EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2005	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7**					R-1 ITEM NOMENCLATURE 0205633N Aviation Improvements			
COST ($ in Millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	**67.410**	**78.164**	**81.546**	**70.276**	**70.713**	**72.117**	**72.395**	**74.105**
0601 Common Ground Equipment	**3.814**	**2.626**	**3.007**	**2.812**	**3.171**	**3.238**	**3.313**	**3.390**
0852 Consolidated Automated Support System	**5.268**	**5.406**	**6.776**	**6.356**	**7.182**	**7.364**	**7.553**	**7.744**
1041 A/C Equip Reliability Maintainablity Improv Pgm	**1.861**	**2.057**	**2.953**	**3.013**	**2.295**	**2.771**	**2.804**	**2.858**
1355 A/C Engine Comp Imp Prog	**47.523**	**51.962**	**68.810**	**58.095**	**58.065**	**58.744**	**58.725**	**60.113**
9109 Airfraft Exploration Model Development	**3.611**	**2.938**						
9426 Automated Wire Analysis	**2.900**	**4.259**						
9427 Digital Integrated Cockpit Display	**0.988**	**0.989**						
9428 NAVAIR Technology Commercialization	**1.445**							
9628 Corrision Inhibiting Coatings		**1.388**						
9629 Nano-Composite Hard Coat for Aviation Cano		**2.279**						
9630 Center for Defense Sustainment Technology		**0.990**						
9631 Devel.of Next Gen.Technology for the Inspection of A/C Engines, Diagnostics and Repair		**3.270**						

(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 9109 - Aircraft Age Exploration Model for Naval Aircraft platforms. The model will use existing Naval Aircraft data to establish connections between age and reliabilty, maintainability, and readiness and will provide the Navy with a valuable tool for understanding, predicting, and communicating impacts of decisions to extend aircraft service lives and for mitigating risks associated with these decisions. This is a continuation of efforts initiatied in FY02 to add enhanced functionallity to include automatic identification of reliability degredation items and automatic tracking of actuals against model generated predictions. Project 9426 - Current practices have technicians perform electrical testing on aircraft using both manual and automated methods. Once a short or open is found using existing test equipment, the technician must then find the physical location of the fault, one wire at a time, using pin-to-pin tests with handheld multi-meters and visual inspection. This generally involves at least two individuals connecting leads to each end of a wire to be tested. This is a slow process and reactive in nature. New commercial technology that incorporates Standing Wave Reflectometry (SWR) can proactively identify all hard faults (e.g. shorts and opens) of wiring malfunctions from a single end wire test, verify system modifications, and localize aircraft wiring malfunctions to within inches. This capability does not exist in the U.S. Navy today. A single wiring analyzer can serially test up to 1,152 wires at a time and the system can be expanded to test up to a maximum of 128,000 test points. This effort is to develop, validate and qualify this capability for Naval Avaition applications.

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-7**	R-1 ITEM NOMENCLATURE 0205633N Aviation Improvements

Project 9427 - The TH-57 Helicopter is the Navy's only primary helicopter pilot training platform, and is expected to remain in that capacity until 2025. All Navy fleet helicopters will have digital cockpits by 2012. To remain viable as an effective training platform, which meets the training requirements of an all digital helicopter fleet, the TH-57 cockpit can best utilize a digital design to effect greater aircraft training utilization. Research and Development funds will be utilized to produce a product that keeps pace with the rapidly changing fleet helicopter pilot training requirements and provides increased hard landing/crash and exceedence warning system protection to aircrews. The following areas will be explored Requirement Analysis, Cost Estimation, Crew Systems/Human System Integration, Logistics Support Analysis, and Aircraft Integration.
Project 9428 - The NAVAIR Technology Commercialization Initiative is an effort to transition commercial technology for Naval Avaition Applications.
Project 9628 - The Corrosion Inhibiting Coatings initiative is an effort to develop and test a conductive polymer coating for increased corrosion resistance.
Project 9629 - The Nano-Composite Hard-Coat for Aircraft Canopies initiative is an effort to develop and test improved canopy coating materials.
Project 9630 - The Center for Defense Sustainment Technology initiative is an effort to support the Joint Council on Aging Aircraft (JCAA) National Strategy efforts in the Cost of Aging, obsolescence management and rotorcraft dynamic component technologies.
Project 9631 - Development of Next Generation Technology for the Inspection of Aircraft Engines, Diagnostics and Repair will lead to the development of a next generation Common Video Borescope Set to support the fleet maintenance requirement to inspect internal components of aircraft engines and airframes for defects. The goals of this effort are to address deficiencies in the current inspection equipment by improving survivability, reducing proliferation/inventory, reducing maintenance costs, improving training and reliabilty, providing an upgradeable design, and maximizing commonality of inspection between the Organizational and Intermediate levels of maintenance.

R-1 SHOPPING LIST - Item No. 182

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2005**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0205633N Aviation Improvements				PROJECT NUMBER AND NAME 0601 Common Ground Equipment			
COST ($ in Millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	**3.814**	**2.626**	**3.007**	**2.812**	**3.171**	**3.238**	**3.313**	**3.390**
RDT&E Articles Qty								

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 is briefed to the Air Force, Army and Coast Guard for possible use in joint procurement in the production phase.

The items procured with this budget are new technology items that are required to meet fleet aircraft requirements in both testing and loading of aircraft systems.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N Aviation Improvements	0601 Common Ground Equipment

B. Accomplishments/Planned Program

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	2.898	2.546	1.807	1.400
RDT&E Articles Quantity				

Next Generation Munitions Handler (NGMH) - 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.

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.550			
RDT&E Articles Quantity				

Shaft Engine Test Instrumentation (SETI) - Program objective is to provide an integrated computer based measurement and automation system for Intermediate Maintenance level testing of Navy/Marine Turbo shaft engines. The acquisition approach is to develop, acquire, validate, deploy and support production configurations of SETI and Test Program Sets (TPS), utilizing the existing Jet Engine Test Initiative (JETI) technology, and integrate this capability into existing land based (A/E372T-24) and (A/F37T-16) engine test systems. This enhanced capability will allow for full performance engine testing of the T58, T64, and T700 Turbo shaft engines. An ECP will be developed to upgrade the existing engine test systems.

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.080	1.200	1.412
RDT&E Articles Quantity				

Turboprop Engine Test Instrumentation (TETI) - 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.

R-1 SHOPPING LIST - Item No. 182

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N Aviation Improvements	0601 Common Ground Equipment

B. Accomplishments/Planned Program

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.366			
RDT&E Articles Quantity				

Issue 90001, Execution Realignment - Funds not received. Funds to be placed on the Foster Miller NGMH contract.

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

R-1 SHOPPING LIST - Item No. 182

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N Aviation Improvements	0601 Common Ground Equipment

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 04	FY 05	FY 06	FY 07
Previous President's Budget:	3.131	2.664	2.983	3.024
Current BES/President's Budget	3.814	2.626	3.007	2.812
Total Adjustments	0.683	-0.038	0.024	-0.212
Summary of Adjustments				
Congressional program reductions				
Congressional undistributed reductions		-0.037		
Congressional rescissions				
SBIR/STTR Transfer	-0.069			
Other Adjustments		-0.001	-0.004	-0.259
Economic Assumptions			0.028	0.047
Reprogrammings	0.752			
Congressional increases				
Subtotal	0.683	-0.038	0.024	-0.212

Schedule:

Acquisition, testing and production milestones added for TETI program.

Due to the anticipated complexity of the NMGH, 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 year.

Technical:

Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N Aviation Improvements	0601 Common Ground Equipment

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
APN 070500 Ground Support Equipment	194.455	216.782	193.508	186.338	181.829	172.102	176.063	180.106	Continuing	Continuing
Related RDT&E: Not Applicable										

E. 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.

R-1 SHOPPING LIST - Item No. 182

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2005**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0205633N Aviation Improvements			PROJECT NUMBER AND NAME 0601 Common Ground Equipment						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	Various	17.112	1.661	03/05	1.959	03/06	1.573	03/07	Continuing	Continuing	
Ancillary Hardware Development											0.000	
Aircraft Integration											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering	Various	Various	0.466	0.400	03/05	0.563	03/06	0.654	03/07	Continuing	Continuing	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			17.578	2.061		2.522		2.227		Continuing	Continuing	
Remarks:												
Development Support	Various	Various	6.151	0.030	12/04	0.030	12/05	0.030	12/06	Continuing	Continuing	
Software Development											0.000	
Integrated Logistics Support	Various	Various	0.060	0.060	12/04	0.060	12/05	0.060	12/06	Continuing	Continuing	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses	Various	Various	0.030	0.030	12/04	0.030	12/05	0.030	12/06	Continuing	Continuing	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			6.241	0.120		0.120		0.120		Continuing	Continuing	
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2005**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0205633N Aviation Improvements			PROJECT NUMBER AND NAME 0601 Common Ground Equipment						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
DT&E - SETI	Various	Various	1.084								1.084	
DT&E - NGMH	Various	Various	0.060	0.200	12/04	0.200	12/05	0.100	12/06	Continuing	Continuing	
DT&E - TETI	Various	Various		0.080	12/04			0.200	12/06	Continuing	Continuing	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			1.144	0.280		0.200		0.300		Continuing	Continuing	
Remarks:												
Contractor Engineering Support	Various	Various	0.025	0.025	12/04	0.025	12/05	0.025	12/06	Continuing	Continuing	
Government Engineering Support	Various	Various	0.060	0.050	12/04	0.050	12/05	0.050	12/06	Continuing	Continuing	
Program Management Support	Various	Various	0.075	0.075	12/04	0.075	12/05	0.075	12/06	Continuing	Continuing	
Travel	Various	Various	0.015	0.015	12/04	0.015	12/05	0.015	12/06	Continuing	Continuing	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.175	0.165		0.165		0.165		Continuing	Continuing	
Remarks:												
Total Cost			25.138	2.626		3.007		2.812		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 182

CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2005**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-7**

PROGRAM ELEMENT NUMBER AND NAME: 0205633N Aviation Improvements

PROJECT NUMBER AND NAME: 0601 Common Ground Equipment

Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	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 TETI						MS A △					MS B △										MS C △											
Prototype Phase																																
Radar System Development																																
EDM Radar Delivery																																
Software 1XXSW Delivery 2XXSW Delivery																																
Test & Evaluation Milestones TETI Development Test													Developmental Testing																			
Operational Test																	Operational Testing															
Production Milestones TETI FRP FY 09																							FRP Start △									

R-1 SHOPPING LIST - Item No. 182

CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2005**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-7**

PROGRAM ELEMENT NUMBER AND NAME: 0205633N Aviation Improvements

PROJECT NUMBER AND NAME: 0601 Common Ground Equipment

Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	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 NGMH								MS B △									MS C △															
Prototype Phase	▭	▭	▭	▭	▭	▭																										
Radar System Development																																
EDM Radar Delivery																																
Software 1XXSW Delivery 2XXSW Delivery																																
Test & Evaluation Milestones NGMH							Developmental Testing																									
Development Test							▭	▭	▭	▭	▭																					
Operational Test													Operational Testing																			
													▭	▭	▭	▭																
Production Milestones NGMH																																
FRP FY 10																									FRP Start △							
Deliveries NGMH																				LRIP (3) △												

R-1 SHOPPING LIST - Item No. 182

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2005**		
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-7**	PROGRAM ELEMENT 0205633N Aviation Improvements				PROJECT NUMBER AND NAME 0601 Common Ground Equipment			
Schedule Profile - TETI	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Prototype Phase			4Q	1Q-4Q				
Milestone A		2Q						
Milestone B			3Q					
Developmental Testing				1Q-4Q				
Milestone C (MS C)								
Operational Testing								
Technical Evaluation (TECHEVAL)								
Full Rate Production Start								

R-1 SHOPPING LIST - Item No. 182

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2005**		
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-7**	PROGRAM ELEMENT 0205633N Aviation Improvements				PROJECT NUMBER AND NAME 0601 Common Ground Equipment			
Schedule Profile - NGMH	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Prototype Phase	1Q-4Q	1Q-2Q						
Milestone B		4Q						
Developmental Testing		3Q-4Q	1Q-4Q					
Milestone C (MS C)								
Operational Testing				1Q-4Q				
Start Low-Rate Initial Production I (LRIP I)								
Low-Rate Initial Production I Delivery (3)								
Full Rate Production Start								

R-1 SHOPPING LIST - Item No. 182

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2005**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0205633N Aviation Improvements				PROJECT NUMBER AND NAME 0852 Consolidated Automated Support System			
COST ($ in Millions)	FY 2004	FY 2005*	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	**5.268**	**5.406**	**6.776**	**6.356**	**7.182**	**7.364**	**7.553**	**7.744**
RDT&E Articles Qty								

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 ATFLIR electro-optics capability, multi-analog test capability to enable functional testing, and CASS station modernization elements.

* $1.2M was identified in prior years which could forward finance future year requirements and the corresponding adjustment was made in FY 2005.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N Aviation Improvements	0852 Consolidated Automated Support System

B. Accomplishments/Planned Program

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.400	1.000	2.222	2.317
RDT&E Articles Quantity				

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 domain. Specifically to support low-frequency analog/digital, electro-optic, and RF emerging weapon systems.

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	1.405	0.659		
RDT&E Articles Quantity				

Electro-Optic Capability
Develops a downsized electro-optic support system to enable RTCASS to provide support for Marine Air FLIR and LASER Targeting systems.

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	3.463	3.747	4.554	4.039
RDT&E Articles Quantity				

CASS Modernization Development
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 Technology Demonstration (ACTD).

R-1 SHOPPING LIST - Item No. 182

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N Aviation Improvements	0852 Consolidated Automated Support System

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2004	FY 2005	FY 2006	FY 2007
Previous President's Budget:	6.370	5.456	6.722	6.817
Current BES/President's Budget	5.268	5.406	6.776	6.356
Total Adjustments	-1.102	-0.050	0.054	-0.461
Summary of Adjustments				
Congressional program reductions				
Congressional undistributed reductions		-0.049		
Congressional rescissions				
SBIR/STTR Transfer	-0.107			
Other Adjustments		-0.001	-0.008	-0.586
Economic Assumptions			0.062	0.125
Reprogrammings	-0.995			
Congressional increases				
Subtotal	-1.102	-0.050	0.054	-0.461

Schedule:

Milestones added for FY04 4th Quarter award of ARGCS, to be followed by System Development and Testing.

Technical:

Not Applicable

R-1 SHOPPING LIST - Item No. 182

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N Aviation Improvements	0852 Consolidated Automated Support System

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
APN 070500 CASS	91.440	76.278	81.066	83.835	86.502	88.335	90.377	92.465	Continuing	Continuing

Related RDT&E:
Not Applicable

E. 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.

The ARGCS development contract has been awarded to Northrup Grummon. The contractor will design, develop and test the ARGCS solution. The contractor will provide program management, engineering, testing and other services to meet the objectives of the contract per the ARGCS Implementation Document. ARGCS includes the latest in Integrated Support Systems technology in order to establish a common, interoperable, and morphable system. ARGCS provides a rapidly reconfigurable Combat Support System (CSS) required to perform needed maintenance/test.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2005**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0205633N Aviation Improvements			PROJECT NUMBER AND NAME 0852 Consolidated Automated Support System						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware Development - SI	Various	Various	9.423								9.423	
Hardware Development - Upgrades	Various	Various	23.111	0.750	Various	1.624	Various	1.649	Various	Continuing	Continuing	
Hardware Development - EO	C/FFP	Various	2.400	0.600	Various						3.000	
Hardware Development - Modernizati	C/FFP	Various	2.070	2.797	Various	3.302	Various	2.836	Various	Continuing	Continuing	
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			37.004	4.147		4.926		4.485		Continuing	Continuing	
Remarks:												
Development Support - SI											0.000	
Development Support - Upgrades	Various	Various	0.250	0.250	Various	0.450	Various	0.469	Various	Continuing	Continuing	
Development Support - EO	C/FFP	Various	0.500	0.059	Various						0.559	
Development Support - Modernization	C/CPFF	Various	0.400	0.600	Various	1.050	Various	1.052	Various	Continuing	Continuing	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			1.150	0.909		1.500		1.521		Continuing	Continuing	
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2005**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0205633N Aviation Improvements				PROJECT NUMBER AND NAME 0852 Consolidated Automated Support System						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 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											0.000	
Program Management Support											0.000	
Travel	WX	NAWCAD, Patuxent River	0.974	0.350	Various	0.350	Various	0.350	Various	Continuing	Continuing	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.974	0.350		0.350		0.350		Continuing	Continuing	
Remarks:												
Total Cost			39.128	5.406		6.776		6.356		Continuing	Continuing	
Remarks:												

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																															DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**									PROGRAM ELEMENT NUMBER AND NAME 0205633N Aviation Improvements														PROJECT NUMBER AND NAME 0852 Consolidated Automated Support System											
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	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 ARGCS																																
Contract Award				▲																												
System Development					▬	▬	▬	▬	▬	▬	▬	▬																				
Testing													▬	▬	▬	▬	▬	▬	▬	▬												

R-1 SHOPPING LIST - Item No. 182

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2005**		
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-7**	PROGRAM ELEMENT 0205633N Aviation Improvements				PROJECT NUMBER AND NAME 0852 Consolidated Automated Support System			
Schedule Profile - ARGCS	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Contract Award	4Q							
System Development		1Q-4Q	1Q-4Q	1Q				
Testing				1Q-4Q				

R-1 SHOPPING LIST - Item No. 182

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2005**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0205633N, Aviation Improvements				PROJECT NUMBER AND NAME 1041, Aircraft Equipment Reliability/Maintainability Improvement Program (AERMIP)			
COST ($ in Millions)	2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	**1.861**	**2.057**	**2.953**	**3.013**	**2.295**	**2.771**	**2.804**	**2.858**
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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N, Aviation Improvements	1041, Aircraft Equipment Reliability/Maintainability Improvement Program (AERMIP)

B. Accomplishments/Planned Program

	FY04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.300	0.000	0.251	0.580
RDT&E Articles Quantity				

Arc Fault Circuit Breaker

The previous tests installed six arc fault circuit breakers (AFCB) at Naval Air Station (NAS) Patuxent River for shock, vibration, electrical, electromagnetic interference (EMI), temperature and altitude. However, no system level tests for AFCB were performed. This effort ending FY04 is to install approximately 80 - 115 volt, 400 Hz single phase AFCB on a C-9 Cargo/Transport aircraft to prevent arcing faults from starting fires. The test would show that on a commercial jet aircraft that the AFBC would work through system level Electro Magnetic Compatability (EMC) and lighting events. The effort starting in FY06 is to perform the same system level testing for the miniture version designed for fighter and attack aircraft and also helicopters.

	FY04	FY05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.150	0.403	0.193	0.181
RDT&E Articles Quantity				

Investigate High Value Return on Investment Candidates

Opportunities and issues arise yearly that demand immediate attention to provide significant benefit or to avert an unanticiapted 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.

	FY04	FY05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.300	0.335	0.000	0.000
RDT&E Articles Quantity				

Corrsion Barriers Tapes and Films

Over the last decade a number of barrier protection products (Applique', Av DEC, Gore gaskets, etc...) have been developed claiming significant improvement in corrosion protection while also promising reduced maintenance burden to maintain. Individual products have been investigated but no efforts have been made to comparatively test the family of products to determine the best products and practices. This effort will result in quantifiable assessment of the current state of the art and the required validation for the best of breed to be implemented into the fleet as the best practice. Effort follows and compliments recently completed effort on corrosion preventative compounds and continues the efforts for a complete corrosion protection plan.

R-1 SHOPPING LIST - Item No. 182

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N, Aviation Improvements	1041, Aircraft Equipment Reliability/Maintainability Improvement Program (AERMIP)

B. Accomplishments/Planned Program (Cont.)

	FY04	FY05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	0.346	0.346	0.000
RDT&E Articles Quantity				

Smart Wire
Effort will validate and transition Office of Naval Research (ONR) funded technology development by conducting full aircraft flight test and developing plans and procedures for fleet wide implementation. Embed diagnostics into the aircraft wiring system to manage the health of the wiring. Diagnostic technologies being evaluated include reflectometry, partial discharge analysis, fiber optic sensors, and acoustic sensors. The implementation of smart wiring reduces the time required to isolate faulty wires, minimizes erroneous equipment removals, allows for proactive replacement of aged wiring systems prior to catastrophic failure, and provides a substantial increase in safety by eliminating wiring fires.

	FY04	FY05	FY06	FY07
Accomplishments/Effort/Subtotal Cost	0.359	0.460	0.000	0.000
RDT&E Articles Quantity				

ASQ-208
Current ASW Magnetic Abnomilally Detector (MAD) system is of an antiquated design with poor reliability. A replacement is needed to reduce maintenance cost and inrease system readiness. Project will flight test and qualify a digital magnetic abnomality detector (MAD) to replace the current poor performing MAD. New equipment will reduce the number of sub-assemblies from 13 to 4 and reduce the space, weight and power consumption required by the old unit.

	FY04	FY05	FY06	FY07
Accomplishments/Effort/Subtotal Cost	0.320	0.513	0.000	0.000
RDT&E Articles Quantity				.

APN-202 Improvement Program
The current system is an antiquated design with poor reliability. This effort is to test and perform the required changes to validate a replacement APN-202 system.

R-1 SHOPPING LIST - Item No. 182

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N, Aviation Improvements	1041, Aircraft Equipment Reliability/Maintainability Improvement Program (AERMIP)

B. Accomplishments/Planned Program (Cont.)

	FY04	FY05	FY06	FY07
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.076	0.182
RDT&E Articles Quantity				

Thermal Barrier Coating Improvement

Thermal spiking causes material degradation leading to frequent repair and part replacement. Solution: An existing thermal barrier coating has been shown to reduce the surface temperature of a part by several hundred degrees in a thermal spike environment. Benefits: Preventing thermal spiking protects the part and prevents damage, reducing repair and replacement.

	FY04	FY05	FY06	FY07
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.096	0.133
RDT&E Articles Quantity				

Improved Firewall Materials

On-board Fire/Thermal Barriers Use Outdated Insulation Materials. Material science continues to produce incredibly light and effective insulation that could replace the older, less effective materials. Qualifing newer commercially available barrier materials are essential to effective fire detection and suppression as well as reduction in fleet maintenance and inspection when using more rugged material.

	FY04	FY05	FY06	FY07
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.201	0.182
RDT&E Articles Quantity				

Advanced Non-Chrome Primers

NC Primers (water-borne and high solids) are not available with performance better than chromated primers. However, environmental complicance is forcing the reduction of usage of chromates. The qualification and implementation of advanced non-chrome primers with adequate corrosion protection properties will reduce primer application and removal cost and facility liabilities due to the use of chromated primers.

R-1 SHOPPING LIST - Item No. 182

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N, Aviation Improvements	1041, Aircraft Equipment Reliability/Maintainability Improvement Program (AERMIP)

B. Accomplishments/Planned Program (Cont.)

	FY04	FY05	FY06	FY07
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.151	0.202
RDT&E Articles Quantity				

Advanced Performance Topcoat

Aircraft coating systems last 3-4 years under the best conditions while depot maintenance cycles are 8 years on average. The Office of Naval Research is developing a topcoat with enhanced durability so that it can last 8 years between repainting. The effort is to perform field testing and validation of the coating for approval for all Naval Aviation.

	FY04	FY05	FY06	FY07
Accomplishments/Effort/Subtotal Cost	0.432	0.000	0.399	0.433
RDT&E Articles Quantity				

AN/ASH-37(V) Structural Data Recording Set (SDRS)

The SDRS download process requires the memory unit to be removed from the aircraft often resulting in handling damage. This project will verify and validate a replacement Advanced Data Collection System that remotely downloads memory unit information. The replacement system will provide higher reliability, lower recurring costs and additional data download content.

	FY04	FY05	FY06	FY07
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.233	0.142
RDT&E Articles Quantity				

Imbedded Fire Bottle Condition Sensor

Fire Bottles rarely fail hydrostatic inspections, yet the testing requirement remains due to safety reasons and absorbs resources that could be better used elsewhere. Project is to apply the latest sensor technology to develop an “after market” add-on bottle monitoring device that affords immediate visible indication of bottle condition (go / no go). Bottle integrity is assured without conducting intrusive testing. This would completely eliminate the huge maintenance burden driven by current requirements for periodic hydro testing and the entire logistics stream for shipping of bottles worldwide to/from authorized depots. Significantly reduces aircraft down-time for bottle replacement and eliminates emissions of halon (an ozone depleter) during maintenance and testing.

R-1 SHOPPING LIST - Item No. 182

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N, Aviation Improvements	1041, Aircraft Equipment Reliability/Maintainability Improvement Program (AERMIP)

B. Accomplishments/Planned Program (Cont.)

	FY04	FY05	FY06	FY07
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.251	0.232
RDT&E Articles Quantity				

Processor Maintainability Program

Aging Navy equipment is often plagued with component obsolescence, specifically with critical microprocessors. Maintaining repair capability and spare availability is difficult due to obsolescence. This program will identify obsolescence issues and provide solution sets for selected candidate equipment. Specifically, this program will define common processors and implement a technology insertion program which utilizes an open architecture design with COTS processors. The AYK-14 Mission Computer is the first candidate system targeted.

	FY04	FY05	FY06	FY07
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.253	0.182
RDT&E Articles Quantity				

EMI Sealants and Coatings

Current EMI sealants and coatings yield inferior corrosion protection due to the need for maintaining electrical continuity and EMI performance in corrosion prone areas (strong galvanic couples). Maximum corrosion protection can be obtained by insulating galvanic couples. The incorporation of improved corrosion protection schemes while maintaining electrical and EMI performance will dramatically extend seal and surface life, reduce EMI degradation, and reduce corrosion maintenance cost.

	FY04	FY05	FY06	FY07
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.201	0.232
RDT&E Articles Quantity				

Improved Corrosion Preventative Compounds

Corrosion preventative compounds (CPC) employed in Naval Aviation have a protective life of roughly 40 days requiring reapplication every 28 day maintenance cycle.
The Office of Naval Research is developing a long-life CPC that can be effectively employed on a 308 day maintenance cycle. The effort is to field test and qualify for usage this CPC for all Naval Avaition usage.

R-1 SHOPPING LIST - Item No. 182

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N, Aviation Improvements	1041, Aircraft Equipment Reliability/Maintainability Improvement Program (AERMIP)

B. Accomplishments/Planned Program (Cont.)

	FY04	FY05	FY06	FY07
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.302	0.332
RDT&E Articles Quantity				

ASW-25 replacement
The current system is an antiquated design with poor reliability. This effort is to test and perform the required changes to validate the ASW-27 as a replacement to the ASW-25 for those aircraft which are still flying with this system.

	FY04	FY05	FY06	FY07
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

	FY04	FY05	FY06	FY07
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

R-1 SHOPPING LIST - Item No. 182

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N, Aviation Improvements	1041, Aircraft Equipment Reliability/Maintainability Improvement Program (AERMIP)

C. PROGRAM CHANGE SUMMARY:

Funding:	FY04	FY 05	FY 06	FY 07
Previous President's Budget	1.431	2.079	3.008	3.107
Current BES/President's Budget	1.861	2.057	2.953	3.013
Total Adjustments	0.430	-0.022	-0.055	-0.094
Summary of Adjustments				
Congressional program reductions				
Congressional undistributed reductions		-0.021		
Congressional rescissions				
SBIR/STTR Transfer	-0.002			
Other Adjustments		-0.001	-0.114	-0.134
Economic Assumptions			0.059	0.040
Reprogrammings	0.432			
Congressional increases				
Subtotal	0.430	-0.022	-0.055	-0.094

Schedule:

Schedule change adds FY06-FY09 on miniaturized Arc Fault Circuit Breaker for fighter aircraft and helicopters.
Initial investigation efforts on AN/ASH-37(V) Structural Data Recording Set (SDRS) included under High Value Return on Investment Candidates as lead into FY06 starts.
Initial investigation efforts on Processor Maintainability Program included under High Value Return on Investment Candidates as lead into FY06 starts. Effort extended through FY11 due to noticed increase in Processor issues.
FY06 New Start efforts of Thermal Barrier Coating Improvement, Improved Firewall Materials, Advanced Non-Chrome Primers, Advanced Performance Topcoat, An/ASH-37(V) Structural data Recording Set (SDRS), Imbedded Fire Bottle Condition Sensor, Processor Maintainability Program, EMI Sealants and Coatings, Improved Corrosion Prevetative Compounds, and ASW-25 Replacement added to schedule profile

Technical:

Not applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N, Aviation Improvements	1041, Aircraft Equipment Reliability/Maintainability Improvement Program (AERMIP)

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost

Related RDT&E:
0205633N, Aircraft Exploration Model Development, 9109
0205633N, Automated Wire Analysis, 9426
0205633N, NAVAIR Technology Commercialization, 9428
0205633N, Corrosion Inhibiting Coatings, 9628
0205633N, Nano-Composite Hard-Coat for Aircraft Canopies, 9629

E. ACQUISITION STRATEGY:

Not applicable

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2005**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT 0205633N, Aviation Improvements			PROJECT NUMBER AND NAME 1041, Aircraft Equipment Reliability/Maintainability Improvement Program (AERMIP)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	
Ancillary Hardware 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			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses	WX	NAWCAD Patuxent River, MD	10.754	1.837	10/04	2.613	11/05	2.673	11/06	Continuing	Continuing	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			10.754	1.837		2.613		2.673		Continuing	Continuing	
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2005**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0205633N, Aviation Improvements			PROJECT NUMBER AND NAME 1041, Aircraft Equipment Reliability/Maintainability Improvement Program (AERMIP)							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 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	ss/cpff	Raytheon, Indianapolis, IN	0.900	0.090	11/04	0.150	12/05	0.150	12/06	1.290	2.580	2.580
Contractor Engineering Support											0.000	
Program Management Support	WX	NAWCAD Patuxent River, MD	0.120	0.120	10/04	0.180	11/05	0.180	11/06	Continuing	Continuing	
Travel	WX	NAWCAD Patuxent River, MD	0.020	0.010	10/04	0.010	11/05	0.010	11/06	Continuing	Continuing	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			1.040	0.220		0.340		0.340		Continuing	Continuing	
Remarks:												
Total Cost			11.794	2.057		2.953		3.013		Continuing	Continuing	
Remarks:												

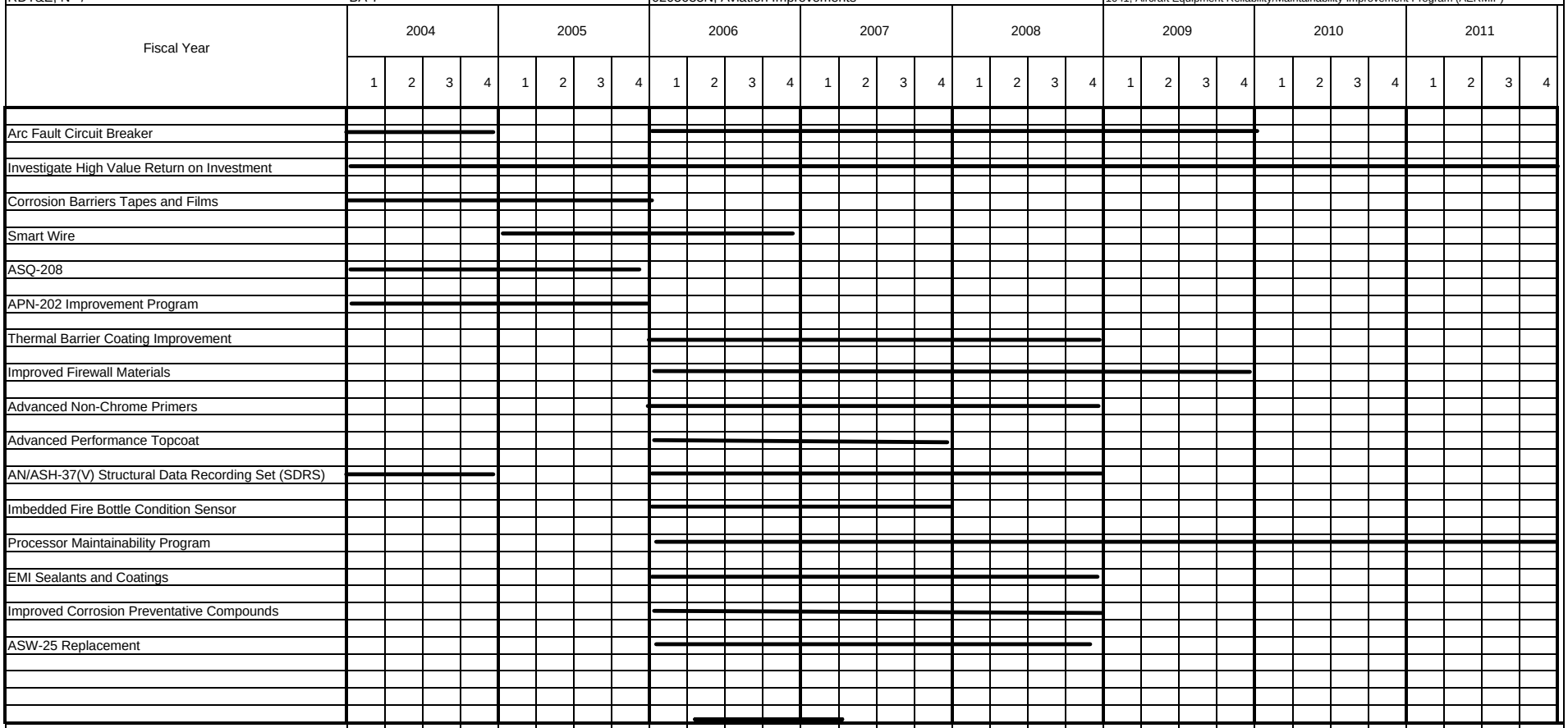
R-1 SHOPPING LIST - Item No. 182

EXHIBIT R4, Schedule Profile | DATE: February 2005

APPROPRIATION/BUDGET ACTIVITY: RDT&E, N / BA-7

PROGRAM ELEMENT NUMBER AND NAME: 0205633N, Aviation Improvements

PROJECT NUMBER AND NAME: 1041, Aircraft Equipment Reliability/Maintainability Improvement Program (AERMIP)



CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2005**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT 0205633N, Aviation Improvements				PROJECT NUMBER AND NAME 1041, Aircraft Equipment Reliability/Maintainability Improvement Program (AERMIP)				
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Arc Fault Circuit Breaker	1Q-4Q		1Q-4Q	1Q-4Q					
Investigate High Value Return on Investment	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q					
Corrosion Barriers Tapes and Films	1Q-4Q	1Q-4Q							
Smart Wire		1Q-4Q	1Q-4Q						
ASQ-208	1Q-4Q	1Q-4Q							
APN-202 Improvement Program	1Q-4Q	1Q-4Q							
Thermal Barrier Coating Improvement			1Q-4Q	1Q-4Q					
Improved Firewall Materials			1Q-4Q	1Q-4Q					
Advanced Non-Chrome Primers			1Q-4Q	1Q-4Q					
Advanced Performance Topcoat			1Q-4Q	1Q-4Q					
AN/ASH-37(V) Structural Data Recording Set (SDRS)	1Q-4Q		1Q-4Q	1Q-4Q					
Imbedded Fire Bottle Condition Sensor			1Q-4Q	1Q-4Q					
Processor Maintainability Program			1Q-4Q	1Q-4Q					
EMI Sealants and Coatings			1Q-4Q	1Q-4Q					
Improved Corrosion Preventative Compounds			1Q-4Q	1Q-4Q					
ASW-25 Replacement			1Q-4Q	1Q-4Q					

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2005**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0205633N Aviation Improvements				PROJECT NUMBER AND NAME 1355 Aircraft Engine Component Improvement Program			
COST ($ in Millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	**47.523**	**51.962**	**68.810**	**58.095**	**58.065**	**58.744**	**58.725**	**60.113**
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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N Aviation Improvements	1355 Aircraft Engine Component Improvmement Program

B. Accomplishments/Planned Program

Platform-Specific Efforts:

	FY 04	FY 05	FY06	FY 07
Accomplishments/Effort/Subtotal Cost	2.228	9.095	9.731	8.462
RDT&E Articles Quantity				

T56 Engine (P-3, E-2, C-2, C-130)

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-A-427 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.

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.743	0.440	0.452	0.441
RDT&E Articles Quantity				

E-2/C-2/C-130

Incorporate improved blade heaters. Develop improved propeller control system.

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	1.152	0.879	0.000	0.000
RDT&E Articles Quantity				

S-3

High Pressure Compressor (HPC) life limit implementation. Validation and implementation of High Pressure Turbine (HPT), Low Pressure Turbine (LPT), and Fan critical part life limit changes. Develop Combustion Chamber Frame (CCF) and HPT physics based thermal models. Develop LPT physics based thermal models. Collect engine parameter flight data required to perform updated engine mission analysis. Initiate the development of improved Eddy Current (EC) inspection techniques for small holes and specific features. Analyze and correlate HPC EC inspection requirements to critical part Fracture Mechanics (FM) capabilities. Investigate propulsion and power system obsolescence. Conduct engine component and propulsion and power electrical system reliability/maintainability analysis. Conduct commercial critical part hardware commonality analysis.

R-1 SHOPPING LIST - Item No. 182

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N Aviation Improvements	1355 Aircraft Engine Component Improvement Program

B. Accomplishments/Planned Program

Platform-Specific Efforts:

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	2.254	6.658	7.089	7.730
RDT&E Articles Quantity				

Mature Aircraft

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.

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.524	2.096	2.154	2.103
RDT&E Articles Quantity				

H-2/H-60

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.

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	5.836	3.728	3.988	3.892
RDT&E Articles Quantity				

AV-8B

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 Insepction (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.

R-1 SHOPPING LIST - Item No. 182

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N Aviation Improvements	1355 Aircraft Engine Component Improvement Program

B. Accomplishments/Planned Program

Platform-Specific Efforts:

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	3.511	9.799	14.507	9.068
RDT&E Articles Quantity		.		

H-53/H-46/H-3

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.

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	2.411	2.346	2.411	2.353
RDT&E Articles Quantity				

H-1

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 (T700 and T400); addressed Blisk, Rear Shaft, Spacer & Tierod Life Update (T700), development of environmentally friendly repairs such as High Velocity OXY fuel coatings to replace chrome and nickel plate repairs; and development of Durability Project (T700-401/-401C), N5 Blades w/ tip cap & Nozzles, T700 TiN Coating (Test Articles, Corrosion/Erosion/Full Sand Engine Testing), T700 Diagnostics Life Mgt Performance Evaluation (IMD), T700 Diagnostics (Performance Evaluation), Durability Project (T700-401/-401C), T700 TiN Coating (Pending Pass/Fail... Incorp TiN), EPAMs Mission Update to 4BN, T700 Diagnostics (Performance Evaluation), T400 Improved Compressor Turbine Stub Shaft, T400 Improved Gas Generator Case Diffuser Inlet, T400 Improved Compressor Coating, T400 Life Management, Study T400 Parts Obsolescence.

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.631	0.124	0.000	0.000
RDT&E Articles Quantity				

F-14B/D

Address obsolescence of electrical components. High pressure turbine redesign efforts. Address extension of component life and the reduction of maintenance hours. Improvements to propulsion system safety through an active life management program for critical rotating components. Efforts to reduce the engine non-recoverable in-flight shutdown Rate and propulsion system related mission abort rate.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N Aviation Improvements	1355 Aircraft Engine Component Improvement Program

B. Accomplishments/Planned Program

Platform-Specific Efforts:

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	10.208	9.083	15.100	12.350
RDT&E Articles Quantity				

F-18 C/D/E/F

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.

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	3.027	1.220	4.003	2.877
RDT&E Articles Quantity				

T-45

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

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost			0.200	0.200
RDT&E Articles Quantity				

V-22

Review safety ECP's and support incorpation safety requirements.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N Aviation Improvements	1355 Aircraft Engine Component Improvement Program

B. Accomplishments/Planned Program

Platform-Specific Efforts:

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost			0.100	0.100
RDT&E Articles Quantity				

F-16

Review safety ECP's and support incorpation safety requirements.

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	14.998	6.494	9.075	8.519
RDT&E Articles Quantity				

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.

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N Aviation Improvements	1355 Aircraft Engine Component Improvement Program

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2004	FY 2005	FY 2006	FY 2007
Previous President's Budget	48.473	52.436	56.134	54.357
Current BES/President's Budget	47.523	51.962	68.810	58.095
Total Adjustments	-0.950	-0.474	12.676	3.738
Summary of Adjustments				
Congressional program reductions				
Congressional undistributed reductions		-0.463		
Congressional rescissions				
SBIR/STTR Transfer	-0.706			
Other Adjustments		-0.011	11.922	2.633
Economic Assumptions	-0.050		0.754	1.105
Reprogrammings	-0.194			
Congressional increases				
Subtotal	-0.950	-0.474	12.676	3.738

Schedule: Not applicable

Technical: Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N Aviation Improvements	1355 Aircraft Engine Component Improvement Program

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name

PE 0203752A (Aircraft Engine CIP Army)
PE 0207268F (Aircraft Engine CIP Air Force)
PE 0602236N (Turbine Engine Improvement, TOC FNC)
PE 0603236N (Turbine Engine Improvement, TOC, FNC)
PE 0602114N (UAV Propulsion Autonomous Operations FNC)
PE 0603114N (UAV Propulsion Autonomous Operations FNC)

E. ACQUISITION STRATEGY:

Not applicable

Exhibit R-3 Cost Analysis (page 1)												
									Date: **February 2005**			
RDT&E, N /	**BA-7**	0205633N Aviation Improvements				1355 Aircraft Engine Component Improvement Program						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Systems Eng F110 Engine Program*	SS/CPAF	GE- OHIO	17.868	0.124	12/04						17.992	17.992
Systems Eng F402 Engine Program	SS/CPFF	ROLLS ROYCE - UK	33.094	3.728	12/04	3.988	12/05	3.892	12/06		44.702	44.702
Systems Eng T58/T64 Engine Program	SS/CPFF	GE - MASS	37.342	9.799	10/04	14.507	10/05	9.068	10/06		70.716	70.716
Systems Eng J52 Engine Program	SS/CPFF	P&W - FLORIDA	15.046	5.849	12/04	6.258	12/05	6.919	12/06		34.072	34.072
Systems Eng T56 Engine Program	SS/CPFF	INDIANA	11.838	9.095	02/05	9.731	02/06	8.462	02/07		39.126	39.126
Systems Eng F405 Engine Program	SS/CPAF	ROLLS ROYCE - UK	11.260	1.220	12/04	4.003	12/05	2.877	12/06		19.360	19.360
Systems Eng F414/F404 Engine Program	SS/CPFF	GE - MASS	11.628	9.083	12/04	15.100	12/05	12.350	12/06		48.161	48.161
Systems Eng T700 Engine Program	SS/CPFF	GE - MASS	8.115	4.192	01/05	4.308	01/06	4.205	01/07		20.820	20.820
Systems Eng TF34 Engine Program	SS/CPFF	GE - MASS	7.565	0.879	11/04						8.444	8.444
Systems Eng T406 Engine Program	WX	NAWCAD-PAX	1.000			0.200	12/05	0.200	12/06	Continuing	Continuing	
Systems Eng T400 Engine Program	SS/CPFF	P&W - FLORIDA	2.167	0.250	12/04	0.257	12/05	0.251	12/06		2.925	2.925
Systems Eng J85 Engine Program	SS/CPFF	GE - OK	1.045	0.809	11/04	0.831	11/05	0.811	11/06		3.496	3.496
Systems Eng F100 Engine Program	WX	NAWCAD-PAX				0.100	10/05	0.100	10/06	Continuing	Continuing	
Systems Eng Props Program	SS/CPFF	HAM SUNSTRAND - CONI	7.420	0.440	12/04	0.452	12/05	0.441	12/06		8.753	8.753
Systems Eng Contracts under 1.0M	VARIOUS	VARIOUS	15.782	1.036	10/04	1.064	10/05	1.038	10/06	Continuing	Continuing	
Systems Eng Lab Field Activity (1.0M or more)	WX	NAWCAD-PAX	133.474	4.195	10/04	6.552	10/05	6.253	10/06	Continuing	Continuing	
Systems Eng Other In-House Support (1.0M or less)	VARIOUS	VARIOUS	17.300	0.310	10/04	0.319	10/05	0.311	10/06	Continuing	Continuing	
GFE-GFP Fuel Increment	MILSTRIP	DES/DLA	4.706	0.487	10/04	0.663	10/05	0.451	10/06	Continuing	Continuing	
Award Fees	SS/CPAF		1.305								1.305	1.305
Subtotal Product Development			337.955	51.496		68.333		57.629		Continuing	Continuing	

Remarks:

* F110 (F14 B/D) AF contract has a ten year period of performance.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2005**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**		PROGRAM ELEMENT 0205633N Aviation Improvements			PROJECT NUMBER AND NAME W1355 Aircraft Engine Component Improvement Program							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Development Support	VARIOUS	VARIOUS	5.483	0.310	10/04	0.318	10/05	0.310	10/06	Continuing	Continuing	
Software Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
Studies & Analyses												
GFE												
Award Fees												
Subtotal Support			5.483	0.310		0.318		0.310		Continuing	Continuing	

Remarks:

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 3)								DATE: **February 2005**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**			PROGRAM ELEMENT NUMBER AND NAME 0205633N Aviation Improvements			PROJECT NUMBER AN W1355 Aircraft Engine Component Improvement Program						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	VARIOUS	VARIOUS	2.907	0.053	10/04	0.054	10/05	0.053	10/06	Continuing	Continuing	
Operational Test & Evaluation												
Live Fire Test & Evaluation												
Test Assets												
Tooling												
GFE												
Award Fees												
Subtotal T&E			2.907	0.053		0.054		0.053		Continuing	Continuing	
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support	VARIOUS	VARIOUS	1.188	0.053	10/04	0.054	10/05	0.053	10/06	Continuing	Continuing	
Travel	WX	NAWCAD, Pax River	0.093	0.050	10/04	0.051	10/05	0.050	10/06	Continuing	Continuing	
Transportation												
SBIR Assessment												
Subtotal Management			1.281	0.103		0.105		0.103		Continuing	Continuing	
Remarks:												
Total Cost			347.626	51.962		68.810		58.095		Continuing	Continuing	
Remarks:												

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2005**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0205633N, Aviation Improvements				PROJECT NUMBER AND NAME 9109 Airfraft Exploration Model Development			
COST ($ in Millions)	2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	**3.611**	**2.938**						
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Aircraft Age Exploration Model Development is for Naval Aircraft platforms. The model will use existing Naval Aircraft data to establish connections between age and reliabilty, maintainability, and readiness and will provide the Navy with a valuable tool for understanding, predicting, and communicating impacts of decisions to extend aircraft service lives and for mitigating risks associated with these decisions. This is a continuation of efforts initiatied in FY02 to add enhanced functionallity to include automatic identification of reliability degredation items and automatic tracking of actuals against model generated predictions.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N, Aviation Improvements	9109 Airfraft Exploration Model Development

B. Accomplishments/Planned Program

	FY04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	3.211	2.138	0.000	0.000
RDT&E Articles Quantity				

Software Development
Develop enhancements to computer model that integrates existing maintenance data with predictive computations to determine future reliability and maintianability conditions for aircraft and components. Enhancements include automated generation of reliability and maintainabilty opportunity triggers and also real time tracking of actual results against predicted performance.

	FY04	FY05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.150	0.300	0.000	0.000
RDT&E Articles Quantity				

Technical data and training materials
Develop technical data to include user manuals and other training materials. Conduct user training sessions as required for model validation.

	FY04	FY05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.250	0.500	0.000	0.000
RDT&E Articles Quantity				

Conduct model validation studies
Using a combination of historical and current maintenance data perform model verification and validation studies to demonstrate acceptable level of confidence in outputs produced by the model

R-1 SHOPPING LIST - Item No. 182

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N, Aviation Improvements	9109 Airfraft Exploration Model Development

C. PROGRAM CHANGE SUMMARY:

Funding:	FY04	FY 05	FY 06	FY 07
Previous President's Budget	3.708	0.000		
Current BES/President's Budget	3.611	2.938		
Total Adjustments	-0.097	2.938	0.000	0.000
Summary of Adjustments				
Congressional program reductions				
Congressional undistributed reductions		-0.061		
Congressional rescissions				
SBIR/STTR Transfer	-0.094			
Other Adjustments		-0.001		
Economic Assumptions	-0.003			
Reprogrammings				
Congressional increases		3.000		
Subtotal	-0.097	2.938	0.000	0.000

Schedule:

Not applicable

Technical:

Not applicable

R-1 SHOPPING LIST - Item No. 182

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N, Aviation Improvements	9109 Airfraft Exploration Model Development

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost

Related RDT&E:
0205633N, Aircraft Equipment Reliability & Maintainability Improvement Program (AERMIP), 1041
0205633N, Automated Wire Analysis, 9426
0205633N, NAVAIR Technology Commercialization, 9428
0205633N, Corrosion Inhibiting Coatings, 9628
0205633N, Nano-Composite Hard-Coat for Aircraft Canopies, 9629

E. ACQUISITION STRATEGY:

Not applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2005**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0205633N, Aviation Improvements				PROJECT NUMBER AND NAME 9426 Automated Wire Analysis			
COST ($ in Millions)	2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	**2.900**	**4.259**						
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Current practices have technicians perform electrical testing on aircraft using both manual and automated methods. Once a short or open is found using existing test equipment, the technician must then find the physical location of the fault, one wire at a time, using pin-to-pin tests with handheld multi-meters and visual inspection. This generally involves at least two individuals connecting leads to each end of a wire to be tested. This is a slow process and reactive in nature. New commercial technology that incorporates Standing Wave Reflectometry (SWR) can proactively identify all hard faults (e.g. shorts and opens) of wiring malfunctions from a single end wire test, verify system modifications, and localize aircraft wiring malfunctions to within inches. This capability does not exist in the U.S. Navy today. A single wiring analyzer can serially test up to 1,152 wires at a time and the system can be expanded to test up to a maximum of 128,000 test points. This effort is to develop, validate and qualify this capability for Naval Avaition applications.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N, Aviation Improvements	9426 Automated Wire Analysis

B. Accomplishments/Planned Program

	FY04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	1.700	2.659	0.000	0.000
RDT&E Articles Quantity				

Software development
Develop the software required to utilize the new technology that incorporates Standing Wave Reflectometry (SWR) that can proactively identify all hard faults (e.g. shorts and opens) of wiring malfunctions from a single end wire test, verify system modifications, and localize aircraft wiring malfunctions to within inches.

	FY04	FY05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.900	1.000	0.000	0.000
RDT&E Articles Quantity				

In-Service validation testing
Testing to ensure that the product works in a true fleet environment. Aircraft to be studied are the EA-6B, C-2, S-3, E-6, H-46, and H-53.

	FY04	FY05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.300	0.600	0.000	0.000
RDT&E Articles Quantity				

Tech data and training materials
User training and the development of the materials required for training and after training reference.

R-1 SHOPPING LIST - Item No. 182

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N, Aviation Improvements	9426 Automated Wire Analysis

C. PROGRAM CHANGE SUMMARY:

Funding:	FY04	FY 05	FY 06	FY 07
Previous President's Budget	2.967	0.000		
Current BES/President's Budget	2.900	4.259		
Total Adjustments	-0.067	4.259	0.000	0.000
Summary of Adjustments				
Congressional program reductions				
Congressional undistributed reductions		-0.040		
Congressional rescissions				
SBIR/STTR Transfer	-0.064			
Other Adjustments		-0.001		
Economic Assumptions				
Reprogrammings	-0.003			
Congressional increases		4.300		
Subtotal	-0.067	4.259	0.000	0.000

Schedule:

Not applicable

Technical:

Not applicable

R-1 SHOPPING LIST - Item No. 182

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2005
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N, Aviation Improvements	9426 Automated Wire Analysis

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost

Related RDT&E:
0205633N, Aircraft Equipment Reliability & Maintainability Improvement Program (AERMIP), 1041
0205633N, Age Exploration Model Development, 9109
0205633N, NAVAIR Technology Commercialization, 9428
0205633N, Corrosion Inhibiting Coatings, 9628
0205633N, Nano-Composite Hard-Coat for Aircraft Canopies, 9629

E. ACQUISITION STRATEGY:

Not applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2005**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0205633N Aviation Improvements				PROJECT NUMBER AND NAME 9427 Digital Integrated Cockpit Display			
COST ($ in Millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
`	**0.988**	**0.989**						
RDT&E Articles Qty	**1**	**1**						

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The TH-57 Helicopter is the Navy's only primary helicopter pilot training platform, and is expected to remain in that capacity until 2025. All Navy fleet helicopters will have digital cockpits by 2012. To remain viable as a effective training platform, which meets the training requirements of an all digital helicopter fleet, the TH-57 cockpit can best utilize a digital design to effect greater aircraft training utilization. Research and Development funds will be utilized to produce a product that keeps pace with the rapidly changing fleet helicopter pilot training requirements and provides increased hard landing/crash and exceedence warning system protection to aircrews. The following areas will be explored Requirement Analysis, Cost Estimation, Crew Systems/Human System Integration, Logistics Support Analysis, and Aircraft Integration.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N Aviation Improvements	9427 Digital Integrated Cockpit Display

B. Accomplishments/Planned Program

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.290	0.200		
RDT&E Articles Quantity				

Test article development and integration.

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.698	0.789		
RDT&E Articles Quantity				

The following areas will be explored, Requirement Analysis, Cost Estimation, Crew Systems/Human System Integration, Logistics Support Analysis, and Aircraft Integration.

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

R-1 SHOPPING LIST - Item No. 182

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N Aviation Improvements	9427 Digital Integrated Cockpit Display

C. PROGRAM CHANGE SUMMARY:

Funding:	FY04	FY 05	FY 06	FY 07
Previous President's Budget	0.989	0.000		
Current BES/President's Budget	0.988	0.989		
Total Adjustments	-0.001	0.989	0.000	0.000
Summary of Adjustments				
Congressional program reductions				
Congressional undistributed reductions		-0.011		
Congressional rescissions				
SBIR/STTR Transfer				
Other Adjustments	-0.001			
Economic Assumptions				
Reprogrammings				
Congressional increases		1.000		
Subtotal	-0.001	0.989	0.000	0.000

Schedule:

Not applicable

Technical:

Not applicable

R-1 SHOPPING LIST - Item No. 182

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N, Aviation Improvements	9427 Digital Integrated Cockpit Display

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost

Related RDT&E:
0205633N, Aircraft Equipment Reliability & Maintainability Improvement Program (AERMIP), 1041
0205633N, Age Exploration Model Development, 9109
0205633N, NAVAIR Technology Commercialization, 9428
0205633N, Nano-Composite Hard-Coat for Aircraft Canopies, 9629

E. ACQUISITION STRATEGY:

Not applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2005**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0205633N, Aviation Improvements				PROJECT NUMBER AND NAME 9628 Corrision Inhibiting Coatings			
COST ($ in Millions)	2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		**1.388**						
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Corrosion Inhibiting Coatings initiative ia an effort to develop and test a conductive polymer coating for increased corrosion resistance. This effort will optimize and scale up a coating system that will provide improved corrosion protection for Navy aircraft and be compatible with all environmental regulations.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N, Aviation Improvements	9628 Corrision Inhibiting Coatings

B. Accomplishments/Planned Program

	FY04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	1.388	0.000	0.000
RDT&E Articles Quantity				

Development Test and Evaluation
Develop a commercially available, environmentally and worker friendly primer capable of replacing primers containing hexavalent chromium for protection of aluminum alloys in aerospace applications.

	FY04	FY05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

	FY04	FY05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

R-1 SHOPPING LIST - Item No. 182

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N, Aviation Improvements	9628 Corrision Inhibiting Coatings

C. PROGRAM CHANGE SUMMARY:

Funding:	FY04	FY 05	FY 06	FY 07
Previous President's Budget		0.000		
Current BES/President's Budget		1.388		
Total Adjustments	0.000	1.388	0.000	0.000
Summary of Adjustments				
Congressional program reductions				
Congressional undistributed reductions		-0.012		
Congressional rescissions				
SBIR/STTR Transfer				
Other Adjustments				
Economic Assumptions				
Reprogrammings				
Congressional increases		1.400		
Subtotal	0.000	1.388	0.000	0.000

Schedule:

Not applicable

Technical:

Not applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N, Aviation Improvements	9628 Corrision Inhibiting Coatings

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost

Related RDT&E:
0205633N, Aircraft Equipment Reliability & Maintainability Improvement Program (AERMIP), 1041
0205633N, Age Exploration Model Development, 9109
0205633N, NAVAIR Technology Commercialization, 9428
0205633N, Automated Wire Analysis, 9426
0205633N, Nano-Composite Hard-Coat for Aircraft Canopies, 9629

E. ACQUISITION STRATEGY:

Not applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2005**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0205633N, Aviation Improvements				PROJECT NUMBER AND NAME 9629 Nano-Composite Hard Coat for Aircraft Canopies			
COST ($ in Millions)	2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		**2.279**						
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Nano-Composite Hard-Coat for Aircraft Canopies initiative is an effort to develop and test improved canopy coating materials. This effort will optimize and scale up a coating system that will provide improved chemical and abrasion protection for aircraft canopies and windscreens.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N, Aviation Improvements	9629 Nano-Composite Hard Coat for Aircraft Canopies

B. Accomplishments/Planned Program

	FY04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	2.279	0.000	0.000
RDT&E Articles Quantity				

Development Test and Evaluation
Develop and transition an optically transparent coating for aircraft wind screens and canopies that is resistant to abrasion and chemical attack.

	FY04	FY05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

	FY04	FY05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

R-1 SHOPPING LIST - Item No. 182

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N, Aviation Improvements	9629 Nano-Composite Hard Coat for Aircraft Canopies

C. PROGRAM CHANGE SUMMARY:

Funding:	FY04	FY 05	FY 06	FY 07
Previous President's Budget		0.000		
Current BES/President's Budget		2.279		
Total Adjustments	0.000	2.279	0.000	0.000
Summary of Adjustments				
Congressional program reductions				
Congressional undistributed reductions		-0.020		
Congressional rescissions				
SBIR/STTR Transfer				
Other Adjustments		-0.001		
Economic Assumptions				
Reprogrammings				
Congressional increases		2.300		
Subtotal	0.000	2.279	0.000	0.000

Schedule:

Not applicable

Technical:

Not applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N, Aviation Improvements	9629 Nano-Composite Hard Coat for Aircraft Canopies

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost

Related RDT&E:
0205633N, Aircraft Equipment Reliability & Maintainability Improvement Program (AERMIP), 1041
0205633N, Age Exploration Model Development, 9109
0205633N, NAVAIR Technology Commercialization, 9428
0205633N, Automated Wire Analysis, 9426
0205633N, Corrision Inhibiting Coatings, 9628

E. ACQUISITION STRATEGY:

Not applicable

R-1 SHOPPING LIST - Item No. 182

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2005**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-4**	PROGRAM ELEMENT NUMBER AND NAME 0205633N Aviation Improvements				PROJECT NUMBER AND NAME 9630 Center for Defense Sustainment Technology			
COST ($ in Millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		**0.990**						
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This effort will fund a Center for Defense Sustainment Technology that will conduct studies and analysis support for Aging Aircraft issues. It will also conduct aircraft obsolescence requirements analysis, focused research and development, and implementation and deployment of solutions and best practice identification and dissemination. The overall goal of these activities is to safely extend the service life of legacy aircraft that we currently cannot afford to replace, to intelligently invest in solutions that reduce the operating costs of these fleets, and to reduce redundancy of efforts in development and fielding of these solutions. This center is a public-private partnership including not for profit consortia, small business, Government activities, and academia.

R-1 SHOPPING LIST - Item No. 182

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-4	0205633N Aviation Improvements	9630 Center for Defense Sustainment Technology

B. Accomplishments/Planned Program

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.990		
RDT&E Articles Quantity				

Center for Defense Sustainment Technology
To support the establishment of Center for Defense Sustainment Technology, which will conduct studies and analysis support for Aging Aircraft issues. This center is a public-private partnership including not for profit consortia, small business, Government activities and academia. FY05 funding has specifically been targeted to support the Joint Council on Aging Aircraft (JCAA) National Strategy efforts in the Cost of Aging, obsolescence management and rotorcraft dynamic component technologies.

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

R-1 SHOPPING LIST - Item No. 182

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-4	0205633N Aviation Improvements	9630 Center for Defense Sustainment Technology

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2004	FY 2005	FY 2006	FY2007
Previous President's Budget:		0.000		
Current BES/President's Budget		0.990		
Total Adjustments		0.990		
Summary of Adjustments				
Congressional program reductions				
Congressional undistributed reductions		-0.010		
Congressional rescissions				
SBIR/STTR Transfer				
Other Adjustments				
Economic Assumptions				
Reprogrammings				
Congressional increases		1.000		
Subtotal	0.000	0.990	0.000	0.000

Schedule:

Not Applicable

Technical:

Not Applicable.

R-1 SHOPPING LIST - Item No. :182

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-4	0205633N Aviation Improvements	9630 Center for Defense Sustainment Technology

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
PE 0602201F (Aerospace Flight Dynamics)									
PE 0602233N (Mission Support Equipment)									
PE 0604264N (Aircrew Systems Development)									
PE 0604706F (Life Support Systems)									
PE 06023231F (Crew Systems and Personal Protection Technology)									

E. ACQUISITION STRATEGY:

Not Applicable

R-1 SHOPPING LIST - Item No. 1182

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2005**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-7**	PROGRAM ELEMENT NUMBER AND NAME 0205633N Aviation Improvements				PROJECT NUMBER AND NAME 9631 Devel.of Next Gen.Technology for the Inspection of A/C Engines, Diagnostics and Repair			
COST ($ in Millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	**0.000**	**3.270**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Project 9631 - Development of Next Generation Technology for the Inspection of Aircraft Engines, Diagnostics and Repair will lead to the development of a next generation Common Video Borescope Set to support the fleet maintenance requirement to inspect internal components of aircraft engines and airframes for defects. The goals of this effort are to address deficiencies in the current inspection equipment by improving survivability, reducing proliferation/inventory, reducing maintenance costs, improving training and reliabilty, providing an upgradeable design, and maximizing commonality of inspection between the Organizational and Intermediate levels of maintenance.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N Aviation Improvements	9631 Devel.of Next Gen.Technology for the Inspection of A/C Engines, Diagnostics and Repair

B. Accomplishments/Planned Program

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		3.270	0.000	0.000
RDT&E Articles Quantity				

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 powerplants and airframes for defects by improving survivablity, reducing inventory, reducing maintenance cost, improving training and reliability, and maximizing commonality of the inspection equipment.

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

R-1 SHOPPING LIST - Item No. 182

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N Aviation Improvements	9631 Devel.of Next Gen.Technology for the Inspection of A/C Engines, Diagnostics and Repair

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 04	FY 05	FY 06	FY 07
Previous President's Budget:		0.000		
Current BES/President's Budget		3.270		
Total Adjustments	0.000	3.270	0.000	0.000
Summary of Adjustments				
Congressional program reductions				
Congressional undistributed reductions		-0.029		
Congressional rescissions				
SBIR/STTR Transfer				
Other Adjustments		-0.001		
Economic Assumptions				
Reprogrammings				
Congressional increases		3.300		
Subtotal	0.000	3.270	0.000	0.000

Schedule:

Milestones added for Project 9631

Not Applicable

Technical:

Not Applicable

R-1 SHOPPING LIST - Item No. 182

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-7	0205633N Aviation Improvements	9631 Devel.of Next Gen.Technology for the Inspection of A/C Engines, Diagnostics and Repair

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
APN 070500 Ground Support Equipment			0.49	4.8	5.75	5.75	4.4	3.96		25.15

E. ACQUISITION STRATEGY:

This is a non-ACAT program. NAVAIR Lakehurst initiated a solicitation for a Broad Agency Announcement (BAA) in Novemeber 2004 with proposals due by February 2005. Source selection panel will evaluate proposals and select awardee(s). Concept study due by 1 August 2005. Follow-on contract may be awarded for a prototype and/or production units. Operational Advisory Group (OAG) has prioritized procurements beginning in FY06.

R-1 SHOPPING LIST - Item No. 182