

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5					R-1 ITEM NOMENCLATURE 0604215N, Standards Development			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	71.083	39.443	50.063	55.431	69.863	43.797	31.601	27.592
E2310/Flight Polynomials	0.355							
E2311/Stores Planning and Weaponneering Module	7.328	1.742	5.016	6.297	4.930	6.141	6.688	6.994
E2312/Common Helicopters	2.654	1.175	0.960	0.891	0.916	1.105	1.125	1.145
S1857/Calibration Standards	4.754	4.203	1.266	1.388	1.405	1.697	1.721	1.750
W0572/Joint Services/Navy Standard Avionics Components and Subsystems	55.992	32.323	42.821	46.855	62.612	34.854	22.067	17.703

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

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 Naval Air Training & Operations Procedure & Standard (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 Weaponneering Module: The Naval Stores Planning and Weaponneering (NSPW), now referred to as the Naval Aviation Weaponneering Component (NAWC) project is an incrementally developed software product that will provide a certified unit level weaponneering capability for Naval aircraft in the Joint Mission Planning Segment (JMPS). NAWC 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 2000 environment and integrated with Joint Munitions Effectiveness Manual (JMEM) software, and target area planning functions to comprise NAWC. F/A-18A/B/C/D is the first platform to be introduced in the first increment of NAWC as a stand alone product, prior to migration to JMPS.

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Exhibit R-2, RDTEN Budget Item Justification
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APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /BA-5	R-1 ITEM NOMENCLATURE 0604215N, Standards Development	
<p>Project E2312, Common Helicopters: Automated mission planning systems to date have been developing targeting 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 & 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, UH-1N, H-46D/E, H-53D/E, H-60B/F/H/R/S, and V-22. The developed common helicopter functionality will initially be implemented in Naval Portable Flight Planning Software (N-PFPS) then migrated to JMPS. Subsequent common helicopter functionality will be developed for implementation in the Joint Mission Planning Segment (JMPS) after JMPS initial fielding.</p> <p>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 and Joint Services Metrology RDT&E program.</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&E Articles include Communication Navigation Surveillance/Air Traffic Management (CNS/ATM) Engineering Manufacturing Development (EMD) units, AMC&D EMD units which include Display Processors and Mission Processors, Display Heads, 8 x 10 displays, and Fiber Channel Switches, Joint Tactical Radio Systems (JTRS) EMD units, Aircraft Wireless Internal Communication Systems (AWICS) EMD units, Vector Product Format (VPF) software units and Terrain Awareness Warning Systems (TAWS) units. New Start for FY04 is JTRS.</p>		

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604215N Standard Development			PROJECT NUMBER AND NAME E2311 Navy Stores Planning and Weaponneering Module			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	7.328	1.742	5.016	6.297	4.930	6.141	6.688	6.994
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Project E2311, Stores Planning and Weaponneering Module: The Naval Stores Planning and Weaponneering (NSPW), now referred to as the Naval Aviation Weaponneering Component (NAWC) project is an incrementally developed software product that will provide a certified unit level weaponneering capability for Naval aircraft in the Joint Mission Planning Segment (JMPS). NAWC will provide current planning results for specific aircraft type and model that include store/weapon carriage authorization, 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 2000 environment and integrated with Joint Munitions Effectiveness Manual (JMEM) software, and target area planning functions to comprise NAWC. F/A-18A/B/C/D is the first platform to be introduced in the first increment of NAWC as a stand alone product, prior to migration to JMPS.

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Exhibit R-2a, RDTEN Project Justification
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B. Accomplishments/Planned Program																			
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C. PROGRAM CHANGE SUMMARY:

	FY 2002	FY 2003	FY 2004	FY 2005
Funding:				
Previous President's Budget:	7.498	1.781	1.680	0.572
Current BES/President's Budget	7.328	1.742	5.016	6.297
Total Adjustments	-0.170	-0.039	3.336	5.725
Summary of Adjustments				
Congressional program reductions				
Congressional undistributed reductions		-0.010		
Congressional rescissions				
SBIR/STTR Transfer				
Economic Assumptions	-0.020	-0.029	-0.170	-0.180
Reprogrammings	-0.150			
Other Adjustment			3.506	5.905
Congressional increases				
Subtotal	-0.170	-0.039	3.336	5.725

Schedule:

ATACS scheduel eas ajusted from 3Q/02 to 1Q/03 due to the late completion of changes made to the TACMAN.

Technical: Not Applicable

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604215N Standard Development			PROJECT NUMBER AND NAME E2311 Navy Stores Planning and Weaponeering Module					

D. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
BLI 287600 TAC A/C Mission Planning Syster	13.159	6.458	8.639	9.797	8.113	11.934	12.152	12.370	Continuing	Continuing
PE2806F Air Force Mission Support System	17.300	16.540	62.348	144.059	144.544	247.154	98.609	96.164	Continuing	Continuing
Related RDT&E:										
P.E. 0604231N (Mission Planning)										

E. ACQUISITION STRATEGY:

Naval Aviation Weaponeering Component (NAWC) 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, fusing, delivery and safe escape, unguided trajectory modeling, guided weapons models, weapon effects, and aerodynamic flutter to the software development team. NAWC management and the test team for IV & V and Certification Testing are also combined teams of United States Government (USG) and contractor entities. Contractor efforts are procured predominately through fixed-price GSA or BPA contracts.

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Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604215N Standard Development			PROJECT NUMBER AND NAME E2311 Navy Stores Planning and Weaponering Module						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Software Development	WR	NAWCAD, PAX RIVER, MD	11.541	0.235	11/02	0.405	11/03	0.639	11/04	Continuing	Continuing	
Primary Software Development	GSA/FP	Various	11.747	0.355	01/02	1.813	11/03	2.254	11//04	Continuing	Continuing	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering	Various	Various	5.163	0.181	11/03	0.475	11/03	0.626	11/04	Continuing	Continuing	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			28.451	0.771		2.693		3.519		Continuing	Continuing	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000			0.000	
Remarks:												

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 8 of 48)

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Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-5			PROGRAM ELEMENT 0604215N Standard Development				PROJECT NUMBER AND NAME E2311 Navy Stores Planning and Weaponing Module					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various	4.639	0.470	11/02	0.687	11/03	0.832	11/04	Continuing	Continuing	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			4.639	0.470		0.687		0.832		Continuing	Continuing	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support	WR	NAWCAD, PAX RIVER, MD		0.296	11/02	1.203	11/03	1.448	11/04	Continuing	Continuing	
Program Management Support	Various	Various	2.084	0.075	11/02	0.337	11/03	0.385	11/04	Continuing	Continuing	
Travel	WR	NAWCAD, PAX RIVER, MD	0.990	0.130	11/02	0.096	11/03	0.113	11/04	Continuing	Continuing	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			3.074	0.501		1.636		1.946		Continuing	Continuing	
Remarks:												
Total Cost			36.164	1.742		5.016		6.297		Continuing	Continuing	
Remarks:												

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Exhibit R-3, Project Cost Analysis
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EXHIBIT R4, Schedule Profile																								DATE:											
APPROPRIATION/BUDGET ACTIVITY												PROGRAM ELEMENT NUMBER AND NAME												PROJECT NUMBER AND NAME											
RDT&E, N / BA-5												0604215N Standard Development												E2311 Navy Stores Planning and Weaponneering Module											
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009						
	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																																			
ATACS 2.3 Final Release					△																														
NAWC V.1 Release (F/A-18A/B/C/D)						△																													
NAWC V.2 Release (F/A-18A/B/C/D/E/F)/JMPS Integration																		△																	
Test & Evaluation Milestones																																			
NAWC V.1 Cert Test (F/A-18A/B/C/D)																																			
NAWC V.2 FQT & Cert Test (F/A-18A/B/C/D/E/F)																																			
Production Milestones																																			
NAWC V.1 Dev (F/A-18A/B/C/D)																																			
NAWC V.2 Development (F/A-18A/B/C/D/E/F)																																			
Deliveries																																			

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* Not required for Budget Activities 1, 2, 3, and 6

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Exhibit R-4, Schedule Profile
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Exhibit R-4a, Schedule Detail
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604215N Standard Development				PROJECT NUMBER AND NAME E2312 Common Helicopters			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	2.654	1.175	0.960	0.891	0.916	1.105	1.125	1.145
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A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Project E2312, Common Helicopters: Automated mission planning systems to date have been developing targeting 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 & elevation), and enhanced fidelity of landing zone, and threat analyses. The following type/model/series aircraft are supported by PE: AH-1W, UH-1N, H-46D/E, H-53D/E, H-60B/F/H/R/S, and V-22. The developed common helicopter functionality will initially be implemented in Naval Portable Flight Planning Software (N-PFPS) then migrated to JMPS. Subsequent common helicopter functionality will be developed for implementation in the Joint Mission Planning Segment (JMPS) after JMPS initial fielding.

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B. Accomplishments/Planned Program																			
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	FY 02	FY 03	FY 04	FY 05															
Accomplishments/Effort/Subtotal Cost	2.654	1.175	0.960	0.891															
RDT&E Articles Quantity																			
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RDT&E Articles Quantity																			

R-1 SHOPPING LIST - Item No. 90

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604215N Standard Development	PROJECT NUMBER AND NAME E2312 Common Helicopters		
C. PROGRAM CHANGE SUMMARY:				
Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget:	2.715	1.202	1.249	1.086
Current BES/President's Budget	2.654	1.175	0.960	0.891
Total Adjustments	-0.061	-0.027	-0.289	-0.195
Summary of Adjustments				
Congressional program reductions	-0.006			
Congressional undistributed reductions	-0.007			
Congressional rescissions				
SBIR/STTR Transfer				
Economic Assumptions	-0.007	-0.020	-0.022	-0.019
Reprogrammings	-0.048			
Other Adjustment			-0.267	-0.176
Congressional increases				
Subtotal	-0.061	-0.027	-0.289	-0.195
Schedule: Not Applicable				
Technical: Not Applicable				

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604215N Standard Development			PROJECT NUMBER AND NAME E2312 Common Helicopters					
D. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
BLI 287600 TAC A/C Mission Planning Syster	13.159	6.458	8.639	9.797	8.113	11.934	12.152	12.370	Continuing	Continuing
E. ACQUISITION STRATEGY:										

R-1 SHOPPING LIST - Item No. 90

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604215N Standard Development			PROJECT NUMBER AND NAME E2312 Common Helicopters						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Software Development	MP	Eglin AFB, Florida	3.083	0.974	11/02	0.727	11/03	0.723	11/04	Continuing	Continuing	
Primary Software Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering											0.000	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			3.083	0.974		0.727		0.723		Continuing	Continuing	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

R-1 SHOPPING LIST - Item No. 90

UNCLASSIFIED

Exhibit R-3 RDTEN Project Cost Analysis
(Exhibit R-3, 16 of 48)

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)									DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-5			PROGRAM ELEMENT 0604215N Standard Development			PROJECT NUMBER AND NAME E2312 Common Helicopters						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support	WX	NAWCAD, PAX RIVER, MD	2.138	0.171	11/02	0.193	11/03	0.138	11/04	Continuing	Continuing	
Program Management Support	Various	Various	0.918								0.000	
Travel	WX	NAWCAD, PAX RIVER, MD	0.215	0.030	11/02	0.040	11/03	0.030	11/04	Continuing	Continuing	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			3.271	0.201		0.233		0.168		Continuing	Continuing	
Remarks:												
Total Cost			6.354	1.175		0.960		0.891		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 90

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, 17 of 48)

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: February 2003								
APPROPRIATION/BUDGET ACTIVITY									PROGRAM ELEMENT NUMBER AND NAME												PROJECT NUMBER AND NAME											
RDT&E, N / BA-5									0604215N Standard Development												E2312 Common Helicopters											
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	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																																
Prototype Phase																																
PFPS v3.3																																
PFPS v4.0																																
PFPS v4.1																																
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CMDL UPC																																
Test & Evaluation Milestones																																
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PFPS v4.0																																
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CMDL v2.1																																
Production Milestones																																
CMDL UPC																																
Deliveries																																

R-1 SHOPPING LIST - Item No. 90

* Not required for Budget Activities 1, 2, 3, and 6

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Exhibit R-4, Schedule Profile
(Exhibit R-4, 18 of 48)

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CLASSIFICATION:

[illegible]

R-1 SHOPPING LIST - Item No. 90

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Exhibit R-4a, Schedule Detail
(Exhibit R-4a, page 19 of 48)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME Program Element (PE) No. 0604215N; Title: Standards Development			PROJECT NUMBER AND NAME Project Unit (PU) No. S1857, Calibration Standards			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	4.754	4.203	1.266	1.388	1.405	1.697	1.721	1.750
RDT&E Articles Qty								
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: 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 and Joint Services Metrology RDT&E program. This project supports the military requirement to verify the performance of all test systems used to validate the operation of Navy systems with calibration standards traceable to the National Institute of Standards and Technology.								

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME Program Element (PE) 0604215N Standards Developme	PROJECT NUMBER AND NAME Project Unit (PU) No. S1857, Calibration Standards																	
B. Accomplishments/Planned Program																			
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Accomplishments/Effort/Subtotal Cost	4.754	4.203	1.266	1.388															
RDT&E Articles Quantity																			
<div style="border: 1px solid black; padding: 5px;"> <p>FY-2002 Accomplishments: \$43,000 of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.</p> <p>(U) (\$ 1.903) Completed 19 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), infrared target designators (3 – 5 um), 3 modeling and simulation projects begun in FY 00 to develop tools for reducing the cost of maintenance and optimizing test decisions, radar cross section measurements, optical systems, fuel measurement systems, multifunction electrical test equipment, electronic internet systems, new technology for reduced crew size, and capacitance measurement systems.</p> <p>(U) (\$ 1.669) Continued development of 6 calibration standards (hardware) in support of laser power measurements, broadband communication systems, Forward Looking infrared systems, chemical/biological sensors, missile guidance systems, and a modeling and simulation project.</p> <p>(U) (\$ 1.139) Began development of a suite of standards to reduce cumbersome work practices on board ships.</p> </div>																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 30%;"></th> <th style="width: 15%;">FY 02</th> <th style="width: 15%;">FY 03</th> <th style="width: 15%;">FY 04</th> <th style="width: 15%;">FY 05</th> </tr> <tr> <td>Accomplishments/Effort/Subtotal Cost</td> <td>4.754</td> <td>4.203</td> <td>1.266</td> <td>1.388</td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>						FY 02	FY 03	FY 04	FY 05	Accomplishments/Effort/Subtotal Cost	4.754	4.203	1.266	1.388	RDT&E Articles Quantity				
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RDT&E Articles Quantity																			
<div style="border: 1px solid black; padding: 5px;"> <p>FY 2003 Plan:</p> <p>(U) (\$ 2.955) Complete 21 calibration standards (hardware) in support of reducing shipboard workload, CBD sensors, aircraft EMI/EMC evaluation , broadband communication communication systems, laser power measurements, missile guidance systems, Forward Looking infrared systems, and a modeling and simulation project.</p> <p>(U) (\$ 1.248) Continue development of 5 calibration standards to reduce cumbersome work practices on board ships; and to support MEMS shipboard instatlains, and Missile guidance systems.</p> </div>																			
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Accomplishments/Effort/Subtotal Cost	4.754	4.203	1.266	1.388															
RDT&E Articles Quantity																			
<div style="border: 1px solid black; padding: 5px;"> <p>FY 2004 Plan:</p> <p>(U) (\$ 1.071) Complete 5 calibration standards (hardware) in support of reducing shipboard workload, broadband communication systems, missile guidance systems.</p> <p>(U) (\$.195) Begin development of calibration standard system to replace aging Navy-Marine Corbs Lab Calibration Systems.</p> </div>																			

R-1 SHOPPING LIST - Item No. 90

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Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 21 of 48)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME Program Element (PE) 0604215N Standards Developme	PROJECT NUMBER AND NAME Project Unit (PU) No. S1857, Calibration Standards		
B. Accomplishments/Planned Program (Cont.)				
	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	4.754	4.203	1.266	1.388
RDT&E Articles Quantity				
FY 2005 Plan: (U) (\$ 1.000) Continue development of calibration standards to replace aging Navy-Marine Corps Lab Calibration Systems (MECCA). (U) (\$.388) Begin development of calibration standards in support of broadband communication systems, torque systems for aircraft safety, and reduce cumbersome shipboard work practices.				

R-1 SHOPPING LIST - Item No. 90

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003																																																																							
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME Program Element (PE) 0604215N Standards Development	PROJECT NUMBER AND NAME Project Unit (PU) No. S1857, Calibration Standards																																																																								
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R-1 SHOPPING LIST - Item No. 90

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE:		February 2003	
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME			
RDT&E, N / BA-5			Program Element (PE) 0604215N Standards Developmen				Project Unit (PU) No. S1857, Calibration Standards			
D. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</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>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
Not Applicable										
E. ACQUISITION STRATEGY: *										
Not Applicable										

R-1 SHOPPING LIST - Item No. 90

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UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			Program Element (PE) 0604215N Standards Development			Project Unit (PU) No. S1857, Calibration Standards						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	WR	NSWC, Corona Division		3.413		0.911		1.028			5.352	
Ancillary Hardware Development											0.000	
Component Development											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering											0.000	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	3.413		0.911		1.028		0.000	5.352	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 25 of 48)

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-5			PROGRAM ELEMENT Program Element (PE) 0604215N Standards Development			PROJECT NUMBER AND NAME Program Element (PE) 0604215N Standards Development						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support				0.290		0.125		0.122			0.537	
Government Engineering Support				0.430		0.200		0.208			0.838	
Program Management Support											0.000	
Travel				0.070		0.030		0.030			0.130	
Labor (Research Personnel)											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.790		0.355		0.360		0.000	1.505	
Remarks:												
Total Cost			0.000	4.203		1.266		1.388		0.000	6.857	
Remarks:												

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 26 of 48)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604215N, Standards Development			PROJECT NUMBER AND NAME W0572, Joint Services/Navy Standard Avionics Components and Subsystems			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	55.992	32.323	42.821	46.855	62.612	34.854	22.067	17.703
RDT&E Articles Qty	22		21	2	1			

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 Terrain Awareness Warning System (TAWS), Tactical Aircraft Moving Map Capability (TAMMAC), Midair Collision Avoidance System (MCAS), Communication Navigation Surveillance Air Traffic Management (CNS/ATM), Advanced Mission Computer & Displays (AMC&D), Vector Product Format (VPF), Aircrew Wireless Internal Communication Systems (AWICS), and the Joint Tactical Radio System (JTRS). Participation in Human Factors Quality Management Board (HFQMB) ensures Navy safety upgrades and mandatory safety improvements for naval aircraft. New Start for FY04 is JTRS.

The RDT&E Articles include Communication Navigation Surveillance/Air Traffic Management (CNS/ATM) Engineering Manufacturing Development (EMD) units, AMC&D EMD units which include Display Processors and Mission Processors, Display Heads, 8 x 10 displays, and Fiber Channel Switches, Joint Tactical Radio Systems (JTRS) EMD units, Aircrew Wireless Internal Communication Systems (AWICS) EMD units, Vector Product Format (VPF) software units and Terrain Awareness Warning Systems (TAWS) units.

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Exhibit R-2a, RDTE Project Justification
(Exhibit R-2a, page 27 of 48)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604215N, Standards Development	PROJECT NUMBER AND NAME W0572, Joint Services/Navy Standard Avionics Components and Subsystems																	
(U) B. Accomplishments/Planned Program																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 30%;">AMC&D</th> <th style="width: 15%;">FY 02</th> <th style="width: 15%;">FY 03</th> <th style="width: 15%;">FY 04</th> <th style="width: 15%;">FY 05</th> </tr> <tr> <td>Accomplishments/Effort/Subtotal Cost</td> <td>44.365</td> <td>27.425</td> <td>12.222</td> <td>6.103</td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td>16</td> <td></td> <td></td> <td></td> </tr> </table> <p style="margin-top: 10px;">Conducted PDR and CDR for 8 X10 display. Continued development and obtain production approval for Advanced Multi-Purpose Color Display (AMPCD) for AV-8B and F/A-18C/D. For F/A-18E/F system: completed DT-IIA-2; conducted OT-IIA-1 (OA); continued development of 8X10 display, Fibre Channel Network Switch (FCNS) and AMC; begin and complete DT-IIA-3; conduct TECHEVAL and DT-IIA-4; conduct OPEVAL and Operational Test of Type 2 AMC; and achieve MS III. For AV-8B: completed DT-IIB-1 and DT-IIB-2 (TECHEVAL); continued development of AMC; begin and complete OT-IIB (OPEVAL; and achieve MS III. Complete development of 8X10 display, FCNS and AMC. RDT&E Article Quantity in FY02 are being purchased to allow parallel development and testing to meet demanding schedule requirements.</p>					AMC&D	FY 02	FY 03	FY 04	FY 05	Accomplishments/Effort/Subtotal Cost	44.365	27.425	12.222	6.103	RDT&E Articles Quantity	16			
AMC&D	FY 02	FY 03	FY 04	FY 05															
Accomplishments/Effort/Subtotal Cost	44.365	27.425	12.222	6.103															
RDT&E Articles Quantity	16																		
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 30%;">JSRC</th> <th style="width: 15%;">FY 02</th> <th style="width: 15%;">FY 03</th> <th style="width: 15%;">FY 04</th> <th style="width: 15%;">FY 05</th> </tr> <tr> <td>Accomplishments/Effort/Subtotal Cost</td> <td>1.116</td> <td>0.941</td> <td>1.046</td> <td>0.795</td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td></td> <td></td> <td></td> <td></td> </tr> </table> <p style="margin-top: 10px;">Continue to provide leadership in support of the Navy interest to the JSRC tri-service committee promoting commonality and joint programs with focus on interoperability communications, and CNS/ATM. Support and participate in Avionics OAG panels and HFQMB.</p>					JSRC	FY 02	FY 03	FY 04	FY 05	Accomplishments/Effort/Subtotal Cost	1.116	0.941	1.046	0.795	RDT&E Articles Quantity				
JSRC	FY 02	FY 03	FY 04	FY 05															
Accomplishments/Effort/Subtotal Cost	1.116	0.941	1.046	0.795															
RDT&E Articles Quantity																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 30%;">MCAS</th> <th style="width: 15%;">FY 02</th> <th style="width: 15%;">FY 03</th> <th style="width: 15%;">FY 04</th> <th style="width: 15%;">FY 05</th> </tr> <tr> <td>Accomplishments/Effort/Subtotal Cost</td> <td>1.537</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td></td> <td></td> <td></td> <td></td> </tr> </table> <p style="margin-top: 10px;">Safety: Integrated unit on MCAS lead test platform and conducted MCAS developmental testing. Performed platform studies to determine integration impacts on other platforms.</p>					MCAS	FY 02	FY 03	FY 04	FY 05	Accomplishments/Effort/Subtotal Cost	1.537	0.000	0.000	0.000	RDT&E Articles Quantity				
MCAS	FY 02	FY 03	FY 04	FY 05															
Accomplishments/Effort/Subtotal Cost	1.537	0.000	0.000	0.000															
RDT&E Articles Quantity																			

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604215N, Standards Development	PROJECT NUMBER AND NAME W0572, Joint Services/Navy Standard Avionics Components and Subsystems																	
(U) B. Accomplishments/Planned Program																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">TAWs</th> <th style="width: 15%;">FY 02</th> <th style="width: 15%;">FY 03</th> <th style="width: 15%;">FY 04</th> <th style="width: 15%;">FY 05</th> </tr> </thead> <tbody> <tr> <td>Accomplishments/Effort/Subtotal Cost</td> <td style="text-align: center;">2.824</td> <td style="text-align: center;">0.472</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">0.000</td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td style="text-align: center;">2</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p style="margin-top: 10px;">Safety: Completed DT and commenced OT of the Terrain Awareness Warning System (TAWs) for F/A-18 OFP 17C/18E. Evaluated data and test results from simulator and flight testing of industry based TAWs and sensors which supplement TAWs performance. Support fleet release of the TAWs for F/A-18 OFP 18E with fleet briefs and training. Monitor initial fleet acceptance of the TAWs for F/A-18 OFP 18E. Begin development of program plans based on research of commercial based TAWs and sensors and applicability to other Navy platforms. Two AMU test articles were purchased for lab use at NAWCAD PAX.</p>					TAWs	FY 02	FY 03	FY 04	FY 05	Accomplishments/Effort/Subtotal Cost	2.824	0.472	0.000	0.000	RDT&E Articles Quantity	2			
TAWs	FY 02	FY 03	FY 04	FY 05															
Accomplishments/Effort/Subtotal Cost	2.824	0.472	0.000	0.000															
RDT&E Articles Quantity	2																		
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">TAMPS (TAMMAC)</th> <th style="width: 15%;">FY 02</th> <th style="width: 15%;">FY 03</th> <th style="width: 15%;">FY 04</th> <th style="width: 15%;">FY 05</th> </tr> </thead> <tbody> <tr> <td>Accomplishments/Effort/Subtotal Cost</td> <td style="text-align: center;">0.224</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">0.000</td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p style="margin-top: 10px;">Completed functional testing efforts for TAMMAC/N-PFPS map planning capabilities. Conducted CDR, software coding and unit testing efforts for TAMMAC/JMPS (UPC).</p>					TAMPS (TAMMAC)	FY 02	FY 03	FY 04	FY 05	Accomplishments/Effort/Subtotal Cost	0.224	0.000	0.000	0.000	RDT&E Articles Quantity				
TAMPS (TAMMAC)	FY 02	FY 03	FY 04	FY 05															
Accomplishments/Effort/Subtotal Cost	0.224	0.000	0.000	0.000															
RDT&E Articles Quantity																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">JMPS</th> <th style="width: 15%;">FY 02</th> <th style="width: 15%;">FY 03</th> <th style="width: 15%;">FY 04</th> <th style="width: 15%;">FY 05</th> </tr> </thead> <tbody> <tr> <td>Accomplishments/Effort/Subtotal Cost</td> <td style="text-align: center;">0.549</td> <td style="text-align: center;">0.896</td> <td style="text-align: center;">1.166</td> <td style="text-align: center;">0.000</td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p style="margin-top: 10px;">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). Third software release for ARC-210 AFP as fully integrated JMPS software segment (with corrected STRs from previous release). Complete software coding and unit testing. Conduct Functional/developmental testing efforts for TAMMAC/JMPS Map planning capability. Conduct SRR and produce software build of the TAMMAC Joint Mission Planning System (JMPS) Unique Planning Component (UPC) to resolve any deficiencies from Operational Test. Incorporate any common requirements from the TAMMAC integration of the MH-60S and AV-8B platforms.</p>					JMPS	FY 02	FY 03	FY 04	FY 05	Accomplishments/Effort/Subtotal Cost	0.549	0.896	1.166	0.000	RDT&E Articles Quantity				
JMPS	FY 02	FY 03	FY 04	FY 05															
Accomplishments/Effort/Subtotal Cost	0.549	0.896	1.166	0.000															
RDT&E Articles Quantity																			

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Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 29 of 48)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604215N, Standards Development	PROJECT NUMBER AND NAME W0572, Joint Services/Navy Standard Avionics Components and Subsystems																	
(U) B. Accomplishments/Planned Program																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 30%;">CNS/ATM</th> <th style="width: 15%;">FY 02</th> <th style="width: 15%;">FY 03</th> <th style="width: 15%;">FY 04</th> <th style="width: 15%;">FY 05</th> </tr> <tr> <td>Accomplishments/Effort/Subtotal Cost</td> <td style="text-align: right;">5.377</td> <td style="text-align: right;">1.322</td> <td style="text-align: right;">11.938</td> <td style="text-align: right;">16.471</td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td style="text-align: center;">4</td> <td></td> <td></td> <td></td> </tr> </table> <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <p>Continued CNS/ATM integration of Mode S and Required Navigation Performance (RNP)-4 functional integration and certification efforts into naval aircraft. Achieve MS III decision for Mode S. Perform naval aircraft platform functional integration for F/A-18E/F, KC-130J, MH-60S, MH-60R and E-2C in the areas of communications, navigation, surveillance, processing and displays. (Mode S, 8.33khz, FM Immunity, RNP/RNAV). Continue CNS/ATM requirements definition. RDT&E articles in FY02 required for Mode S integration and test.</p> </div>					CNS/ATM	FY 02	FY 03	FY 04	FY 05	Accomplishments/Effort/Subtotal Cost	5.377	1.322	11.938	16.471	RDT&E Articles Quantity	4			
CNS/ATM	FY 02	FY 03	FY 04	FY 05															
Accomplishments/Effort/Subtotal Cost	5.377	1.322	11.938	16.471															
RDT&E Articles Quantity	4																		
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 30%;">VPF</th> <th style="width: 15%;">FY 02</th> <th style="width: 15%;">FY 03</th> <th style="width: 15%;">FY 04</th> <th style="width: 15%;">FY 05</th> </tr> <tr> <td>Accomplishments/Effort/Subtotal Cost</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.795</td> <td style="text-align: right;">3.432</td> <td style="text-align: right;">2.378</td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td></td> <td></td> <td style="text-align: center;">1</td> <td></td> </tr> </table> <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <p>Conduct Vector Product Format (VPF) integration study for TAMMAC. Perform VPF software and hardware integration into TAMMAC. Complete VPF Integration Systems Design Review (SDR). Award VPF development contract. Conduct SRR, PDR and CDR review on VPF. Conduct VPF Developmental Testing (DT). Conduct VPF Systems Qualification Testing (SQT). Conduct VPF Operational Test. One DMC TAMMAC unit will be procured to conduct T&E of the VPF software in TAMMAC.</p> </div>					VPF	FY 02	FY 03	FY 04	FY 05	Accomplishments/Effort/Subtotal Cost	0.000	0.795	3.432	2.378	RDT&E Articles Quantity			1	
VPF	FY 02	FY 03	FY 04	FY 05															
Accomplishments/Effort/Subtotal Cost	0.000	0.795	3.432	2.378															
RDT&E Articles Quantity			1																
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 30%;">AWICS</th> <th style="width: 15%;">FY 02</th> <th style="width: 15%;">FY 03</th> <th style="width: 15%;">FY 04</th> <th style="width: 15%;">FY 05</th> </tr> <tr> <td>Accomplishments/Effort/Subtotal Cost</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.472</td> <td style="text-align: right;">2.137</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td></td> <td></td> <td style="text-align: center;">18</td> <td></td> </tr> </table> <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <p>Safety: Produce request for proposal (RFP) for candidate AWICS. Conduct operational assessment (OA) to down-select to one system. Achieve Milestone B for AWICS. Perform initial developmental testing on lead platform (H-53). Achieve Milestone C for AWICS. RDT&E articles are used for environmental, integration, EMI, EMC, TEMPEST and flight testing.</p> </div>					AWICS	FY 02	FY 03	FY 04	FY 05	Accomplishments/Effort/Subtotal Cost	0.000	0.472	2.137	0.000	RDT&E Articles Quantity			18	
AWICS	FY 02	FY 03	FY 04	FY 05															
Accomplishments/Effort/Subtotal Cost	0.000	0.472	2.137	0.000															
RDT&E Articles Quantity			18																

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Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 30 of 48)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2003																																														
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604215N, Standards Development	PROJECT NUMBER AND NAME W0572, Joint Services/Navy Standard Avionics Components and Subsystems																																															
(U) B. Accomplishments/Planned Program																																																	
<table border="1" style="width: 100%; border-collapse: collapse;"><thead><tr><th style="width: 30%;">JTRS</th><th style="width: 15%;">FY 02</th><th style="width: 15%;">FY 03</th><th style="width: 15%;">FY 04</th><th style="width: 15%;">FY 05</th></tr></thead><tbody><tr><td>Accomplishments/Effort/Subtotal Cost</td><td style="text-align: center;">0.000</td><td style="text-align: center;">0.000</td><td style="text-align: center;">10.880</td><td style="text-align: center;">21.108</td></tr><tr><td>RDT&E Articles Quantity</td><td></td><td></td><td style="text-align: center;">2</td><td style="text-align: center;">2</td></tr></tbody></table> <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"><p>Award integration contract for the Joint Tactical Radio System (JTRS). Begin aircraft integration analysis and planning for lead platform. Begin development of mission, mission planning, and message processing software for JTRS. RDT&E articles are Engineering Development Units for integration lab install and test aircraft installs. New Start effort for FY04.</p><p>JTRS is an Air Force lead program. The Navy is utilizing an Air Force contract vehicle for navy unique requirements and a Navy vehicle for integration efforts on the lead platform.</p></div> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 20px;"><thead><tr><th style="width: 30%;"></th><th style="width: 15%;">FY 02</th><th style="width: 15%;">FY 03</th><th style="width: 15%;">FY 04</th><th style="width: 15%;">FY 05</th></tr></thead><tbody><tr><td>Accomplishments/Effort/Subtotal Cost</td><td style="text-align: center;">0.000</td><td style="text-align: center;">0.000</td><td style="text-align: center;">0.000</td><td style="text-align: center;">0.000</td></tr><tr><td>RDT&E Articles Quantity</td><td></td><td></td><td></td><td></td></tr></tbody></table> <div style="border: 1px solid black; height: 70px; margin-top: 20px;"></div> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 20px;"><thead><tr><th style="width: 30%;"></th><th style="width: 15%;">FY 02</th><th style="width: 15%;">FY 03</th><th style="width: 15%;">FY 04</th><th style="width: 15%;">FY 05</th></tr></thead><tbody><tr><td>Accomplishments/Effort/Subtotal Cost</td><td style="text-align: center;">0.000</td><td style="text-align: center;">0.000</td><td style="text-align: center;">0.000</td><td style="text-align: center;">0.000</td></tr><tr><td>RDT&E Articles Quantity</td><td></td><td></td><td></td><td></td></tr></tbody></table> <div style="border: 1px solid black; height: 70px; margin-top: 20px;"></div>					JTRS	FY 02	FY 03	FY 04	FY 05	Accomplishments/Effort/Subtotal Cost	0.000	0.000	10.880	21.108	RDT&E Articles Quantity			2	2		FY 02	FY 03	FY 04	FY 05	Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000	RDT&E Articles Quantity						FY 02	FY 03	FY 04	FY 05	Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000	RDT&E Articles Quantity				
JTRS	FY 02	FY 03	FY 04	FY 05																																													
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604215N, Standards Development	PROJECT NUMBER AND NAME W0572, Joint Services/Navy Standard Avionics Components and Subsystems

(U) C. PROGRAM CHANGE SUMMARY:

	FY 2002	FY 2003	FY 2004	FY 2005
(U) Funding:				
Previous President's Budget:	53.943	33.076	18.961	9.602
Current BES/President's Budget	55.992	32.323	42.821	46.855
Total Adjustments	2.049	-0.753	23.860	37.253
Summary of Adjustments				
Congressional program reductions				
Congressional undistributed reductions		-0.217		
Congressional rescissions	-0.115			
SBIR/STTR Transfer	-1.057			
Economic Assumptions	-0.156	-0.536	-1.025	-1.031
Reprogrammings	3.304			
Other Adjustments	0.073		24.885	38.284
Congressional increases				
Subtotal	2.049	-0.753	23.860	37.253

(U) Schedule:

LPJA Milestone III decision changed from 2Q/02 to 2Q/03 due to required corrections of minor deficiencies identified in operational test.

AMC&D OPEVAL from 4Q/03 to 2Q/03 due to a change in the F/A-18E/F test schedule and fleet deployment schedule. AMC&D MS III (AV-8B) changed from 2Q/03 to 3Q/03 to align with the OSCAR schedule. AMC&D TECHEVAL removed from 3Q/03 and combined with 4Q/03 DT-11A-4 to align with the F/A-18E/F Flight Test Schedule. AMC&D OT changed from 1Q/04 to 2Q/04 to align with the F/A-18E/F overarching test plan.

CNS/ATM Mode S Milestone III decision changed from 4Q/02 to 2Q/03 due to VH-3 aircraft availability.

CCP Milestones removed because CCP is planned as a NDI system for CNS/ATM integrated solution.

JTRS development contract in 3Q/04 is not reflected in the schedule. The Navy is utilizing an Air Force contract vehicle for navy unique requirements (development contract).

(U) Technical:

Not Applicable.

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EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT NUMBER AND NAME 0604215N, Standards Development			PROJECT NUMBER AND NAME W0572, Joint Services/Navy Standard Avionics Components and Subsystems			

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
Common Avionics, APN	67.899	61.774	148.627	169.44	227.755	202.918	183.59	174.596	Continuing	Continuing
0702207N, Depot Maintenance, RDT&E	0.694	0	0	0	0	0	0	0	0	8.462
AN/ARC-210 RT-1794(C)										

(U) E. ACQUISITION STRATEGY: *

Advanced Mission Computer & Display (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 Fixed Price Incentive contract for 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. The Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM) program is a systems of systems. The program will encompass the integration of various systems that are currently post-MS III. Systems will be procured utilizing existing Navy contracts for integration on forward-fit and retrofit platforms to provide CNS/ATM functionality. Joint Tactical Radio System (JTRS) is an Air Force lead program. The Navy is utilizing an Air Force contract vehicle for navy unique requirements and a Navy vehicle for integration efforts on the lead platform. TAMMAC Vector Product Format (VPF) is utilizing a Sole source to Harris Corporation, to incorporate the NIMA VPF data into the the existing TAMMAC FRP Hardware. Aircrew Wireless Internal Communication System (AWICS) is employing a full and open competition to procure a common system for use aboard multiple assault, logistics, Rotary Wing and Fixed Wing aircraft.

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			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 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Prime Hdw Develop, AMC&D OTA845	SS/845	Boeing, St. Louis, MO	54.516								54.516	54.516
Prime Hdw Develop, AMC&D EMD	SS/CP	Boeing, St. Louis, MO	113.179	22.340	11/02	8.890	11/03	4.629	11/04		149.038	149.038
Prime Hdw Develop, LPIA EMD	C/CS	BAE Systems, Wayne, NJ	7.264								7.264	7.264
Prime Hdw Develop, TAMMAC EMD	SS/CPIF	Boeing, St. Louis, MO	26.332								26.332	26.332
Prime Hdw Develop, CNS/ATM EMD	SS/BOA	Litton, Woodland Hills, CA	2.032								2.032	2.032
Prime Hdw Develop, CNS/ATM EMD	SS/CPIF	Rockwell, Cedar Rapids, IA	3.064								3.064	3.064
Prime Hdw Develop, CNS/ATM EMD	C/FPIF	BAE Systems, Greenlawn, NY	2.157								2.157	2.157
Prime Hdw Develop, MCAS EMD	SS/CPFF	BAE Systems, Greenlawn, NY	1.969								1.969	1.969
Prime Hdw Develop, VPF	SS/TBD	Harris, Melbourne, FL		0.493	12/02	2.837	12/03	0.672	12/04		4.002	4.002
Prime Hdw Develop, JTRS	TBD	TBD				5.096	12/03				5.096	
Primary Hardware Development	TBD	TBD		0.100	12/02	0.250	03/04				0.350	
Ancillary Hardware Development												
Training Development												
Aircraft/Ship Integration	WX	NAWCs		0.150	03/03	0.320	03/04	0.199	03/05	Continuing	Continuing	
Aircraft/Ship Integration, CNS/ATM	WX	NAWCs				9.278	04/04	12.493	04/05	Continuing	Continuing	
Aircraft/Ship Integration, JTRS	WX	NAWCs				4.776	03/04	19.879	11/04	Continuing	Continuing	
Ship Suitability												
Systems Engineering	WX	NAWCs		2.276	12/02	3.097	12/03	2.646	12/04	Continuing	Continuing	
Licenses												
Tooling												
GFE												
Award Fees												
Misc			61.470								61.470	
Subtotal Product Development			271.983	25.359		34.544		40.518		Continuing	Continuing	
Remarks:												

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Exhibit R-3, Project Cost Analysis
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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604215N, STANDARD DEVELOPMENT			PROJECT NUMBER AND NAME W0572, Joint Services/Navy Standard Avionics Components and Subsystems						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Development Support	WX	NAWCs		0.690	12/02	0.666	12/03	0.259	12/04	Continuing	Continuing	
Software Development	WX	NAWCs		0.581	03/03	0.364	12/03				0.945	
Integrated Logistics Support	WX	NAWCs		0.338	11/02	0.610	11/03	0.298	12/04	Continuing	Continuing	
Configuration Management												
Technical Data												
Studies & Analysis	WX	NAWCs		0.266	11/02	0.266	11/03	0.266	11/04	Continuing	Continuing	
GFE												
Award Fees												
Misc			21.486								21.486	
Subtotal Support			21.486	1.875		1.906		0.823		Continuing	Continuing	
Remarks:												

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Exhibit R-3, Project Cost Analysis
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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2003			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME							
RDT&E, N / BA-5			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 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Developmental Test & Evaluation, AMC&D	WX	NAWCs	1.733	1.947	11/02	1.569	01/04	0.326	01/05	Continuing	Continuing		
Developmental Test & Evaluation, VPF	WX	NAWCs				0.299	01/04	1.232	01/05		1.531		
Developmental Test & Evaluation, AWICS	WX	NAWCs				0.887	03/04				0.887		
Operational Test & Evaluation	WX	NAWCs		0.748	11/02	0.086	01/04			Continuing	Continuing		
Live Fire Test & Evaluation													
Test Assets													
Tooling													
GFE													
Award Fees													
Misc			22.162								22.162		
Subtotal T&E			23.895	2.695		2.841		1.558		Continuing	Continuing		
Remarks:													
Contractor Engineering Support	WX	NAWCs		0.963	02/03	2.099	02/04	2.668	02/05	Continuing	Continuing		
Government Engineering Support	WX	NAWCs		0.564	12/02	0.805	12/03	0.594	12/04	Continuing	Continuing		
Program Management Support	WX	NAWCs		0.811	11/02	0.576	11/03	0.644	11/04	Continuing	Continuing		
Travel	WX	NAWCs		0.056	11/02	0.050	11/03	0.050	11/04	Continuing	Continuing		
Transportation													
SBIR Assessment			1.057								1.057		
Subtotal Management			1.057	2.394		3.530		3.956		Continuing	Continuing		
Remarks:													
Total Cost			318.421	32.323		42.821		46.855		Continuing	Continuing		
Remarks:													

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Exhibit R-3, Project Cost Analysis
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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE:								
AMC&D																								February 2003								
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT NUMBER AND NAME												PROJECT NUMBER AND NAME												
RDT&E, N / BA-5								0604215N, Standard Development												W0572, Joint Services/Navy Standard Avionics Components and Subsystems												
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	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							MS III (AV-8B)		MS II (F/A-18)																							
Test & Evaluation Milestones																																
Development Test	DT-IIA-2				DT-IIA-3				DT-IIA-4																							
Operational Test																																
Production Milestones																																
LRIP I FY02	◆																															
LRIP II FY02				◆																												
LRIP III FY03							◆																									
FRP FY04									◆																							
Deliveries																																

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Exhibit R-4, Schedule Profile
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Exhibit R-4a, Schedule Detail
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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: February 2003											
JMPs																																			
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											
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009						
	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	1	2	3	4			
Acquisition Milestones																																			
TAMMAC JUMPS UPC Development		SDR	FDR	CDR						SRR																									
		△	△	△						△																									
Test & Evaluation Milestones																																			
Development Test																																			
Operational Test																																			
Production Milestones																																			

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Exhibit R-4a, Schedule Detail
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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: February 2003											
CNS/ATM																																			
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											
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009						
	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																																			
Mode S																																			
F/A-18E/F Integration																																			
MH-60S Integration																																			
MH-60R Integration																																			
KC-130J Integration																																			
E-2C Integration																																			
Production Milestones																																			
Platform Procurements																																			
Deliveries																																			

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Exhibit R-4, Schedule Profile
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Exhibit R-4a, Schedule Detail
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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE:				February 2003							
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											
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009						
	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																																			
VPF Integration Study																																			
Contract Award																																			
Vector Product Development																																			
Software VPF S/W to H/W Intragration																																			
Test & Evaluation Milestones																																			
Development Test																																			
Operational Test																																			
Production Milestones																																			

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Exhibit R-4, Schedule Profile
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Exhibit R-4a, Schedule Detail
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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE: February 2003									
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									
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009				
	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									MSB △				MSC △																				
Request for Proposals Development																																	
Operational Assessment to Downselect to Winner																																	
Contract Award																																	
Test & Evaluation Milestones																																	
Test Readiness Review																																	
H53 Developmental Test																																	
Production Milestones																																	
LRIP 1 FY04																																	
Procurements																																	
Deliveries																																	

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Exhibit R-4a, Schedule Detail
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EXHIBIT R4, Schedule Profile																							DATE: February 2003									
JTRS																																
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														
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	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	1	2	3	4
Acquisition Milestones							MS B													MS C		FRP Dec			IOC							
Air Force Milestones																																
JTRS Prototype Phase																																
Air Force Milestones																																
JTRS Development Milestones								PDR				CDR																				
EDM JTRS Delivery												Lab								Flt Test												
													1	1						1	1				1							
Aircraft Integration Efforts																																
Test & Evaluation Milestones																																
Development Test																																
Operational Test																																
Production Milestones																																
Air Force Milestones																																
LRIP I FY 05																																

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Exhibit R-4a, Schedule Detail
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