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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2007		
APPROPRIATION/BUDGET ACTIVITY						R-1 ITEM NOMENCLATURE			
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7						0205633N, AVIATION IMPROVEMENTS			
COST (\$ in Millions)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	
Total PE Cost	92.494	98.324	100.284	108.840	102.802	74.811	75.404	76.743	
0601 A/C HANDLING & SERVICES EQ	1.676	3.039	2.973	3.267	3.344	3.417	3.480	3.544	
0852 CONSOLIDATION AUTO SPT SYS	7.655	6.854	6.815	7.016	7.206	7.386	7.524	7.665	
1041 ACFT EQ REL/MAINT PROG	2.996	2.986	2.247	2.789	2.821	2.874	2.923	2.973	
1355 A/C ENG COMP IMP (CIP)	65.823	58.458	57.616	60.921	60.054	61.134	61.477	62.561	
3189 DIGITAL I-TER		10.350	4.371	4.041	3.544				
3190 MULTI-PURPOSE BOMB RACKS			26.262	30.806	25.833				
9999 CONGRESSIONAL ADDS	14.344	16.637							

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Project 0601 - Common Ground Equipment is a Naval Aviation Project to apply new technology to common support equipment necessary to support multiple aircraft. Project 0852 - Consolidated Automated Support System (CASS) is a standardized Automated Test Equipment (ATE) with computer assisted, multi-function capabilities to support the maintenance of aircraft subsystems and missiles. Project 1041 - Aircraft Equipment Reliability/Maintainability Improvement Program (AERMIP) is the only Navy program that provides engineering support for in-service out-of-production aircraft equipment, and provides increased readiness at reduced operational and support cost. Project 1355 - Aircraft Engine Component Improvement Program (CIP) develops reliability and maintainability (R&M) and safety enhancements for in-service Navy aircraft engines, transmissions, propellers, starters, auxiliary power units, electrical generating systems, fuel systems, fuels, and lubricants. Project 3189 - Digital I-TER will develop an increased capability to the existing BRU-42 Improved Triple Ejector Rack (ITER) for the AV-8B. Project 3190 is the Multi-Purpose Bomb Rack (MPBR). The MPBR will replace the BRU-41/41/42/33/55 and provide use for both tactical and training stores on one common rack. The MPBR will be integrated on the F/A-18A+/C/D and F/A-18E/F as part of this project. Project 9999 is Congressional Adds.

\*\$10.350M received in FY 2007 Title IX for Digital I-TER.

B. PROGRAM CHANGE SUMMARY

Funding:	FY 2006	FY 2007	FY 2008	FY 2009
Previous President's Budget:	94.928	71.612	66.503	67.900
Current BES:	92.494	98.324	100.284	108.840
Total Adjustments	-2.434	26.712	33.781	40.940
Summary of Adjustments				
Congressional Reductions	-0.103			
Congressional Rescissions				
Congressional Undistributed Reductions	-2.085	-0.338		
Congressional Increases		27.050		
Economic Assumptions	0.000		0.326	1.543
Miscellaneous Adjustments	-0.246		33.455	39.397
Subtotal	-2.434	26.712	33.781	40.940

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: February 2007
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7	R-1 ITEM NOMENCLATURE 0205633N, AVIATION IMPROVEMENTS	

Schedule: Project 0601 -Acquisition, testing and production milestones adjusted for TETI program. The milestones were shifted to the right by approximately two quarters. After the early planning meetings for the TETI program, the original schedule was determined to unrealistic. The schedule change will allow the program to be executed much more effectively, including early obligation and expenditure of the program RDT&E funds. Milestone A was mistakenly included on the FY06/07 President's budget, and has been eliminated. As TETI is a spinoff of two other engine test system programs (JETI and SETI), there is no need to go through a Milestone A.

Due to the anticipated complexity of the NGMH, and the potential for the production contract award going to a different contractor than the original developer (Foster Miller Corporation), additional time was incorporated into the schedule to require the production contractor to build and successfully performance test several LRIP units before Full Rate Production (FRP) is initiated. This additional schedule time lowers risk to the program and postpones the FRP by one quarter.

Project 1041 schedule changes due to maturation of several programs and several new start efforts.

Technical: Not Applicable

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EXHIBIT R-2a, RDT&E Project Justification						DATE:				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME				
RDT&E,N / BA-7			0205633N, AVIATION IMPROVEMENTS			0601 A/C HANDLING & SERVICES EQ				
RDT&E Articles Qty										
COST (\$ in Millions)			FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
0601 COMMON GROUND EQUIPMENT			1.676	3.039	2.973	3.267	3.344	3.417	3.480	3.544
RDT&E Articles Qty			2	2	2	3	3	3	3	3

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Common Ground Equipment is a Naval Aviation project to apply new technology to common support equipment necessary to support multiple systems/aircraft within the Navy. The common support equipment items developed with this budget are briefed to the Air Force, Army and Coast Guard for possible use in joint procurement in the production phase.

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

Next Generation Munitions Handler (NGMH)	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	1.060	1.400	1.423	.507
RDT&E Articles Qty	1	1	1	1

R&D program to develop robotic weapons loader for both ship and shore with primary focus on targeting future weapons and aircraft. Plan is to support CVNX initiatives and to back-fit current CVs and amphibious ships. Utilize technology features developed under NGMH program. One Lab prototype will upload/download munitions in support of sea-based aviation, specifically the CVN-21 environment. It will be a self-powered diesel/electric unit with human amplification technology. Newly developed high-torque electric actuator/motors will provide the robotics. Variable geometry lonator wheels will provide the mobility for the vehicle. Self-diagnostics for maintenance analysis will be included for the design.

Turboprop Engine Test Instrumentation (TETI)	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	.616	1.639	1.550	2.402
RDT&E Articles Qty	1	1	1	1

The Turboprop Engine Test Instrumentation (TETI) program objective is to provide an integrated computer based measurement and automation system for Intermediate Maintenance level testing of Navy/Marine Turboprop engines. The acquisition approach is to develop, acquire, validate, deploy and support production configurations of TETI and Test Program Sets (TPS), utilizing the existing Jet Engine Test Initiative (JETI) technology, and integrate this capability into existing land based engine test systems. This enhanced capability will allow for full performance engine testing of the T56 Series Turboprop engines. An ECP will be developed to upgrade the existing engine test systems.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2007
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205633N, AVIATION IMPROVEMENTS	PROJECT NUMBER AND NAME 0601 A/C HANDLING & SERVICES EQ

Shipboard Firefighting Vehicle:	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost				.358
RDT&E Articles Qty				1

The Shipboard Firefighting Vehicle program objective is to provide a safe reliable and maintainable way to support air capable ships with flight deck fire suppression during flight operations. The acquisition approach is to develop, acquire, validate, deply and support production utilizing the lessons learned from the current firefighting vehicle and new emerging technology. This will enable us to integrate this capability into a new firefighting vehicle, which will be fully capable to support the current and future flight deck fire suppression mission.

C. OTHER PROGRAM FUNDING SUMMARY:	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Complete	Total Cost
APN 070500 Ground Support Equipment	191.352	168.204	169.100	160.592	163.486	164.486	153.514	152.636		1,323.370
Related RDT&E: Not Applicable										

D. ACQUISITION STRATEGY:

This is a non-ACAT program. Field activities propose tentative RDT&E projects. Internal panel merits and selects projects. Field activities develop projects and submit results. Operational Advisory Group (OAG) process selects projects to transition to procurement.

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2007		
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDT&E,N / BA-7		0205633N, AVIATION IMPROVEMENTS				0601 A/C HANDLING & SERVICES EQ						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Primary Hdw Development-NGMH	C-CPFF	FOSTER-MILLER, INC, WALTHAM, MA	5.323	1.150	3/31/2007	1.172	3/31/2008	.250	3/31/2009		7.895	7.895
Primary Hdw Development-TETI	C-CPFF	TBD		1.300	3/31/2007	1.200	3/31/2008	2.018	3/31/2009		4.518	4.518
Primary Hdw Development-TETI	VARIOUS	VARIOUS	.566								.566	
Systems Eng-SFV	WX	NAWCAD, LAKEHURST NJ						.358		.691	1.049	
Systems Eng-TETI	WX	NAWCAD, LAKEHURST NJ		.339	3/31/2007	.350	1/31/2008	.384	1/31/2009		1.073	
SUBTOTAL PRODUCT DEVELOPMENT			5.889	2.789		2.722		3.010		.691	15.101	

Remarks:

SUPPORT												
Develop Support Equip-NGMH	WX	VARIOUS	7.343	.250	VARIOUS	.251	VARIOUS	.257	VARIOUS		8.101	
Studies & Analysis-TETI	C-CPFF	UNIVE TECH RES SERV CHERRY HILL, NJ	.050								.050	.050
SUBTOTAL SUPPORT			7.393	.250		.251		.257			8.151	

Remarks:

TEST & EVALUATION												
SUBTOTAL TEST & EVALUATION												

Remarks:

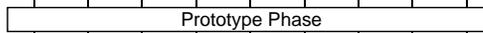
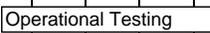
MANAGEMENT												
SUBTOTAL MANAGEMENT												

Remarks:

Total Cost			13.282	3.039		2.973		3.267		.691	23.252	
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Remarks:

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE:								
APPROPRIATION/BUDGET ACTIVITY																								PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME				
RDT&E,N / BA-7																								0205633N, AVIATION IMPROVEMENTS				0601 A/C HANDLING & SERVICES EQ				
Fiscal Year	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	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
<b>Acquisition Milestones</b>																																
TETI																																
MS B																																
																																
<b>MS C</b>																																
																																
<b>FRP DECISION</b>																																
																																
Prototype Phase																																
																																
Prototype Phase																																
Radar System Development																																
EDM Radar Delivery																																
Software 1XXSW Delivery 2XXSW Delivery																																
<b>Test &amp; Evaluation Milestones</b>																																
TETI																																
Development Test																																
																																
Operational Test																																
																																
Operational Testing																																
<b>Production Milestones</b>																																
TETI																																
FRP																																
																																
FRP Start																																
Deliveries																																

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EXHIBIT R4, Schedule Profile																							DATE: February 2007									
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7								PROGRAM ELEMENT NUMBER AND NAME 0205633N, AVIATION IMPROVEMENTS								PROJECT NUMBER AND NAME 0601 A/C HANDLING & SERVICES EQ																
Fiscal Year	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	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
<b>Acquisition Milestones</b> NGMH						MS B								MS C								FRP DECISION										
Prototype Phase	Prototype Phase																															
Radar System Development																																
EDM Radar Delivery																																
Software 1XXSW Delivery 2XXSW Delivery																																
<b>Test &amp; Evaluation Milestones</b> NGMH																																
Development Test	Developmental Testing																															
Operational Test									Operational Testing																							
<b>Production Milestones</b> NGMH																																
FRP FY 10																																
Deliveries NGMH																																



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Exhibit R-4a, Schedule Detail						DATE: February 2007		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
RDT&E,N / BA-7	0205633N, AVIATION IMPROVEMENTS				0601 A/C HANDLING & SERVICES EQ			
Schedule Profile	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
<b>Schedule Profile - IETI</b>								
Prototype Phase		2Q-4Q	1Q-4Q	1Q-3Q				
Milestone B		2Q						
Developmental Testing		3Q-4Q	1Q-3Q					
Milestone C (MS C)				3Q				
Operational Testing			3Q-4Q	1Q-3Q				
Full Rate Production Decision					1Q			
Full Rate Production Start					2Q			
<b>Schedule Profile - NGMH</b>								
Prototype Phase	1Q-4Q	1Q						
Milestone B		2Q						
Developmental Testing	1Q-4Q	1Q-3Q						
Milestone C (MS C)				2Q				
Operational Testing		2Q-4Q	1Q-4Q	1Q				
Start Low-Rate Initial Production I (LRIP I)				1Q				
Low-Rate Initial Production I Delivery					1Q			
Full Rate Production Decision					3Q			
Full Rate Production Start					3Q			
<b>Schedule Profile - SFV</b>								
Prototype Phase				1Q-4Q	1Q-4Q	1Q-4Q		
Milestone B				1Q				
Developmental Testing					2Q-4Q	1Q-2Q		
Milestone C (MS C)							4Q	
Operational Testing					4Q	1Q-4Q	1Q-3Q	
Start Low-Rate Initial Production I (LRIP I)								1Q
Low-Rate Initial Production I Delivery								
Full Rate Production Decision								
Full Rate Production Start								4Q

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2007		
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0205633N, AVIATION IMPROVEMENTS			PROJECT NUMBER AND NAME 0852, CONSOLIDATION AUTO SPT SYS				
COST (\$ in Millions)		FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
0852 CONSOLIDATION AUTOM SPT SYS		7.655	6.854	6.815	7.016	7.206	7.386	7.524	7.665
RDT&E Articles Qty		3	3	2	2	2	2	2	2

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Consolidated Automated Support System (CASS) project designs and develops modular automated test equipment with computer-assisted, multi-function test capability, standardized hardware, and standard software elements. CASS responds to Fleet Commanders' expressed requirements to correct serious deficiencies in existing automatic test equipment. Program objectives are: (1) increase material readiness; (2) reduce life cycle costs; (3) improve tester sustainability at depot and intermediate maintenance levels; (4) reduce proliferation of unique test equipment, and (5) provide test capability for existing and emerging avionics/electronics systems.

Technologies being developed include synthetic instruments, new Advanced Targeting Forward Looking Infrared (ATFLIR) electro-optics capability, multi-analog test capability to enable functional testing, and CASS station modernization elements.

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

CASS Station Upgrades	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	.026	.181	.200	.200
RDT&E Articles Qty				
	1	1	1	1

CASS Station Upgrades

Provides technologies for upgrading CASS station test capability to test emerging weapon system requirements. Includes development of new test capability and extending existing test range accuracies in the time and frequency domains to support low-frequency analog/digital, electro-optic, and radio frequency (RF) systems.

Electro-Optic Capability	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	2.175	1.200		
RDT&E Articles Qty	1	1		

Develops a downsized electro-optic support system to enable Reconfigurable Transportable CASS (RTCASS) to provide support for Marine Air FLIR and LASER Targeting systems.

CASS Modernization Development	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	5.454	5.473	6.615	6.816
RDT&E Articles Qty	1	1	1	1

Develops and integrates the technologies that will comprise the Modernization Program for the early lots of CASS stations which will be modernized and updated to current testing technologies while maintaining full compatibility with the legacy test program sets. Technologies include: downsized and scalable packaging techniques, multi-lingal runtime capability, interoperability framework and architectures, diagnostics data handling, virtual/synthetic/next-generation instrument concepts and the Agile Rapid Global Combat Support (ARGCS) Advanced Concept Technologies. (ACTD).

C. OTHER PROGRAM FUNDING SUMMARY:	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Complete	Total Cost
APN 070500 CASS	74.978	79.400	82.248	84.223	86.100	87.890	105.564	111.176		711.579
Related RDT&E: Not Applicable										

D. ACQUISITION STRATEGY:

Formal test technology reviews with industry are conducted annually (cooperative Joint Services initiative) to define maturity of needed technologies. Further studies are conducted as needed. Procurement strategy is determined by market survey and cooperative opportunities.

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2007		
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7		PROGRAM ELEMENT 0205633N, AVIATION IMPROVEMENTS				PROJECT NUMBER AND NAME 0852, CONSOLIDATION AUTOM SPT SYS						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Primary Hdw Development CASS EO	C-CPFF	THE BOEING COMPANY, SAINT LOUIS, MO	2.175	1.200	11/4/2006						3.375	3.375
Primary Hdw Development CASS EO	C-CPFF	MCDONNELL DOUGLAS CORP, SAINT LOUIS, MO	2.617								2.617	2.617
Primary Hdw Development CASS Mod	C-CPFF	NORTHROP GRUMMAN SYS CORP, SYKESVILLE, MD		1.874	3/31/2007						1.874	1.874
Primary Hdw Development CASS Mod	TBD	TBD		1.378	3/31/2007	5.213	3/31/2008	5.409	3/31/2009	20.729	32.729	
Primary Hdw Development CASS Mod	C-CPFF	VARIOUS	6.112								6.112	6.112
Primary Hdw Development CASS Upgrades	C-CPFF	VARIOUS	1.354								1.354	1.354
Primary Hdw Development CASS Upgrades	C-CPFF	TBD		.181	3/31/2007	.200	3/31/2008	.200	3/31/2009	1.200	1.781	1.781
SUBTOTAL PRODUCT DEVELOPMENT			12.258	4.633		5.413		5.609		21.929	49.842	

Remarks:

SUPPORT												
Develop Support Equip CASS Mod	WX	TBD	3.487	1.920	1/31/2007	1.100	1/31/2008	1.100	1/31/2009	6.460	14.067	
Develop Support Equip CASS Mod	WX	VARIOUS	2.556								2.556	
Develop Support Equip CASS Upgrad	WX	VARIOUS	2.449								2.449	
Develop Support Equip CASS Upgrad	VARIOUS	TBD	.822								.822	
SUBTOTAL SUPPORT			9.314	1.920		1.100		1.100		6.460	19.894	

Remarks:

TEST & EVALUATION												
SUBTOTAL TEST & EVALUATION												

Remarks:

MANAGEMENT												
Travel CASS Mod	TO	NAVAIR, PAXTUXENT RIVER MD	.686	.275	VARIOUS	.276	VARIOUS	.281	VARIOUS	1.100	2.618	
Travel CASS Mod (NATEC)	TO	NAV AIR TEC EN SV CMD, SAN DIEGO CA	.073								.073	
Travel CASS Mod (NATEC)	TO	NAVICP, PHILADELPHIA PA		.026	1/31/2007	.026	1/31/2008	.026	1/31/2009	.104	.182	
SUBTOTAL MANAGEMENT			.759	.301		.302		.307		1.204	2.873	

Remarks:

Total Cost			22.330	6.854		6.815		7.016		29.593	72.608	.000
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APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0205633N, AVIATION IMPROVEMENTS			PROJECT NUMBER AND NAME 1041, ACFT EQ REL/MAINT PROG				
COST (\$ in Millions)		FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
1041 ACFT EQ REL/MAINT PROG		2.996	2.986	2.247	2.789	2.821	2.874	2.923	2.973
RDT&E Articles Qty									

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: AERMIP is the only Navy program which provides Research, Development, Test & Evaluation (RDT&E) engineering support specifically for in-service, out-of-production aircraft equipment. AERMIP increases readiness through Reliability and Maintainability (R&M) and safety improvements to existing systems and equipment installed in Naval aircraft. It also provides a transition vehicle to deploy Total Ownership Cost (TOC) reduction initiatives through flight-test support and Fleet Test & Evaluation. It meets affordable readiness objectives by providing a cost-effective solution to obsolescence problems encountered when service lives are extended. AERMIP promotes commonality and standardization across aircraft platform lines and among the services through extension of application and use of non-developmental items. AERMIP also decreases life cycle costs through reduced operational and support costs. AERMIP facilitates the Operational, Safety and Improvement Program by applying proven low-risk solutions to current fleet problems. AERMIP also funds high priority flight testing which is not associated with any acquisition or development program under the Flight Test General (FTG) task.

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

Avionics and Wiring	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	1.620	1.596	.900	1.013
RDT&E Articles Qty				

AVIONICS AND WIRING (A)

Validate and transition Office of Naval Research (ONR) funded Smart Wire technology by conducting full aircraft flight test. Verify and validate a replacement Advanced Data Collections System that remotely downloads memory unit information for the AN/ASH-37(v) Structural Data Recording Set (SDRS). Test and perform the required changes to validate the ASW-27 as a replacement to the ASW-25. Perform the required testing to validate that the miniature version Arc Fault Circuit Breaker designed for fighter/attack aircraft and helicopters will work through system level Electro Magnetic Compatibility (EMC) and lighting events. Advance the Processor Maintainability efforts beyond the initial prototype stage to validate that accuracy of the developed common processes to ensure that reliability and maintainability issues caused by obsolescence components are identified and solutions options developed before the issues become critical. Opportunities and issues arise yearly that demand immediate attention to provide significant benefit or to avert an unanticipated problem. AERMIP actively pursues these issues and opportunities and responds quickly to implement a solution. Products are a qualified material or piece of equipment and the procedures/process required for its implementation. Pursue next generation wiring diagnosis and prognostics methods and prove the applicability to Naval aviation. Address avionics related reliability issues impacting multiple aircraft platforms.



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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2007		
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7		PROGRAM ELEMENT 0205633N, AVIATION IMPROVEMENTS				PROJECT NUMBER AND NAME 1041, ACFT EQ REL/MAINT PROG						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Systems Engineering	WX	NAWCAD, PATUXENT RIVER MD	1.165	1.377	11/1/2006	1.347	11/1/2007	1.776	11/1/2008	Continuing	Continuing	
Systems Engineering	WX	NAWCAD, PATUXENT RIVER MD	.989	1.229	11/1/2006	.640	11/1/2007	.853	11/1/2008	Continuing	Continuing	
Systems Engineering	SSFFP	RAYTHEON TECH SVCS, INDIANAPOLIS,IN	.300	.250	1/1/2007	.250	1/1/2008	.150	1/1/2009		.950	.950
Systems Engineering	SSFFP	EMA ASSOCIATES, INC LEXINGTON PARK MD	.200								.200	.200
SUBTOTAL PRODUCT DEVELOPMENT			2.654	2.856		2.237		2.779		Continuing	Continuing	

Remarks:

SUPPORT												
Studies & Analysis	WX	NADEP, SAN DIEGO CA	.193								.193	
Studies & Analysis	WX	NAWCAD, PATUXENT RIVER MD	12.171								12.171	
SUBTOTAL SUPPORT			12.364								12.364	

Remarks:

TEST & EVALUATION												
SUBTOTAL TEST & EVALUATION												

Remarks:

MANAGEMENT												
Contractor Eng Sup - Direct	SSFFP	VARIOUS	1.859	.120	VARIOUS						1.979	1.979
Program Management Support	WX	NAWCAD, PATUXENT RIVER MD	.295								.295	
Travel	WX	NAWCAD, PATUXENT RIVER MD	.040	.010	11/30/2006	.010	11/30/2007	.010	11/30/2008	.040	.110	
SUBTOTAL MANAGEMENT			2.194	.130		.010		.010		.040	2.384	

Remarks:

Total Cost			17.212	2.986		2.247		2.789		Continuing	Continuing	
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Remarks:

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																				DATE:												
APPROPRIATION/BUDGET ACTIVITY																				PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME								
RDT&E,N / BA-7																				0205633N, AVIATION IMPROVEMENTS				1041, ACFT EQ REL/MAINT PROG								
Fiscal Year	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	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
<b>Avionics and Wiring:</b>																																
Smart Wire																																
Arc Fault Circuit Breaker																																
AN/ASH-37(V) Structural Data Recording Set (SDRS)																																
Processor Maintainability Program																																
ASW-25 Replacement																																
Investigate High Value Return on Investment																																
Avionics Reliability Enhancement																																
Wiring Diagnosits and Prognostics																																
<b>Air Vehicle:</b>																																
Thermal Barrier Coating Improvement																																
Improved Firewall Materials																																
Advanced Non-Chrome Primers																																
Advanced Performance Topcoat																																
Imbedded Fire Bottle Condition Sensor																																
EMI Sealants and Coatings																																
Improved Corrosion Preventative Compounds																																
Investigate High Value Return on Investment																																
Corrosion Prevention Control																																
Advanced methods of Structural Repair																																
Subsystem improvement initiatives																																
<b>Production Milestones</b>																																
<b>Deliveries</b>																																



EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2007			
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7		PROGRAM ELEMENT NUMBER AND NAME 0205633N, AVIATION IMPROVEMENTS			PROJECT NUMBER AND NAME 1355, A/C ENG COMP IMP (CIP)				
COST (\$ in Millions)		FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
1355 A/C ENG COMP IMP (CIP)		65.823	58.458	57.616	60.921	60.054	61.134	61.477	62.561
RDT&E Articles Qty									

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Aircraft Engine Component Improvement Program (CIP) provides the only source of critical design and development engineering support to resolve safety, reliability and maintainability deficiencies of in-service Navy aircraft propulsion systems. The highest priority issues CIP addresses concern safety-of-flight deficiencies which account for approximately 80% of CIP efforts. The program also corrects service-revealed deficiencies, improves Operational Readiness (OR) and Reliability and Maintainability (R&M), and reduces platform Life Cycle Cost (LCC). Budgets are allocated across platform-specific teams and multi-platform product support teams based upon long term strategies to achieve safety and affordable readiness goals; the R-3 exhibit details annual portions of those long-term plans. CIP tasks have reduced the rate of in-flight aborts, safety incidents, non-mission capable rates, scheduled and unscheduled engine removals, maintenance work hours, and overall cost of ownership. This is accomplished through the maintenance and validation of specification performance, testing to qualify engineering changes, verifying life limits, and improving the inherent reliability of the propulsion system as an integral part of Reliability Centered Maintenance (RCM) initiatives. Historically, the missions, tactics, and environmental exposure of military aircraft systems change to meet new threats or operational demands, and often result in unforeseen problems, which if not corrected, can cause critical safety/readiness degradation, such as those experienced during DESERT SHIELD/DESERT STORM operations due to sand erosion. In addition, new problems arise through actual use during deployment of the aircraft. Development programs, while geared to resolve as many problems as possible before deployment, cannot duplicate actual operations or account for the vast array of environmental and usage variables, particularly when aircraft missions vary from those the aircraft was designed to perform. Therefore, it has been found that CIP can provide an immediate engineering response to these flight-critical problems and accelerated engine testing can avoid potential problems. CIP starts after development and Navy acceptance of the first production article and addresses usage and life problems not covered by warranties. CIP addresses engines, transmissions, propellers, starters, auxiliary power units, electrical generating systems, and fuel and lubricant systems. CIP efforts continue over the system's life, gradually decreasing to a minimum level sufficient to maintain the reliability, and decrease the operating costs, of older inventory. CIP is a highly leveraged and cooperative tri-service program with Foreign Military Sales participation.

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

P3, E2, C130 (T56)	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	9.000	8.462	7.762	6.500
RDT&E Articles Qty				

P3, E2, C130,(T56)

Implement the Engine Monitory System version 7.0 upgrade. Maintain safety margins by investigating turbine coatings and develop new designs, propeller integration efforts with potential propeller designs, perform engine hot section corrosion and fatigue analysis, and bearing improvements. Analysis of redesign for first stage turbine blades on T56-A427 engines. Qualification and verification testing of redesigned first stage turbine blades. Resolve service revealed problem. Work on resolving fuel nozzle choking issue. Resolve design problems in the areas of safety coupling, compressor leakage, generator problems, and electrical wiring problems. Mission updates and life analysis of critical components.

E2/C2/C130 (Props)	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	.452	.441	.441	.500
RDT&E Articles Qty				

E2/C2/C130 (Props)

Incorporate improved blade heaters. Develop improved propeller control system.

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EXHIBIT R-2a, RDT&E Project Justification

DATE:

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APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205633N, AVIATION IMPROVEMENTS	PROJECT NUMBER AND NAME 1355, A/C ENG COMP IMP (CIP)
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Mature Aircraft (J52)	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	5.693	6.919	5.999	5.000
RDT&E Articles Qty				

Mature Aircraft (J52)

Address the top readiness degraders and AVDLR costs; implement efforts on the J52 engine (EA-6B) ASMET test, perform annual maintenance awareness brief and annual P-408A major engine inspection program. Study and implement solutions to aging aircraft issues and future obsolescence problems. Redesign of diffuser case for increased life. Design and analysis efforts on 4.5 bearing problem on J52 engine (EA-6B). Efforts on life analysis and mission verification for critical components. Evaluate new coatings and seals for turbine areas. Begin ASMET of Pratt Wittney Associates.

Mature Aircraft (J85)	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	.831	.694	.744	.900
RDT&E Articles Qty				

Mature Aircraft (J85)

Address the top readiness degraders and AVDLR costs; implement efforts on the J85 engine (F-5) ASMET test, perform annual maintenance awareness brief and annual P-408A major engine inspection program. Study and implement solutions to aging aircraft issues and future obsolescence problems.

H2/H60 (T700)	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	4.308	4.205	3.857	5.000
RDT&E Articles Qty				

H2/H60 (T700)

Advanced Helicopter Transmission Lubricant Program, extended transmission component lives, increased readiness by reducing corrosion, Mission Profile Data Collection and Dynamic Component Life Limit efforts. Time on wing and Mean Time Between Removals (MTBR) cost drivers initiatives including compressor durability, Titanium Nitrates (TiN) coating and three-stage turbine. Efforts in the area of engine power loss, secondary power and wiring issues.

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EXHIBIT R-2a, RDT&E Project Justification

DATE:  
February 2007

APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205633N, AVIATION IMPROVEMENTS	PROJECT NUMBER AND NAME 1355, A/C ENG COMP IMP (CIP)
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UH1N (T400)	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	.500	.615	.230	.300
RDT&E Articles Qty				

UH1N (T400)  
Address top safety concerns as ranked by the OAG and System Safety Working Group, continue to update Navy maintenance manuals, continue to improve time-between-overhaul and reduced impact of high-time parts; T400 Improved Compressor Turbine Stub Shaft, T400 Improved Gas Generator Case Diffuser Inlet, T400 Improved Compressor Coating, T400 Life Management, Study T400 Parts Obsolescence.

AV-8B (F402)	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	3.988	3.892	3.570	4.500
RDT&E Articles Qty				

AV-8B (F402)  
Address top readiness degraders and AVDLR costs; safety of flight issues, engine removal and mission failure drivers, assess life management program issues for engine components. Project included but not be limited to: ASMET testing, support of a Fleet Leader Program, Analytical Condition Insepection (ACI), Engine Life Management Program (ELMP) execution and design fixes for any service revealed deficiencies. LPC 1 vane cracking problems and FMU mod problems. Analysis of ASMET engine test.

H-53/H-46/H-3 (T58/T64)	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	13.871	9.068	8.318	9.200
RDT&E Articles Qty				

H-53/H-46/H-3 (T58/T64)  
Bleed valve redesign. Efforts on the top cause for engine removals; improve on wing times; addressed top safety concerns as ranked by the Operational Advisory Group (OAG); reliability-centered maintenance program; improve compressor blade retention design; and develop corrosion resistant bearing designs. Improve the mean time between engine removal based upon continued implementation of reliability center maintenance initiatives. Conduct life management analysis to resolve critical rotating component issues based upon engine structural integrity assessments and the master life management plan.

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EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2007

APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205633N, AVIATION IMPROVEMENTS	PROJECT NUMBER AND NAME 1355, A/C ENG COMP IMP (CIP)
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F-18 C/D/E/F (F414/F404)	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	14.924	12.398	14.764	15.894
RDT&E Articles Qty				

F-18 C/D/E/F (F414/F404)

Address top safety issues, readiness degraders, and AVDLR costs; safety of flight issues; engine removal and mission failure drivers; assess life management program issues for engine components. Analysis and redesign of fuel nozzles and control system to resolve sub idle flameout issues. Analysis of combustion linear to determine cause for durability problems. Analysis and redesign of components with service revealed deficiencies.

T-45 (F405)	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	4.003	2.768	2.289	2.100
RDT&E Articles Qty				

T-45 (F405)

Address top safety issues reported from fleet. Analysis and redesign components with service revealed deficiencies.

V-22 (T406)	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	.200	.200	.200	.300
RDT&E Articles Qty				

V-22 (T406)

Review safety ECP's and support incorporation safety requirements.

F-16 (F100)	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	.100	.100	.100	.100
RDT&E Articles Qty				

F-16 (F100)

Review safety ECP's and support incorporation safety requirements.

Multi-Platform Product Support Teams	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	7.953	8.696	9.342	10.627
RDT&E Articles Qty				

Multi-Platform Product Support Teams

Projects designed to provide common support to multiple platforms in the areas of improved drive systems, secondary power and mechanical systems; improved tools for performance analysis, modeling and simulation, diagnostics, engine reliability assessment, and structural integrity; improve products and processes for fuels, lubricants, and refueling equipment; improve blade and vane repair processes and life cycle support; and improve electrical system product support, wiring, and battery systems.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2007
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205633N, AVIATION IMPROVEMENTS	PROJECT NUMBER AND NAME 1355, A/C ENG COMP IMP (CIP)

C. OTHER PROGRAM FUNDING SUMMARY:

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Complete	Total Cost
Not Applicable										

D. ACQUISITION STRATEGY: Not Applicable

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2007		
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDT&E,N / BA-7		0205633N, AVIATION IMPROVEMENTS				1355, A/C ENG COMP IMP (CIP)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Systems Eng F110 Engine Program	SS-CPAF	GE - OHIO	17.992								17.992	17.992
Systems Eng F402 Engine Program	VARIOUS	NAWCAD, PATUXENT RIVER MD	2.778	1.365	12/1/2006	1.253	12/1/2007	1.580	12/1/2008		6.976	
Systems Eng F402 Engine Program	SS-CPFF	ROLLS ROYCE - UK	38.240	2.527	12/1/2006	2.317	12/1/2007	2.921	12/1/2008		46.005	46.005
Systems Eng T58/T64 Engine Program	SS-CPFF	GE - MASS	50.484	6.350	10/1/2006	5.823	10/1/2007	6.440	10/1/2008		69.096	69.096
Systems Eng T58/T64 Engine Program	VARIOUS	NAWCAD, PATUXENT RIVER MD	9.949	2.718	1/1/2007	2.495	1/1/2008	2.760	1/1/2009		17.923	
Systems Eng J52 Engine Program	SS-CPFF	P & W - FLORIDA	23.628	4.777	10/1/2006	4.031	10/1/2007	3.450	10/1/2008		35.886	35.886
Systems Eng J52 Engine Program	VARIOUS	NAWCAD, PATUXENT RIVER MD	3.056	2.142	12/1/2006	1.968	12/1/2007	1.550	12/1/2008		8.716	
Systems Eng T56 Engine Program	SS-CPFF	ROLLS ROYCE - IN	20.494	3.091	2/1/2007	2.833	2/1/2008	2.372	2/1/2009		28.790	28.790
Systems Eng T56 Engine Program	VARIOUS	NAWCAD, PATUXENT RIVER MD	8.210	5.371	2/1/2007	4.929	2/1/2008	4.127	2/1/2009		22.637	
Systems Eng F405 Engine Program	SS-CPFF	ROLLS ROYCE - UK	17.125	2.768	12/1/2006	2.290	12/1/2007	2.100	12/1/2008		24.283	24.283
Systems Eng F414 /F404 Engine Program	SS-CPFF	GE - MASS	34.796	12.398	12/1/2006	12.552	12/1/2007	13.434	12/1/2008		73.180	73.180
Systems Eng F414 /F404 Engine Program	VARIOUS	VARIOUS				2.212	12/1/2007	2.460	12/1/2008		4.672	
Systems Eng T700 Engine Program	SS-CPFF	GE - MASS	13.096	2.490	1/1/2007	2.283	1/1/2008	2.960	1/1/2009		20.829	20.829
Systems Eng T700 Engine Program	VARIOUS	NAWCAD, PATUXENT RIVER MD	3.458	1.715	1/1/2007	1.574	1/1/2008	2.040	1/1/2009		8.786	
Systems Eng TF34 Engine Program	VARIOUS	NAWCAD, PATUXENT RIVER MD	.338								.338	
Systems Eng TF34 Engine Program	SSCPFF	G.E. OHIO	7.845								7.845	
Systems Eng T406 Engine Program	WX	NAWCAD, PATUXENT RIVER MD	1.200	.200	12/1/2006	.200	12/1/2007	.300	12/1/2008	Continuing	Continuing	
Systems Eng T400 Engine Program	SS-CPFF	P & W - FLORIDA	3.066	.615	12/1/2006	.230	12/1/2007	.300	12/1/2008		4.211	4.211
Systems Eng J85 Engine Program	SS-CPFF	GE -OK	2.657	.694	11/1/2006	.744	11/1/2007	.900	11/1/2008		4.995	4.995
Systems Eng F100 Engine Program	WX	NAWCAD, PATUXENT RIVER MD	.100	.100	10/1/2006	.100	10/1/2007	.100	10/1/2008	Continuing	Continuing	
Systems Eng Props Program	SS-CPFF	HAM SUNSTRAND - CON	8.312	.441	12/1/2006	.441	12/1/2007	.500	12/1/2008		9.694	9.694
Systems Eng Contracts under 1.0M	VARIOUS	VARIOUS	15.892	.109	10/1/2006	.113	10/1/2007	.116	10/1/2008	Continuing	Continuing	
Systems Eng Lab Fld Activity-1.0 or more	WX	NAWCAD, PATUXENT RIVER MD	145.719	7.112	10/1/2006	7.945	10/1/2007	9.218	10/1/2008	Continuing	Continuing	
Systems Eng Other In-House Spt	VARIOUS	VARIOUS	17.984	.316	10/1/2006	.316	10/1/2007	.316	10/1/2008	Continuing	Continuing	
GFE	MILSTRIP	DES/DLA	6.032	.663	10/1/2006	.451	10/1/2007	.451	10/1/2008	Continuing	Continuing	
Award Fees	SS-CPFF		1.305								1.305	1.305
SUBTOTAL PRODUCT DEVELOPMENT			453.757	57.962		57.100		60.395		Continuing	Continuing	

Totals may not add due to rounding.

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2007	
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7		PROGRAM ELEMENT 0205633N, AVIATION IMPROVEMENTS				PROJECT NUMBER AND NAME 1355, A/C ENG COMP IMP (CIP)					

SUPPORT												
Develop Support Equip	VARIOUS	VARIOUS	6.082	.310	VARIOUS	.310	VARIOUS	.310	VARIOUS	Continuing	Continuing	
SUBTOTAL SUPPORT			6.082	.310		.310		.310		Continuing	Continuing	

Remarks:

TEST & EVALUATION												
Dev Test & Eval	VARIOUS	VARIOUS	3.014	.053	VARIOUS	.053	VARIOUS	.053	VARIOUS	Continuing	Continuing	
SUBTOTAL TEST & EVALUATION			3.014	.053		.053		.053		Continuing	Continuing	

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MANAGEMENT												
Program Mgmt Sup	VARIOUS	VARIOUS	1.341	.053	VARIOUS	.053	VARIOUS	.053	VARIOUS	Continuing	Continuing	
Travel - Aquisition Planning	VARIOUS	NAVAIR, PATUXENT RIVER MD	.253	.080	VARIOUS	.100	VARIOUS	.110	VARIOUS	Continuing	Continuing	
SUBTOTAL MANAGEMENT			1.594	.133		.153		.163		Continuing	Continuing	

Total Cost			464.447	58.458		57.616		60.921		Continuing	Continuing	
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EXHIBIT R-2a, RDT&E Project Justification

DATE: February 2007

APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205633N, AVIATION IMPROVEMENTS	PROJECT NUMBER AND NAME 3189, DIGITAL I-TER						
COST (\$ in Millions)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
3189 DIGITAL I-TER		10.350	4.371	4.041	3.544			
RDT&E Articles Qty		6						

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: 3189 Digital ITER: This project develops an increased capability to the existing BRU-42 Improved Triple Ejector Rack (ITER) for the AV-8B, which adds a multiple carriage capability for Smart Weapons such as JDAM. Using existing ITERs as Government Furnished Material, the electronics tray will be replaced with a more capable electronics package allowing for smart weapons capability. This project plans to leverage an Air Force contract that upgrades their TER-9 system. When this development effort is complete, both the TER-9 and Digital ITER will have the same electronics capability. FY07-10 RDT&E funding will support full development of Digital ITER, including AV-8B integration and Test and Evaluation.

\*\$10.350M received in FY 2007 Title IX for Digital I-TER.

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

DIGITAL ITER KIT DEVELOPMENT	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost		4.491	2.494	1.589
RDT&E Articles Qty		6		

Continues Digital ITER kit development and prototype fabrication. Continues aircraft integration and Support Equipment re-design

DIGITAL ITER SOFTWARE DEVELOPMENT	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost		5.859	1.000	.600
RDT&E Articles Qty				

Continue Digital ITER Software Development.

DIGITAL ITER TESTING	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost			.877	1.852
RDT&E Articles Qty				

Begin Developmental Testing and Operational Test planning.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2007
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7	PROGRAM ELEMENT NUMBER AND NAME 0205633N, AVIATION IMPROVEMENTS	PROJECT NUMBER AND NAME 3189, DIGITAL I-TER

C. OTHER PROGRAM FUNDING SUMMARY:	FY 2006	FY2007	FY 2007	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Complete	Total Cost
072000 War Consumables (APN-7)										
Digital ITER (\$M)					7.400					7.400
Quantity					148					

D. ACQUISITION STRATEGY: Digital ITER development plans to leverage an Air Force contract that upgrades their TER-9 system. Integration and software development on the AV-8B will be done through NAWC AD Patuxent River, MD and NAWC WD China Lake, CA. A sole source, firm-fixed price contract is planned in FY10 to procure 148 racks.

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2007		
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7		PROGRAM ELEMENT 0205633N, AVIATION IMPROVEMENTS				PROJECT NUMBER AND NAME 3189, DIGITAL I-TER						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Aircraft Integration	WX	NAWCAD, PATUXENT RIVER MD		.320	Apr 2007	.205	Nov 2007	.250	Oct 2008	.190	.965	
Primary Hdw Development	MP	Wright Patterson AFB OH		2.800	May 2007	1.409	Nov 2007				4.209	
SUBTOTAL PRODUCT DEVELOPMENT				3.120		1.614		.250		.190	5.174	

Remarks: Target Value of contract is latest Program Manager estimate.

SUPPORT												
Develop Support Equip	WX	NAWCAD, LAKEHURST NJ		.326	Apr 2007	.110	Nov 2007	.150	Oct 2008	.380	.966	
Integrated Logistics Sup	WX	NAWCWD, CHINA LAKE CA		.225	Apr 2007	.230	Nov 2007	.635	Oct 2008	.444	1.534	
Software Development	WX	NAWCWD, CHINA LAKE CA		5.859	Apr 2007	1.000	Nov 2007	.600	Oct 2008	.550	8.009	
SUBTOTAL SUPPORT				6.410		1.340		1.385		1.374	10.509	

Remarks:

TEST & EVALUATION												
Dev Test & Eval	WX	NAWCWD, CHINA LAKE CA				.877	Nov 2007	1.167	Oct 2008	.100	2.144	
Oper Test & Eval	WX	NAWCWD, CHINA LAKE CA						.685	Dec 2008	1.309	1.994	
SUBTOTAL TEST & EVALUATION						.877		1.852		1.409	4.138	

Remarks: Target Value of contract is latest Program Manager estimate.

MANAGEMENT												
Contractor Eng Sup	TBD	TBD		.195	Apr 2007	.130	Dec 2007	.133	Dec 2008	.137	.595	
Government Eng Sup	WX	NAWCAD, PATUXENT RIVER MD		.300	Apr 2007	.260	Nov 2007	.267	Oct 2008	.273	1.100	
Program Mgmt Sup	WX	NAWCAD, PATUXENT RIVER MD		.125	Apr 2007	.060	Nov 2007	.062	Oct 2008	.062	.309	
Travel		NAVAIR, PAXTUXENT RIVER MD		.200	Apr 2007	.090	Nov 2007	.092	Oct 2008	.099	.481	
SUBTOTAL MANAGEMENT				.820		.540		.554		.571	2.485	

Remarks:

Total Cost				10.350		4.371		4.041		3.544	22.306	
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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2007			
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7			PROGRAM ELEMENT NUMBER AND NAME 0205633N, AVIATION IMPROVEMENTS			PROJECT NUMBER AND NAME 3190, MULTI-PURPOSE BOMB RACKS				
COST (\$ in Millions)			FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
3190 MULTI-PURPOSE BOMB RACKS					26.262	30.806	25.833			
RDT&E Articles Qty						12	8			

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: 3190 - Multi-Purpose Bomb Racks (MPBR): The MPBR will replace the BRU-41/42/33/55 and provide use for both tactical and training stores on one common rack. The MPBR will be integrated on the F/A-18A+/C/D and F/A-18E/F as part of this project.

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

MULTI-PURPOSE BOMB RACK DEVELOPMENT	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost			20.980	15.578
RDT&E Articles Qty				12

Vendor will begin MPBR kit design and development. Begin prototype development and fabrication. Begin support equipment re-design.

MULTI-PURPOSE BOMB RACK SOFTWARE DEV.	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost			3.286	7.272
RDT&E Articles Qty				

Begin software development and aircraft integration.

MULTI-PURPOSE BOMB RACK TESTING	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost			1.996	7.956
RDT&E Articles Qty				

Provide systems engineering support and begin Developmental Test and Evaluation.

C. OTHER PROGRAM FUNDING SUMMARY:	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Complete	Total Cost
072000 War Consumables (APN-7)										
Cost Code 73600 Multi-Purpose Bomb Racks (m)					10.800	32.400	34.200	35.100	144.986	257.486
Quantities					100	300	300	300		

D. ACQUISITION STRATEGY: MPBR will be developed through a competitively awarded Cost Type contract. Aircraft software and integration will be done at the F/A-18 Advanced Weapons Laboratory at NAWC WD China Lake and through a Cost Type contract with Boeing awarded through China Lake.

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2007		
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-7		PROGRAM ELEMENT 0205633N, AVIATION IMPROVEMENTS				PROJECT NUMBER AND NAME 3190, MULTI-PURPOSE BOMB RACKS						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Aircraft Integration	WX	NAWCAD, PATUXENT RIVER MD				.750	Nov 2007	2.060	Nov 2008	.650	3.460	
Primary Hdw Development	C/CPFF	TBD				16.784	Nov 2007	9.833	Nov 2008	1.792	28.409	28.409
Systems Eng	WX	NAWCAD, PATUXENT RIVER MD				2.300	Oct 2007	2.300	Oct 2008	1.700	6.300	
SUBTOTAL PRODUCT DEVELOPMENT						19.834		14.193		4.142	38.169	

Remarks: Target Value of contracts represents latest Program Manager estimates.

SUPPORT												
Develop Support Equip	WX	NAWCAD, LAKEHURST NJ				.100	Oct 2007	.250	Oct 2008	.400	.750	
Software Development	WX	NAWCWD, CHINA LAKE CA				3.286	Oct 2007	7.272	Oct 2008	6.572	17.130	
SUBTOTAL SUPPORT						3.386		7.522		6.972	17.880	

Remarks: Target Value of contracts represents latest Program Manager estimates.

TEST & EVALUATION												
Dev Test & Eval	WX	NAWCAD, PATUXENT RIVER MD				1.996	Oct 2007	7.956	Oct 2008	7.826	17.778	
Oper Test & Eval	WX	OPER T & E FOR CD 30, NORFOLK VA								4.943	4.943	
SUBTOTAL TEST & EVALUATION						1.996		7.956		12.769	22.721	

Remarks:

MANAGEMENT												
Contractor Eng Sup	TBD	TBD				.175	Dec 2007	.200	Dec 2008	.400	.775	
Government Eng Sup	WX	NAVAIR, PATUXENT RIVER MD				.200	Oct 2007	.260	Oct 2008	.400	.860	
Government Eng Sup	WX	NAVSEA, CRANE IN				.400	Oct 2007	.400	Oct 2008	.725	1.525	
Program Mgmt Sup	WX	NAVAIR, PATUXENT RIVER MD				.200	Oct 2007	.200	Oct 2008	.300	.700	
Travel		NAVAIR, PATUXENT RIVER MD				.071	Oct 2007	.075	Oct 2008	.125	.271	
SUBTOTAL MANAGEMENT						1.046		1.135		1.950	4.131	

Remarks:

Total Cost						26.262		30.806		25.833	82.901	
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EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>FEBRUARY 2007</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205633N, AVIATION IMPROVEMENTS</b>				PROJECT NUMBER AND NAME 9999, CONGRESSIONAL ADDS			
COST (\$ in Millions)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Project Cost	14.344	16.637						
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

CONGRESSIONAL ADDS

<b>CLASSIFICATION:</b>				
EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>FEBRUARY 2007</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205633N, AVIATION IMPROVEMENTS</b>	PROJECT NUMBER AND NAME <b>9999, CONGRESSIONAL ADDS</b>		
<b>B. Accomplishments/Planned Program</b>				
<b>9426C</b>	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	4.907			
RDT&E Articles Quantity				
<b>Automated Wire Analysis</b>				
Automated Wire Analysis- to incorporate new technology to increase the accuracy while decreasing the time required when performing wiring inspection.				
<b>9628C</b>	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.963			
RDT&E Articles Quantity				
<b>Smart Multi-functional Corrosion Inhibiting Coatings</b>				
Smart Multi-functional Corrosion Inhibiting Coatings - The Corrosion Inhibiting Coatings initiative is an effort to develop and test a conductive polymer coating for increased corrosion resistance.				
<b>9630C</b>	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.723			
RDT&E Articles Quantity				
<b>DMS Aviation Improvements</b>				
DMS Aviation Improvements - To support the Center for Defense Sustainment Technology, which will conduct studies and analysis support for Aging Aircraft issues.				

<b>CLASSIFICATION:</b>				
EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>FEBRUARY 2007</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA 7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205633N, AVIATION IMPROVEMENTS</b>	PROJECT NUMBER AND NAME <b>9999, CONGRESSIONAL ADDS</b>		
<b>B. Accomplishments/Planned Program</b>				
<b>9750 N</b>	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	1.296			
RDT&E Articles Quantity	1			
<b>F404/F414 Borescope Equipment Service Life Extension Program</b>				
Development of Next Generation Technology for the Inspection of Aircraft Engines, Diagnostics and Repair - Program objective is to develop next generation Common Video Borescope Set, to enhance the visual inspection of internal components of Navy/Marine aircraft primary and secondary power plants and airframes, for defects by improving survivability, reducing inventory, reducing maintenance cost, improving training and reliability, and maximizing commonality of the inspection equipment.				
<b>9751 N</b>	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	4.040			
RDT&E Articles Quantity				
<b>NAVAIR Depot Maintenance Operations Unique ID</b>				
NAVAIR Depot Maintenance Operations Unique ID - This effort is to evaluate and modify as required Automatic Identification Technology (AIT) for operation and application in the harsh environments of Naval Aviation Organic Depots. This system and business process improvements must be designed and deployed to integrate this required capability into Naval Aviation Depots.				
<b>9752 N</b>	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	1.922	2.491		
RDT&E Articles Quantity				
<b>Real-time Weight and Balance System</b>				
Realtime Weight and Balance System - This effort is to develop and qualify a real-time measurement weight and balance system for the C-130 to improve safety and speed of dispatch and to reduce costs associated with man-hours and delays.				

<b>CLASSIFICATION:</b>				
EXHIBIT R-2a, RDT&E Project Justification				DATE: <b>FEBRUARY 2007</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205633N, AVIATION IMPROVEMENTS</b>	PROJECT NUMBER AND NAME <b>9999, CONGRESSIONAL ADDS</b>		
<b>B. Accomplishments/Planned Program (Cont.)</b>				
<b>9856 N</b>	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.493			
RDT&E Articles Quantity				
<b>Advanced Very Lightweight Avionics System</b>				
Advanced very lightweight avionics system for airborne platforms - This effort is to study and evaluate advanced cooling technologies for integration into existing avionics systems.				
<b>9A76N</b>	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost		1.295		
RDT&E Articles Quantity				
<b>Advanced Avionics Miniaturization Program</b>				
Advance Avionics Miniaturization Program. This is a continuation of 9856: This effort is to study and evaluate advanced cooling technologies for integration into existing avionics systems.				
<b>9A77N</b>	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost		1.992		
RDT&E Articles Quantity				
<b>Age Exploration Model Extension</b>				
Age Exploration Model extension program is a continuation of congressional add 9109N: this effort is to develop an Age Exploration Model for Naval aircraft platforms. The model will use existing Naval aircraft data to establish connections between age and reliability, maintainability, and readiness and will provide the Navy with a valuable tool for understanding, predicting, and communicating impacts of decisions and for mitigating risks associated with these decisions.				

<b>CLASSIFICATION:</b>				
EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>FEBRUARY 2007</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205633N, AVIATION IMPROVEMENTS</b>	PROJECT NUMBER AND NAME <b>9999, CONGRESSIONAL ADDS</b>		
<b>B. Accomplishments/Planned Program (Cont.)</b>				
<b>9A78N</b>	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost		0.996		
RDT&E Articles Quantity				
<b>Aircraft Sustainment Technology Rapid Deployment</b>				
Aircraft Sustainment Technology Rapid Deployment Initiative: This effort is to transition existing technology to military aerospace applications thereby decreasing the turn around time for Naval aircraft. Targeted technology includes advanced Non Destructive Inspection technology that would allow rapid inspection and repair of helicopters in theater and advanced manufacturing and reverse engineering systems which would allow the navy to expedite manufacture of critical obsolete components.				
<b>9A79N</b>	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost		1.395		
RDT&E Articles Quantity				
<b>Arc Fault Circuit Breaker</b>				
Arc Fault Circuit Breaker with Arc Location System This effort is to demonstrate a wireless fault sensor to detect location of wire faults that result in the tripping of the arc fault circuit breaker.				
<b>9A80N</b>	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost		0.996		
RDT&E Articles Quantity				
<b>F/A 18 Avionics Ground Support System</b>				
This congressional add supports the F/A 18 Avionics Ground Support System.				

<b>CLASSIFICATION:</b>				
EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>FEBRUARY 2007</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205633N, AVIATION IMPROVEMENTS</b>	PROJECT NUMBER AND NAME <b>9999, CONGRESSIONAL ADDS</b>		
<b>B. Accomplishments/Planned Program (Cont.)</b>				
<b>9A81N</b>	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost		1.445		
RDT&E Articles Quantity				
<b>Low Maintenance Material Applications</b>				
Low Maintenance Material Applications This effort is to develop the processes, materials & technologies to reduce costs for composite parts manufacturing , and reduce failure of critical components operating in extreme conditions (combat, high heat, high corrosion).				
<b>9A82N</b>	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost		1.046		
RDT&E Articles Quantity				
<b>Nanocrystalline Diamond Coatings-Complex Curved</b>				
This congressional add supports the Nanocrystalline Diamond Coatings Complex Curved Improvement program.				
<b>9A83N</b>	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost		0.996		
RDT&E Articles Quantity				
<b>NAVAIR Obsolescence Management</b>				
NAVAIR Obsolescence Management and Tools. This is a continuation of 9630: To support the Center for Defense Sustainment Technology, which will conduct studie and analysis support for Aging Aircraft issues.				

<b>CLASSIFICATION:</b>				
EXHIBIT R-2a, RDT&E Project Justification				DATE: <b>FEBRUARY 2007</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA7</b>	PROGRAM ELEMENT NUMBER AND NAME <b>0205633N, AVIATION IMPROVEMENTS</b>	PROJECT NUMBER AND NAME <b>9999, CONGRESSIONAL ADDS</b>		
<b>B. Accomplishments/Planned Program (Cont.)</b>				
<b>9A84N</b>	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost		0.996		
RDT&E Articles Quantity				
<b>Rotor Blade Protection</b>				
The add supports the Joint Aeronautical Logistics Commanders (JALC) initiatives to develop an industry standard for sand and water erosion testing and the ability to model coating designs for desirable erosion properties. This program will provide the first standard for sand and water erosion testing, tools for numerical investigation of protective coatings and adhesives, and transition of repair and overhaul technology to the depots.				
<b>9A85N</b>	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost		1.046		
RDT&E Articles Quantity				
<b>Sacrificial Film Laminates-Navy Helicopter</b>				
The Sacrificial Film Laminated Navy Helicopter program is to prevent damage to helicopter windows caused by harsh environments. This condition is particularly severe during night operations. Incorporation of a tear away film on the windscreens would prevent the necessity to completely remove and replace them, downing the aircraft for the duration of the maintenance action.				
<b>9A86N</b>	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost		1.943		
RDT&E Articles Quantity				
<b>Wireless Sensors for Navy Aircraft</b>				
The purpose of the add is to perform full scale development and test of a prototype wireless strain sensor primarily for rotorcraft applications. This full scale testing supports a Joint Aeronautical Logistics Commanders (JALC) initiative to benchmark best Condition Based Maintenance (CBM) practices and transition a suite of sensors to airborne applications.				