); and will provide mandatory weapons employment planning information including weapons optimization. Selected functions of the Automated Tactical Manual Supplement (ATACS) will be rehosted in a Windows NT environment and integrated with Joint Munitions Effectiveness Manual (JMEM) software, and mission planning functions to comprise NSPW. F/A-18A/B/C/D is the first platform to be introduced in the first increment of NSPW as a stand alone product, prior to migration to JMPS.											

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APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVYBA-5</b>	R-1 ITEM NOMENCLATURE 0604215N, Standards Development	
<p>Project E2312, Common Helicopters: Automated mission planning systems to date have been developing targeting the planning requirements for fixed-wing aircraft, while the unique planning requirements for helicopters have not been 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, etc.) 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 &amp; elevation), and enhanced fidelity of threat analyses. The following type/model/series aircraft are supported by this PE: AH-1W, UH-1N, H-46D/E, H-53D/E, H-60B/F/H/R, and V-22. The developed common helicopter functionality will initially be implemented in Naval Portable Flight Planning Software (N-PFPS). The fully developed and Fleet released common helicopter functionality will migrate to the Joint Mission Planning Segment (JMPS) after JMPS initial fielding.</p> <p>Project W0572, Joint Services/Navy Standard Avionics Components and Subsystems: This project provides for the identification, design, development, test, evaluation and qualification of standard avionics for Navy use, and wherever practicable, use across all Services and Foreign Military Sales. Such air combat electronics developments include communications, navigation, 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. Several examples of past successful tasks under this project include the Standard Central Air Data Computer, Solid State Barometric Altimeter, and Downed Aircraft Location System, jointly developed with the Air Force and Army and currently installed on numerous Navy, Air Force and Army aircraft. This project also funds Navy chairmanship and participation in the Joint Services Review Committee (JSRC) for Avionics Standardization. The RDT&amp;E Articles include Tactical Aircraft Moving Map Capability (TAMMAC) Engineering &amp; Manufacturing Development (EMD) units, Communication Navigation Surveillance/Air Traffic Management (CNS/ATM) EMD units, Advanced Mission Computer &amp; Displays (AMC&amp;D) EMD units which include Display Processors and Mission Processors, Display Heads, 8 x 10 displays, Fibre Channel Network Switches, and technology roll kits.</p> <p>(U) JUSTIFICATION FOR BUDGET ACTIVITY: These programs are funded under ENGINEERING &amp; MANUFACTURING DEVELOPMENT because they encompass engineering and manufacturing development of new end-items prior to production approval decision.</p>		

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EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>June 2001</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 064215N Standards Development				PROJECT NUMBER AND NAME E2310 Flight Polynomials					
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost		<b>0.279</b>	<b>0.344</b>	<b>0.355</b>							<b>0.978</b>
RDT&E Articles Qty											
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: One of the fundamental planning functions of any automated aviation mission planner is the ability to calculate fuel required and performance available corrected for both the aircraft's configuration (weight, drag, speed, etc.) and the environmental factors (altitude, wind, pressure, humidity, etc.) In order to provide accurate performance calculations, flight performance modules reflecting the performance delineated in the approved NATOPS manuals must be developed, implemented and maintained for each supported type/model/series aircraft. The developed flight performance modules will initially be implemented in Naval Portable Flight Planning Software (N-PFPS) and will eventually migrate to JMPS.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <ol style="list-style-type: none"> <li>(U) FY 2000 ACCOMPLISHMENTS: - (U) (\$.279) Continued the development, certification, and release of flight performance modules. The following flight performance modules were developed KC-130F/R/T and P-3C.</li> <li>(U) FY 2001 PLAN: - (U) (\$.344) Continue the development, certification, and release of flight performance modules. The following flight performance modules are planned; E-2C and SH-60B.</li> <li>FY 2002 PLAN: - (U) (\$.355) Continue the development, certification, and release of flight performance modules. The following flight performance modules are planned: C-130J and T-34C.</li> </ol>											

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<p>(U) B. PROGRAM CHANGE SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: right;">FY2000</th> <th style="text-align: right;">FY2001</th> <th style="text-align: right;">FY2002</th> </tr> </thead> <tbody> <tr> <td>(U) FY 2001 President's Budget:</td> <td style="text-align: right;">0.286</td> <td style="text-align: right;">0.347</td> <td style="text-align: right;">0.355</td> </tr> <tr> <td>(U) Adjustments from the President's Budget:</td> <td style="text-align: right;">-0.007</td> <td style="text-align: right;">-0.003</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>(U) FY 2002 President Budget Submit:</td> <td style="text-align: right;">0.279</td> <td style="text-align: right;">0.344</td> <td style="text-align: right;">0.355</td> </tr> </tbody> </table> <p>CHANGE SUMMARY EXPLANATION:</p> <p>(U) Funding: The FY 2000 decrease of \$.007 million reflects a reprioritization of requirements within the Navy. The FY 2001 decrease of .003 million reflects a Congressional reduction.</p> <p>(U) Schedule: The 2Q/02 JMPS OPEVAL has been redesignated as a 4Q/02 JMPS Version 1 (JV1) Operational Test (OT). The 4Q/02 JMPS IOC has been redesignated as a 2Q/03 JMPS Version 1 (JV1) IOC. NPFPS Version 3.1 was delayed from 2Q/00 to 3Q/00. NPFPS Version 3.2 was delayed from 2Q/01 to 3Q/01.</p> <p>(U) Technical: Not applicable</p> <p>(U) C. OTHER PROGRAM FUNDING SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>Line Item No. &amp; Name</u></th> <th style="text-align: right;"><u>FY 2000</u></th> <th style="text-align: right;"><u>FY 2001</u></th> <th style="text-align: right;"><u>FY 2002</u></th> <th style="text-align: right;"><u>FY 2003</u></th> <th style="text-align: right;"><u>FY 2004</u></th> <th style="text-align: right;"><u>FY 2005</u></th> <th style="text-align: right;"><u>FY 2006</u></th> <th style="text-align: right;"><u>FY 2007</u></th> <th style="text-align: right;"><u>To Complete</u></th> <th style="text-align: right;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>BLI 287600 TAC A/C Mission Planning System (OPN)</td> <td style="text-align: right;">20.457</td> <td style="text-align: right;">11.771</td> <td style="text-align: right;">13.411</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: right;">Continuing</td> </tr> </tbody> </table> <p>Related RDT&amp;E:</p> <p>(U) P.E. 0604231N (Mission Planning)</p>							FY2000	FY2001	FY2002	(U) FY 2001 President's Budget:	0.286	0.347	0.355	(U) Adjustments from the President's Budget:	-0.007	-0.003	0.000	(U) FY 2002 President Budget Submit:	0.279	0.344	0.355	<u>Line Item No. &amp; Name</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Complete</u>	<u>Total Cost</u>	BLI 287600 TAC A/C Mission Planning System (OPN)	20.457	11.771	13.411							Continuing
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<p>(U) D. ACQUISITION STRATEGY: This is a co-operative development between the USN and USAF.</p> <p>(U) E. SCHEDULE PROFILE</p> <table border="1"> <thead> <tr> <th></th> <th><u>FY 2000</u></th> <th><u>FY 2001</u></th> <th><u>FY 2002</u></th> <th><u>TO COMPLETE</u></th> </tr> </thead> <tbody> <tr> <td>(U) Program Milestones</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    NPFPS Version 3.1</td> <td>3Q/00 Release</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    NPFPS Version 3.2</td> <td></td> <td>3Q/01 Release</td> <td></td> <td></td> </tr> <tr> <td>    JMPS Version 1 (JV1)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    JMPS Post Version 1(JC1)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    JMPS Force Level Planning</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    JMPS Responsive Planning</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Engineering Milestones</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) T&amp;E Milestones</td> <td>2Q/00 TAMPS 6.2.1 OPEVAL</td> <td></td> <td>4Q/02 JMPS Version 1 OT</td> <td></td> </tr> <tr> <td>(U) Contract Milestones</td> <td></td> <td>3Q/01 JMPS POST-V1 (JC1) CONTRACT AWARD</td> <td>1Q/02 JMPS FOLLOW-ON CONTRACT AWARD</td> <td></td> </tr> </tbody> </table>						<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>TO COMPLETE</u>	(U) Program Milestones					NPFPS Version 3.1	3Q/00 Release				NPFPS Version 3.2		3Q/01 Release			JMPS Version 1 (JV1)					JMPS Post Version 1(JC1)					JMPS Force Level Planning					JMPS Responsive Planning					(U) Engineering Milestones					(U) T&E Milestones	2Q/00 TAMPS 6.2.1 OPEVAL		4Q/02 JMPS Version 1 OT		(U) Contract Milestones		3Q/01 JMPS POST-V1 (JC1) CONTRACT AWARD	1Q/02 JMPS FOLLOW-ON CONTRACT AWARD	
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APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME						
RDT&E, N / BA-5		064215N Standards Development				E2311 Naval Stores Planning and Weaponneering						
COST (\$ in Millions)		Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost			7.034	8.497	7.565						Continuing	Continuing
RDT&E Articles Qty												
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Naval Stores Planning and Weaponneering (NSPW) application, previously known as Stores Planning and Weaponneering Module (SPWM), is a incrementally developed software product that will provide a certified unit level weaponneering capability for Navy and Marine Corp aircraft in the Joint Mission Planning System (JMPS). NSPW will provide current planning results for specific aircraft type and model that include store/weapon carriage authorizations, restrictions and limitations; store/weapon delivery restrictions and limitations (including safe-escape aspects of the planned deli profile), and will provide mandatory weapons employment planning information including weapons optimization. Selected functions of the Automated Tactical Manual Supplement (ATACS) will be rehosted in a Windows NT environment and integrated with Joint Munitions Effectiveness Manual (JMEM) software, and other mission planning functions to comprise the NSPW. F/A-18A/B/C/D is the first platform to be introduced in the first increment of NSPW. Initially, as a standalone product, later the system will be migrated to JMPS.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. (U) FY 2000 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"><li>- (U) (\$2.157) Concluded NSPW Elaboration Phase by establishing an articulation baseline and conducting an elaboration status review. Presented NSPW constructive readiness review for FA18A/B/C/D stand alone product.</li><li>- (U) (\$3.427) Began NSPW Construction Phase. Two constructive elaboration's were conducted in FY00 with a hardware review.</li><li>-(U) (\$1.450) Developed and released ATACS version 2.1.</li></ul> <p>2. (U) FY 2001 PLAN:</p> <ul style="list-style-type: none"><li>-(U) (\$6.539) Continue NSPW Construction Phase. Scheduled to complete NSPW Iterations 5, 6 and 7.</li><li>- (U) (\$.290) Initiate analysis and design for load and load validation for EA-6B aircraft.</li><li>- (U) (\$1.502) Develop and release ATACS version 2.2.</li><li>-(U) (\$.166) Portion of extramural program reserved for Small Business Innovation Research Assessment in accordance with 15 USC 68.</li></ul> <p>3. (U) FY 2002 PLAN:</p> <ul style="list-style-type: none"><li>-(U) (\$2.583) Continue NSPW Construction Phase including FQT and certification testing on F/A-18A/B/C/D stand alone product. Introduce NSPW application to Fleet users at the conclusion of the NSPW Transition Phase.</li><li>-(U) )\$3.548) Initiate development of the F/A-18E/F NSPW application.</li><li>-(U) (\$.917) Provide essential updates to ATACS until NSPW is released.</li><li>-(U) (\$.515) Initiate analysis and design of loading capability for JMPS Version 1 aircraft (CH-46, CH53D, CH-53E, HH-60H, KC-130, T-45, UH-1, SH-60R, and AH-1).</li></ul>												

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<p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS (Cont):</p> <p>(U) B. PROGRAM CHANGE SUMMARY:</p> <table style="margin-left: 40px; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: right;">FY2000</th> <th style="text-align: right;">FY2001</th> <th style="text-align: right;">FY2002</th> </tr> </thead> <tbody> <tr> <td>(U) FY 2001 President's Budget:</td> <td style="text-align: right;">7.391</td> <td style="text-align: right;">8.589</td> <td style="text-align: right;">7.743</td> </tr> <tr> <td>(U) Adjustments from the President's Budget:</td> <td style="text-align: right;">-0.357</td> <td style="text-align: right;">-0.092</td> <td style="text-align: right;">-0.178</td> </tr> <tr> <td>(U) FY 2002 President Budget Submit:</td> <td style="text-align: right;">7.034</td> <td style="text-align: right;">8.497</td> <td style="text-align: right;">7.565</td> </tr> </tbody> </table> <p>CHANGE SUMMARY EXPLANATION:</p> <p>(U) Funding: The FY2000 net decrease of \$.357 million reflects a decrease of \$.004 million for a reprioritization of requirements within the Navy, a decrease of \$.029 for a Congressional Rescission and a decrease of \$.324 million for a Small Business Innovative Research assessment.  The FY2001 net decrease of \$.092 million reflects a decrease of \$.013 million for reprioritization of requirements within the Navy and a decrease of \$.079 for a Congressional Rescission .  The FY2002 net decrease of \$.180 million reflects a decrease of \$.034 million for reprioritization of requirements within the Navy and a decrease of \$.146 million for Economic Assumptions.</p> <p>(U) Schedule: NSPW Fleet Qualification and Certification Tests added to the 2 &amp; 3 Q/02 causes the NSPW Version 1.0 Release to change from the 2Q/02 to 4Q/02.</p> <p>(U) Technical: Not Applicable</p> <p>(U) C. OTHER PROGRAM FUNDING SUMMARY:</p> <table style="margin-left: 40px; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>Line Item No. &amp; Name</u></th> <th style="text-align: right;"><u>FY 2000</u></th> <th style="text-align: right;"><u>FY 2001</u></th> <th style="text-align: right;"><u>FY 2002</u></th> <th style="text-align: right;"><u>FY 2003</u></th> <th style="text-align: right;"><u>FY 2004</u></th> <th style="text-align: right;"><u>FY 2005</u></th> <th style="text-align: right;"><u>FY 2006</u></th> <th style="text-align: right;"><u>FY 2007</u></th> <th style="text-align: right;"><u>To Complete</u></th> <th style="text-align: right;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>BLI 287600 TAC A/C Mission Planning System (OPN)</td> <td style="text-align: right;">20.457</td> <td style="text-align: right;">11.771</td> <td style="text-align: right;">13.411</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: right;">Continuing</td> </tr> </tbody> </table> <p style="margin-left: 40px;">Related RDT&amp;E:</p> <p>(U) P.E. 0604231N (Mission Planning)</p>						FY2000	FY2001	FY2002	(U) FY 2001 President's Budget:	7.391	8.589	7.743	(U) Adjustments from the President's Budget:	-0.357	-0.092	-0.178	(U) FY 2002 President Budget Submit:	7.034	8.497	7.565	<u>Line Item No. &amp; Name</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Complete</u>	<u>Total Cost</u>	BLI 287600 TAC A/C Mission Planning System (OPN)	20.457	11.771	13.411							Continuing
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APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME																																																		
<b>RDT&amp;E, N / BA-5</b>	064215N Standards Development	E2311 Navy Stores Planning and Weaponneering																																																		
<p>(Related RDT&amp;E (U) P.E. 0604231N Mission Planning</p> <p>(U) D. ACQUISITION STRATEGY: Navy Stores Planning and Weaponneering (NSPW) software applications are being built by a software development team composed of government and contractor entities. Engineers provide domain expertise in the areas of platform specific stores compatibility and weapons separation, load validation, drag counts, fuzing, delivery and safe escape, unguided trajectory modeling, guided weapons models, weapon effects, and aerodynamic flutter to the software development team. NSPW management and the test team for IV&amp;V and Certification Testing are also combined teams of United State Government (USG) and contractor entities. Contractor efforts are procured predominately through fixed-price GSA or BPA contracts.</p> <p>(U) E. SCHEDULE PROFILE</p> <table><thead><tr><th></th><th><u>FY 2000</u></th><th><u>FY 2001</u></th><th><u>FY 2002</u></th><th><u>TO COMPLETE</u></th></tr></thead><tbody><tr><td>(U) Program Milestones</td><td></td><td></td><td></td><td></td></tr><tr><td>ATACS Version 2.1</td><td>2Q/00 Release</td><td></td><td></td><td></td></tr><tr><td>ATACS Version 2.2</td><td></td><td>2Q/01 Release</td><td></td><td></td></tr><tr><td>NSPW Version 1.0</td><td></td><td></td><td>4Q/02 Release</td><td></td></tr><tr><td>NSPW Version 2.0</td><td></td><td></td><td></td><td></td></tr><tr><td>(U) Engineering Milestones</td><td></td><td></td><td></td><td></td></tr><tr><td>(U) T&amp;E Milestones</td><td></td><td></td><td></td><td></td></tr><tr><td>(U) Contract Milestones</td><td></td><td></td><td></td><td></td></tr><tr><td>NSPW</td><td>2Q/00 DCS GSA Contract Award</td><td>2Q/01 DCS GSA Contract Award</td><td>2Q/02 DCS GSA Contract Award</td><td></td></tr></tbody></table>				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>TO COMPLETE</u>	(U) Program Milestones					ATACS Version 2.1	2Q/00 Release				ATACS Version 2.2		2Q/01 Release			NSPW Version 1.0			4Q/02 Release		NSPW Version 2.0					(U) Engineering Milestones					(U) T&E Milestones					(U) Contract Milestones					NSPW	2Q/00 DCS GSA Contract Award	2Q/01 DCS GSA Contract Award	2Q/02 DCS GSA Contract Award	
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>TO COMPLETE</u>																																																
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NSPW	2Q/00 DCS GSA Contract Award	2Q/01 DCS GSA Contract Award	2Q/02 DCS GSA Contract Award																																																	

R-1 SHOPPING LIST - Item No 97

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UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)							DATE:					
APPROPRIATION/BUDGET ACTIVITY							June 2001					
RDT&E, N / BA-5			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
			064215N STANDARD DEVELOPMENT			E2311 NAVY STORES PLANNING AND WEAPONERING						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Primary Development	WX	NAWCAD, Pax River MD	7.489	2.687	11/00	2.741	11/01			Continuing	Continuing	
Primary Development	GSA/FP	DCS Inc., Pax River MD	5.955	2.602	01/01	2.818	01/02			Continuing	Continuing	
Systems Engineering	Various	Various	3.231	1.274	11/00	0.280	11/01			Continuing	Continuing	
Subtotal Product Development			16.675	6.563		5.839				Continuing	Continuing	
Remarks:												
Subtotal Support			0.000	0.000		0.000				0.000	0.000	
Remarks:												

# UNCLASSIFIED

## CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>June 2001</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT 064215N STANDARD DEVELOPMENT			PROJECT NUMBER AND NAME E2311 NAVY STORES PLANNING AND WEAPONERING						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various	2.114	1.264	11/00	1.298	11/01			Continuing	Continuing	
Subtotal T&E			2.114	1.264		1.298				Continuing	Continuing	
Remarks:												
Program Management Support	RX	Various	1.299	0.357	11/00	0.280	11/01			Continuing	Continuing	
Travel	WX	NAWCAD, Pax River MD	0.466	0.147	11/00	0.146	11/01			Continuing	Continuing	
SBIR Assessment				0.166								
Subtotal Management			1.765	0.670		0.426				Continuing	Continuing	
Remarks:												
Total Cost			20.554	8.497		7.563				Continuing	Continuing	
Remarks:												

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Exhibit R-3, Project Cost Analysis  
(Exhibit R-3, page 10 of 26)

# UNCLASSIFIED

## CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE:				
		June 2001										
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME						
RDT&E, N / BA-5		064215N Standards Development				E2312 Common Helicopters						
COST (\$ in Millions)		Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost			1.349	1.952	2.739							6.040
RDT&E Articles Qty												
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Automated mission planning systems to date have been developed targeting the planning requirements for fixed-wing aircraft, while the unique planning requirements for helicopters have not been 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, etc.) 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 &amp; elevation), and enhanced fidelity of threat analyses. The following type/model/series aircraft are supported by this PE: AH-1W, UH-1N, H-46D/E, H-53D/E, H-60B/F/H/R, and V-22. The developed common helicopter functionality will initially be implemented in Naval Portable Flight Planning Software (N-PFPS). The fully developed and Fleet released common helicopter functionality will migrate to the Joint Mission Planning System (JMPS).</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. (U) FY 2000 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"><li>(U) (\$1.349) Commenced development of common helicopter functionality as identified in the FY-99 requirements analyses. Released version 3.1 of N-PFPS.</li></ul> <p>2. (U) FY 2001 PLAN:</p> <ul style="list-style-type: none"><li>(U) (\$1.952) Continue development of Common Helicopter functionality.</li></ul> <p>3. (U) FY 2002 PLAN:</p> <ul style="list-style-type: none"><li>(U) (\$2.738) Continue development of Common Helicopter functionality.</li></ul>												

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Exhibit R-2a, RDTEN Project Justification  
(Exhibit R-2a, page 11 of 26)

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## CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 064215N Standards Development	PROJECT NUMBER AND NAME E2312 Common Helicopters

(U) B. PROGRAM CHANGE SUMMARY:

	FY2000	FY2001	FY2002
(U) FY 2001 President's Budget:	1.434	1.973	2.745
(U) Adjustments from the President's Budget:	-0.085	-0.021	-0.006
(U) FY 2002 President Budget Submit:	1.349	1.952	2.739

CHANGE SUMMARY EXPLANATION:

(U) Funding: The FY2000 net decrease of \$.085 million reflects decrease of \$.079 million for a Small Business Innovative Research assessment and a decrease of \$.006 million for a Congressional Rescission.  
The FY2001 net decrease of \$.021 million reflects a decrease of \$.003 million for reprioritization of requirements within the Navy and a decrease of \$.018 million for a Congressional Rescission.  
The FY2002 decrease of \$.007 million reflects a reprioritization of requirements within the Navy.

((U) Schedule: The 2Q/02 JMPS OPEVAL has been redesignated as a 4Q/02 JMPS Version 1 (JV1) Operational Test (OT). The 4Q/02 JMPS IOC has been redesignated as a 2Q/03 JMPS Version 1 (JV1) IOC. NPFPS Version 3.1 was delayed from 2Q/00 to 3Q/00. NPFPS Version 3.2 was delayed from 2Q/01 to 3Q/01.

(U) Technical: Not Applicable

(U) C. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. &amp; Name</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Complete</u>	<u>Total Cost</u>
BLI 287600 TAC A/C Mission Planning System (OPN)	20.457	11.771	13.411							

Related RDT&E:  
(U) P.E. 0604231N (Mission Planning)

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## CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:																																																							
		<b>June 2001</b>																																																							
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME																																																							
<b>RDT&amp;E, N / BA-5</b>	064215N Standards Development	E2312 Common Helicopters																																																							
<p>(Related RDT&amp;E (U) P.E. 0604231N Mission Planning (E2213)</p> <p>(U) D. ACQUISITION STRATEGY: NOT APPLICABLE</p>																																																									
<p>(U) E. SCHEDULE PROFILE</p> <table> <tr> <td></td> <td><u>FY 2000</u></td> <td><u>FY 2001</u></td> <td><u>FY 2002</u></td> <td><u>TO COMPLETE</u></td> </tr> <tr> <td>(U) Program Milestones</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    NPFPS Version 3.1</td> <td>3Q/00 Release</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    NPFPS Version 3.2</td> <td></td> <td>3Q/01 Release</td> <td></td> <td></td> </tr> <tr> <td>    JMPS Version 1 (JV1)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    JMPS Post Version 1(JC1)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    JMPS Force Level Planning</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    JMPS Responsive Planning</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Engineering Milestones</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) T&amp;E Milestones</td> <td>2Q/00 TAMPS 6.2.1 OPEVAL</td> <td></td> <td>4Q/02 JMPS Version 1 OT</td> <td></td> </tr> <tr> <td>(U) Contract Milestones</td> <td></td> <td>3Q/01 JMPS POST-V1 (JC1) CONTRACT AWARD</td> <td>1Q/02 JMPS FOLLOW-ON CONTRACT AWARD</td> <td></td> </tr> </table>				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>TO COMPLETE</u>	(U) Program Milestones					NPFPS Version 3.1	3Q/00 Release				NPFPS Version 3.2		3Q/01 Release			JMPS Version 1 (JV1)					JMPS Post Version 1(JC1)					JMPS Force Level Planning					JMPS Responsive Planning					(U) Engineering Milestones					(U) T&E Milestones	2Q/00 TAMPS 6.2.1 OPEVAL		4Q/02 JMPS Version 1 OT		(U) Contract Milestones		3Q/01 JMPS POST-V1 (JC1) CONTRACT AWARD	1Q/02 JMPS FOLLOW-ON CONTRACT AWARD	
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Exhibit R-2a, RD TEN Project Justification  
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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			064215N STANDARD DEVELOPMENT			E2312 Common Helicopters						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Primary Development	MP	Eglin AFB, Florida	1.677	0.474	11/00						2.151	0.474
Primary Development	C/CPAF	Logicon, CA.		0.862	04/01	2.099	11/01			Continuing	Continuing	
Subtotal Product Development			1.677	1.336		2.099				Continuing	Continuing	
Remarks:												
Subtotal Support			0.000	0.000		0.000				0.000	0.000	
Remarks:												

# UNCLASSIFIED

## CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>June 2001</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT 064215N STANDARD DEVELOPMENT			PROJECT NUMBER AND NAME E2312 Common Helicopters						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Subtotal T&E			0.000	0.000		0.000				0.000	0.000	
Remarks:												
Government Engineering Support	WX	NAWCAD, Pax River MD	0.100	0.181	11/00	0.200	11/01			Continuing	Continuing	
Program Management Support	RX	Various		0.335	11/00	0.340	11/01			Continuing	Continuing	
Travel	WX	NAWCAD, Pax River MD		0.100	11/00	0.099	11/01			Continuing	Continuing	
Subtotal Management			0.100	0.616		0.639				Continuing	Continuing	
Remarks:												
Total Cost			1.777	1.952		2.738				Continuing	Continuing	
Remarks:												

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Exhibit R-3, Project Cost Analysis  
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## CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>June 2001</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME 0604215N, Standards Development				PROJECT NUMBER AND NAME S1857, Calibration Standards					
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost	<b>0.000</b>	<b>4.499</b>	<b>7.503</b>	<b>1.653</b>						<b>Continuing</b>	<b>Continuing</b>
RDT&E Articles Qty											

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:  
This project provides the engineering development of measurement reference/calibration standards (hardware) required to ensure measurement accuracy in support/maintenance of new advance technology weapon systems and associated support equipment. There individual tasks have been assigned to the Navy as lead-service responsibilities as part of a Joint Service/DOD progra

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2000 ACCOMPLISHMENTS:

- (U) (\$2.767) 13 New Projects: Begin development of 9 calibration standards (hardware) in support of shipboard gage calibration, electronic maintenance, composite material testing, optical systems, laser power measurements, infrared imaging system (8 -12 um), infrared target designators (3 – 5 um), AN/UPM-155 pulse characterization, and Radar Cross Section measurements. Begin development (to 50% completion and continue in FY 01) of 4 modeling and simulation projects to develop tools for reducing the cost of maintenance and optimizing test decisions.
- (U) (\$ .700) Complete the development of 3 calibration standards (hardware) in support of laser tracking systems, target designators, and radar power measurements.
- (U) (\$1.032) Continue development of 5 calibration standards (hardware) in support of underwater acoustic systems, Infrared (1.52u) systems, fiber optic systems, electromagnetic vulnerability measurements, and multi-function electrical test equipment.

2. FY 2001 PLANS:

- (U) (\$4.299) 13 New Projects: Begin development of 13 calibration standards (hardware) in support of microwave power measurements, broadband communications, fuel measurements systems, FLIR systems, electronic test systems, chemical/biological sensors, laser power measurements, eye safe laser power measurements, Watt Meter calibrators, missile guidance systems, capacitance measurement systems, fiber optic hydropones and new technology for reduced crew size.

Continue work on 17 projects begun in previous years as follows:

- (U) (\$1.069) Complete 5 Projects : 5 calibration standards (hardware) in support of electromagnetic vulnerability measurements, underwater acoustic systems, Infrared (1.52u) systems, electronic maintenance, and AN/UPM-155 pulse characterization.
- (U) (\$2.135) Continue development of 12 calibration standards (hardware) in support of fiber optic systems, shipboard gage calibration, composite material testing, laser power measurements, multifunction electrical test equipment, infrared imaging systems (8 - 12 um), infrared target designators (3 - 5 m) and Radar Cross Section measurements; 4 modeling and simulation projects begun in FY00 to develop tools for reducing the cost of maintenance and optimizing test decisions.

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Exhibit R-2a, RDTEN Project Justification  
(Exhibit R-2a, page 16 of 26)



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## CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>June 2001</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604215N, Standards Development	PROJECT NUMBER AND NAME S1857, Calibration Standards		

3. FY 2002 PLAN:

(U) (\$ .661) Complete 14 calibration standards (hardware) in support of fiber optic systems, Watt Meter calibrators, shipboard gage calibration, composite material testing, microwave power measurements, laser power measurements, fiber optic hydrophones, infrared imaging systems (8 – 12 um), and infrared target designators (3 – 5 um) 4 modeling and simulation projects begun in FY00 to develop tools for reducing the cost of maintenance and optimizing test decisions.

(U) (\$ .992) Continue development of 11 calibration standard (hardware) in support of radar cross section measurements, laser power measurements, optical systems, composite material testing, broadband communication systems, fuel measurement systems, FLIR systems, multifunction electrical test equipment, chemical/biological sensors, missile guidance systems, new technology for reduced crew size, and capacitance measurement systems.

	FY2000	FY2001	FY2002
(U) FY 2001 President's Budget:	4.552	1.572	1.738
(U) Adjustments from President's budget:			
Minor Technical Adjustments	-0.004	-0.069	-0.022
Congressional Increase		2.000	
Congressional Increase		4.000	
Across-the-Board Reduction	-0.018		
Mid-year Adj.	-0.031		
Rate Changes			-0.063
(U) FY 2002 PRES Budget Submit:	4.499	7.503	1.653

CHANGE SUMMARY EXPLANATION:

(U) Funding: See Above.

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. &amp; Name</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost
Not applicable.										

(U) D. ACQUISITION STRATEGY: Not applicable.

(U) E. SCHEDULE PROFILE: Not applicable.

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: <b>June 2001</b>		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604215N, Standards Development			S1857, Calibration Standards						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	WR	NSWC NWAS	6.198	6.454	10/00	1.241	10/01			Continuing	Continuing	
Systems Engineering	WR	NSWC NWAS	1.983	1.019	10/00	0.392	10/01			Continuing	Continuing	
											0.000	
											0.000	
											0.000	
											0.000	
Award Fees											0.000	
Subtotal Product Development			8.181	7.473		1.633				Continuing	Continuing	
Remarks:												
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Support			0.000	0.000		0.000				0.000	0.000	
Remarks:												

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## CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: <b>June 2001</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT 0604215N, Standards Development				PROJECT NUMBER AND NAME S1857, Calibration Standards					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal T&E			0.000	0.000		0.000				0.000	0.000	
Remarks:												
Travel		NSWC NWAS	0.050	0.030	10/00	0.020	10/01			Continuing	Continuing	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Management			0.050	0.030		0.020				Continuing	Continuing	
Remarks:												
Total Cost			8.231	7.503		1.653				Continuing	Continuing	
Remarks:												

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Exhibit R-3, Project Cost Analysis  
(Exhibit R-3, page 19 of 26)

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## CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: <b>June 2001</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604215N, Standards Development					PROJECT NUMBER AND NAME W0572, Joint Services/Navy Standard Avionics Components and Subsystems					
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost	117.685	61.230	82.444	54.436						Continuing	Continuing
RDT&E Articles Qty	49	91	43	40						0	

### (U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Joint Services/Navy Standard Avionics Components and Subsystems project provides for the identification, design, development, test, evaluation and qualification of standard avionics and mandatory safety improvements for Navy use, and wherever practicable, use across all services. Standard avionics systems under development include the Ground Proximity Warning System (GPWS) for CAT II, Terrain Awareness Warning System (TAWS), Low Probability of Intercept Altimeter (LPIA), Tactical Aircraft Moving Map Capability (TAMMAC), Midair Collision Avoidance System (MCAS), Communication Navigation Surveillance Air Traffic Management (CNS/ATM), and Advanced Mission Computer & Displays (AMC&D). Participation in Human Factors Quality Management Board (HFQMB) ensures Navy safety upgrades and mandatory safety improvements for naval aircraft.

The RDT&E Articles include Tactical Aircraft Moving Map Capability (TAMMAC) Engineering & Manufacturing Development (EMD) units, Communication Navigation Surveillance/Air Traffic Management (CNS/ATM) EMD units, AMC&D EMD units which include Display Processors and Mission Processors, Display Heads, 8 x 10 displays, Fiber Channel Switches, and technology roll kits.

### (U) PROGRAM ACCOMPLISHMENTS AND PLANS:

#### 1. FY 2000 ACCOMPLISHMENTS:

- (U) (\$ .298) Safety: Completed operational flight test and deficiency corrections of the GPWS CAT II in the F/A-18 C/D (15C OFP) aircraft. Commenced and completed GPWS CAT II OT (15C OFP).
- (U) (\$ 1.591) Completed DT/OT-IIA for the LPIA program. Commenced and completed TECHEVAL for the LPIA program. Commenced OPEVAL.
- (U) (\$ 3.482) Completed TAMMAC TECHEVAL for F/A-18 and TAMPS integration efforts and conducted OPEVAL on TAMMAC program.
- (U) (\$44.973) Awarded development contract and conducted hardware integration, design verification testing/qualification, and reliability development testing (RDT) of baseline AMC&D for the F/A-18E/F and AV-8B programs. Began DT-IIA1 for F/A-18 and DT-IIB1 for AV-8B. Began development of 8 x 10 display and Fibre Channel Network Switch phase of the program for F/A-18 E/F.
- (U) (\$ 1.150) Continued to support the Joint Services Review Committee (JSRC) tri-service coordination to promote commonality and joint programs with focus on interoperability/connectivity communications and CNS/ATM. Supported and participated in Avionics OAG panels and HFQMB.
- (U) (\$ 2.179) Safety: Completed analysis of alternatives and technology feasibility study. Established a phased implementation approach. Identified an MCAS lead platform and completed Implementation Study for embedding MCAS in a host unit.

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Exhibit R-2a, RD TEN Project Justification  
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## CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:	June 2001
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	0604215N, Standards Development	W0572, Joint Services/Navy Standard Avionics Components and Subsystems	
<p>- (U) (\$ 2.265) Safety: Completed PDR/CDR of the TAWS for F/A-18 OFP 17C/18E. Initiated study to investigate other commercial based systems and sensors that would enhance TAWS performance in warning against CFITS, as applied to other Naval platforms.</p> <p>- (U) (\$ 1.014) Awarded contract for TAMMAC mission planning capability to the Naval Portable Flight Planning Systems (N-PFPS). Initiated and completed software SDR, PDR and CDR.</p> <p>- (U) (\$ .320) Conducted Mission Planning System Module Integration for Common Avionics Systems, to include the ARC-210 radio.</p> <p>- (U) (\$ 3.958) Commenced CDRs for RNP-4, awarded contract for Mode S to ensure required access for commercial derivative and tactical naval aircraft for CNS/ATM and initiated platform integration of the Mode S system, completed PIRs/CIRs for Mode S.</p> <p>2. FY 2001 PLANS:</p> <p>- (U) (\$66.088) Complete DT-IIA1 for baseline AMC&amp;D on F/A-18 E/F system. Begin DT-IIA2 and OT-IIA1 for baseline system on F/A-18 E/F. Conduct PDR and CDR for AMC and Fibre Channel Network Switch and procure EMD assets for phased program (AMC&amp;D, 8 x 10 display and Fibre Channel Network Switch). Continue DT-IIB1 and begin DT-IIB2 on AV-8B. Begin development of Multi-Purpose Color Display (MPCD) for F/A-18 C/D and AV-8B. Continue development of AMC for F/A-18E/F and AV-8B and continue 8 x 10 for F/A-18E/F.</p> <p>-(U) (\$ 1.060) Continue to support the JSRC tri-service coordination to promote commonality and joint programs with focus on interoperability communications, and CNS/ATM. Support and participate in Avionics OAG panels and HFQMB.</p> <p>-(U) (\$ .250) Completed OPEVAL and perform verification of corrections for deficiencies on C-2, V/UP-3 and F/A-18 aircraft for LPIA.</p> <p>- (U) (\$ 2.288) Safety: Integrate Phase I MCAS functionality into a host unit. Begin and complete MCAS PDR/CDR. Develop a flight testable unit.</p> <p>- (U) (\$ 3.069) Safety: Commence DT of the TAWS for F/A-18 OFP 17C/18E. Investigate and conduct simulator and flight testing of industry based TAWS and sensors which supplement TAWS performance, as applied to other Naval platforms.</p>			

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## CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:
		<b>June 2001</b>
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
<b>RDT&amp;E, N / BA-5</b>	0604215N, Standards Development	W0572, Joint Services/Navy Standard Avionics Components and Subsystems
<p>- (U) (\$ .770) Complete software coding and functional/developmental testing efforts for TAMMAC/N-PFPS map planning capability. Award TAMMAC/JMPS/Unique Planning Components (UPC) development contract, finalize requirements for TAMMAC JMPS mission planning capability and conduct SDR and PDR for the TAMMAC/JMPS UPC.</p> <p>- (U) (\$ .499) Continue requirements identification and conduct design reviews for integration of Mission Planning System Module Integration for Common Avionics Systems, to include ARC-210 radio. First software release for ARC-210 Fill Program (AFP) as stand-alone system modified to operate in Defense Information Infrastructure Common Operating Environment (JMPS operating environment).</p> <p>- (U) (\$ 6.182) Complete DT for CNS/ATM civil data links and commence TECHEVAL for RNP-4 and Mode S for CNS/ATM in VH and complete hardware development for data link.</p> <p>- (U) (\$ 2.238) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 68.</p> <p>3. FY 2002 PLANS:</p> <p>- (U) (\$40.958) Complete DT-IIA2 and begin DT-IIA3 for AMC&amp;D on F/A-18E/F system. Complete DT-IIB1 and continue DT-IIB2 (TECHEVAL) on AV-8B. Conduct PDR and CDR for 8 X10 display. Continue development and obtain production approval for Multi-Purpose Color Display (MPCD) for AV-8B and F/A-18C/D. Continue development of 8X10 display, Fibre Channel Network Switch and AMC for F/A-18E/F. Continue development of AMC for AV-8B.</p> <p>- (U) (\$ 1.292) Continue to support and chair the JSRC tri-service coordination to promote commonality and joint programs with focus on interoperability communications, and CNS/ATM. Support and participate in Avionics OAG panels and HFQMB.</p> <p>- (U) (\$ 1.714) Safety: Integrate unit on MCAS lead test platform and conduct MCAS developmental testing. Perform platform studies to determine integration impacts on other platforms.</p> <p>- (U) (\$ 3.201) Safety: Complete DT and commence OT of the TAWS for F/A-18 OFP 17C/18E. Evaluate data and test results from simulator and flight testing of industry based TAWS and sensors which supplement TAWS performance.</p> <p>- (U) (\$ .250) Conduct CDR, software coding and unit testing efforts for TAMMAC/JMPS (UPC).</p> <p>- (U) (\$ .612) Second software release of ARC-210 AFP as partially JMPS-integrated package utilizing JMPS common database input (and correcting Software Trouble Reports (STRs) from first release).</p> <p>- (U) (\$ 6.398) Continue CNS/ATM integration of Mode S and RNP-4 functionality integration efforts into naval aircraft. Achieve MS III decision for Mode S.</p>		

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EXHIBIT R-2a, RDT&E Project Justification			DATE:
APPROPRIATION/BUDGET ACTIVITY			June 2001
RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
	0604215N, Standards Development	W0572, Joint Services/Navy Standard Avionics Components and Subsystems	
(U) B. PROGRAM CHANGE SUMMARY:			
	FY2000	FY2001	FY2002
(U) FY 2001 President's Budget:	63.235	83.333	51.153
(U) Adjustments from the President's Budget:	-2.005	-0.889	3.283
(U) FY 2002 President's Budget Submit:	61.230	82.444	54.436
CHANGE SUMMARY EXPLANATION:			
(U) Funding: The FY 2000 net decrease of \$2.005 million consists of a decrease of \$.410 million for reprioritization of requirements within the Navy, a decrease of \$1.335 million for a Small Business Innovative Research (SBIR) assessment, a decrease of \$.012 million for Federal Technology Transfer, and a decrease of \$.248 for a Congressional Recission.			
The FY 2001 net decrease of \$0.889 million consists of a decrease of \$.125 million for reprioritization of requirements within the Navy, a decrease of \$.181 million for a Congressional Recission and a decrease of \$.583 million for a Congressional Reduction.			
The FY 2002 net increase of \$3.283 million consists of a \$4.000 million reduction to offset for affordability in Common Avionics support for the F/A-18C/D (offset taken against AMC&D), an increase of \$7.500 million for Advanced Mission Computer and Display, and a decrease of \$.228 million for reprioritization of requirements within the Navy.			
(U) Schedule: FY 2000 reflects a change in TAMMAC/N-PFPS SDR from 1Q/00 to 2Q/00 due to a two month delay in awarding the transition contract. TAMMAC/N-PFPS PDR changed from 2Q/00 to 3Q/00 due to a two month delay in awarding the transition contract. TAMMAC/N-PFPS CDR changed from 3Q/00 to 4Q/00 due to a two month delay in awarding the transition contract. Effort is contracted under Pt. Mugu omnibus that was late in award. CNS/ATM CDR changed from 3Q/00 to 4Q/00 due to delay in contract award. LPIA OPEVAL changed from 2Q/00 to 4Q/00 due to delays in aircraft availability during TECHEVAL and software anomalies. GPWS CAT II OT phase (15C OFP) changed from 1Q/00 to 3Q/00 due to aircraft availability. TAMMAC OPEVAL changed from 2Q/00 to 4Q/00 due to deficiencies found during TECHEVAL. AMC&D EMD Contract Award changed from 2Q/00 to 3Q/00 due to changes in contracting strategies. AMC&D PDR for Fibre Channel Network Switch changed from 4Q/00 to 1Q/01 due to design change to fibre optics for F/A-18E/F.			
FY 2001 reflects a change in TAMMAC MSIII decision changed from 1Q/01 to 3Q/01 as a result of delays in OPEVAL schedule. LPIA MSIII decision slipped from 4Q/00 to 1Q/02 for corrections of the deficiencies identified in LRIP units. JMPS UPC SDR changed from 2Q/01 to 3Q/01 due to changes in the JMPS Development schedule. JMPS PDR changed from 3Q/01 to 4Q/01 due to changes in the JMPS Development schedule. JMPS CDR changed from 3Q/01 to 1Q/02 due to changes in the JMPS Development schedule. TAWS DT changed from 1Q/01 to 4Q/01 due to F/A-18 aircraft availability. CNS/ATM DT changed from 2Q/01 to 3Q/01 due to late deliveries of VDL-4 equipment. MCAS CDR changed from 2Q/01 to 4Q/01 due to delay in contract awarded. The start of DT-IIA2 for F/A-18E/F was accelerated to start 3Q/01. DT-IIB1 and DT-IIB2 were realigned to reflect AV-8B program schedule changes for LRIP and MSIII decisions.			
(U) Technical: Not Applicable.			

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APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME					
RDT&E, N / BA-5		0604215N, Standards Development			W0572, Joint Services/Navy Standard Avionics Components and Subsystems					
(U) C. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. &amp; Name</u>		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Complete</u> <u>Total Cost</u>
46, Common Avionics, APN		79.511	70.448	65.147	55.632	139.191	113.385	114.672	123.17	Continuing   Continuing
0702207N, Depot Maintenance, RDT&E		1.684	0.561	0.742	0	0	0	0	0	8.626
AN/ARC-210 RT-1794(C)										
(U) D. ACQUISITION STRATEGY:   AMC&D is utilizing a Sole source to McDonnell Douglas Corp. (MDC), a wholly owned subsidiary of the Boeing Company, for prototype design using an 845 Other Transaction Agreement (OTA) and Cost Plus Contract for EMD and LRIP.   MDC conducted a competition to potential suppliers and selected General Dynamics Information Systems for the AMC, Honeywell for Displays, and Harris for Fibre Channel Network Switch.										
		<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>		<u>TO COMPLETE</u>
(U) E. SCHEDULE PROFILE:										
(U) Program Milestones		2Q/00 AMC&D PR		3Q/01 TAMMAC MSIII		1Q/02 LPIA MSIII 2Q/02 CNS/ATM Mode S MSIII				
(U) Engineering Milestones		2Q/00-2Q/00 TAWS F/A-18 (17C/18E) PDR 3Q/00-3Q/00 TAWS F/A-18 (17C/18E) CDR 2Q/00-2Q/00 TAMMAC/N-PFPS SDR 3Q/00-3Q/00 TAMMAC/N-PFPS PDR 4Q/00-4Q/00 TAMMAC/N-PFPS CDR 4Q/00-1Q/01 CNS/ATM RNP-4 CDRs 2Q/00-2Q/00 CNS/ATM Mode S PIR 3Q/00-4Q/00 CNS/ATM Mode S CIR 3Q/01-3Q/01 MCAS PDR 4Q/01-4Q/01 MCAS CDR 3Q/01-3Q/01 TAMMAC/JMPS UPC SDR 4Q/01-4Q/01 TAMMAC/JMPS PDR 1Q/01-1Q/01 AMC&D PDR (F/A-18E/F) 4Q/01-4Q/01 AMC&D CDR (F/A-18E/F) 1Q/02-1Q/02 TAMMAC/JMPS CDR								
(U) T&E Milestones		2Q/00-3Q/00 LPIA TECHEVAL 4Q/00-1Q/01 LPIA OPEVAL 3Q/00-4Q/00 GPWS CAT II OT (15C OFF) 1Q/00-3Q/00 TAMMAC TECHEVAL 4Q/00-1Q/01 TAMMAC OPEVAL 3Q/00-3Q/01 AMC&D DT-IIA1 (F/A-18E/F) 3Q/00-2Q/02 AMC&D DT-IIB1 (AV-8B) 4Q/01-2Q/02 TAWS DT (17C/18E OFF) 3Q/01-4Q/01 CNS/ATM DT 4Q/01-1Q/02 CNS/ATM TECHEVAL 3Q/01-3Q/02 AMC&D DT-IIA2 (F/A-18E/F) 4Q/01-2Q/02 AMC&D OT-IIA1 (F/A-18E/F) 4Q/01-1Q/03 AMC&D DT-IIB2 (AV-8B) 2Q/01-3Q/01 TAMMAC/N-PFPS DT 3Q/02-4Q/02 MCAS DT 3Q/02-1Q/03 TAWS OT (17C/18E OFF) 3Q/02-2Q/03 AMC&D DT-IIA3 (F/A-18E/F)								
(U) Contract Milestones		3Q/00 AMC&D EMD Contract Award 2Q/00 CNS/ATM Contract Award Mode S 2Q/00 TAMMAC/N-PFPS TRANSITION AWARD 2Q/01 TAMMAC/JMPS UPC DEVELOPMENT AWARD								

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Exhibit R-3 Cost Analysis (page 1)								DATE: <b>June 2001</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604215N STANDARD DEVELOPMENT			W0572, Joint Services/Navy Standard Avionics Components and Subsystems						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
AMC&D/ EMD Prime Contract	SS/845	Boeing, St. Louis, MO	37.294	6.100	11/00						43.394	43.394
AMC&D/ EMD Prime Contract	SS/CP	Boeing, St. Louis, MO	27.318	54.307	11/00	38.695	11/01			Continuing	Continuing	
LPIA/EMD Prime Contract	C/CS	BAE Systems, Wayne, NJ	7.416								7.416	7.416
TAMMAC/EMD Prime Contract	SS/CPIF	Boeing, St. Louis, MO	25.677								25.677	25.341
CNS/ATM/EMD Prime Contract	SS/BOA	Litton, Woodland Hills, CA	1.032			1.000	01/02				2.032	2.032
CNS/ATM/EMD Prime Contract	SS/CPIF	Rockwell, Cedar Rapids, IA	2.214	0.850	03/01						3.064	3.064
CNS/ATM/EMD Prime Contract	C/FPIF	BAE Systems, Greenlawn, NY	1.383	2.400	12/00	0.331	12/01				4.114	4.114
MCAS/EMD Prime Contract	TBD	TBD		1.713	04/01	0.434	01/02				2.147	2.147
Miscellaneous	Misc	Misc	44.517	8.139	11/00	7.349	11/01				60.005	
SBIR Assessment				2.238							2.238	
Subtotal Product Development			146.851	75.747		47.809				Continuing	Continuing	
Remarks:												
Miscellaneous	Misc	Misc	14.392	3.574	11/00	3.520	11/01			Continuing	Continuing	
Subtotal Support			14.392	3.574		3.520				Continuing	Continuing	
Remarks:												
LPIA - BAE Systems Contract is a Cost Share Contract and does not have a Target Value. This contract has been changed from a CPIF to a Cost Share and a total liability to the government of \$7,416.												

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Exhibit R-3, Project Cost Analysis  
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## CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: <b>June 2001</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
<b>RDT&amp;E, N / BA-5</b>			0604215N, Standards Development			W0572, Joint Services/Navy Standard Avionics Components and Subsystems						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Systems T&E/OT&E	WX	NAWC PAX	1.733	0.000		0.000					1.733	
Miscellaneous	Misc	Misc	15.939	3.123		3.096				Continuing	Continuing	
Subtotal T&E			17.672	3.123		3.096				Continuing	Continuing	
Remarks:												
Subtotal Management			0.000	0.000		0.000				0.000	0.000	
Remarks:												
Total Cost			178.915	82.444		54.425				Continuing	Continuing	
Remarks:												

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Exhibit R-3, Project Cost Analysis  
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