PE NUMBER: 0605011F
PE TITLE: RDT&E For Aging Aircraft

Exhibit R-2, RDT&E Budget Item Justification

DATE: February 2005

BUDGET ACTIVITY: 05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE: 0605011F RDT&E For Aging Aircraft

	Cost ($ in Millions)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
	Total Program Element (PE) Cost	38.950	31.783	24.384	25.597	26.149	26.535	27.067	27.425	Continuing	TBD
4685	Aging Aircraft	38.950	31.783	24.384	25.597	26.149	26.535	27.067	27.425	Continuing	TBD

(U) A. Mission Description and Budget Item Justification

This program develops cross-cutting technologies to extend the service life, ensure flight safety, control rapidly rising sustainment costs, and retain the operational capability of the aging aircraft fleet. The program identifies these cross-cutting technologies through detailed business case analyses identifying opportunities to reduce total ownership costs and improve reliability, availability, and maintainability. The program then develops and delivers solutions (to include prototype hardware and software) to address cross-cutting platform deficiencies. The program also analyzes and recommends changes to existing sustainment processes such as field and depot repair processes. Additionally, the program develops and delivers tools to facilitate system/subsystem management, including the sharing of aging aircraft information and knowledge among the Air Logistics Centers, Product Centers, System Program Offices, other Services and government agencies, and industry, as well as providing senior decision makers with a common, comprehensive understanding of program areas such as corrosion, fatigue, wiring, subsystems, etc. Note: In FY 2005, Congress added a total of $16.4 million for the following Congressional Adds: $4.2 million for Academic Center for Aging Aircraft, $1.0 million for Enterprise Availability and Cost Optimization System System, $1.3 million for Fleet Capability Assessment Process, $4.6 million for Aging Landing Gear Life Extension, $1.3 million for Fleet Readiness, $1.0 million for Advanced Aircraft Avionics and Electronics Insertion, $1.3 million for LEAN Depot Engine Repair, and $1.7 million for TER-O Mil-STD-1760 ("Smart") Modification. This program is in Budget Activity 5, System Demonstration and Development since projects/capabilities will be developed in this program and then made available for procurement by already operational systems.

(U) B. Program Change Summary ($ in Millions)

		FY 2004	FY 2005	FY 2006	FY 2007
(U)	Previous President's Budget	40.615	15.665	24.922	25.387
(U)	Current PBR/President's Budget	38.950	31.783	24.384	25.597
(U)	Total Adjustments	-1.665	16.118		
(U)	Congressional Program Reductions				
	Congressional Rescissions		-0.282		
	Congressional Increases		16.400		
	Reprogrammings	-0.579			
	SBIR/STTR Transfer	-1.086			
(U)	Significant Program Changes:				

C. Not applicable.

Exhibit R-2a, RDT&E Project Justification

DATE: February 2005

BUDGET ACTIVITY: 05 System Development and Demonstration (SDD)

PE NUMBER AND TITLE: 0605011F RDT&E For Aging Aircraft

PROJECT NUMBER AND TITLE: 4685 Aging Aircraft

Cost ($ in Millions)		FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
4685	Aging Aircraft	38.950	31.783	24.384	25.597	26.149	26.535	27.067	27.425	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

(U) A. Mission Description and Budget Item Justification

This program develops cross-cutting technologies to extend the service life, ensure flight safety, control rapidly rising sustainment costs, and retain the operational capability of the aging aircraft fleet. The program identifies these cross-cutting technologies through detailed business case analyses identifying opportunities to reduce total ownership costs and improve reliability, availability, and maintainability. The program then develops and delivers solutions (to include prototype hardware and software) to address cross-cutting platform deficiencies. The program also analyzes and recommends changes to existing sustainment processes such as field and depot repair processes. Additionally, the program develops and delivers tools to facilitate system/subsystem management, including the sharing of aging aircraft information and knowledge among the Air Logistics Centers, Product Centers, System Program Offices, other Services and government agencies, and industry, as well as providing senior decision makers with a common, comprehensive understanding of program areas such as corrosion, fatigue, wiring, subsystems, etc. Note: In FY 2005, Congress added a total of $16.4 million for the following Congressional Adds: $4.2 million for Academic Center for Aging Aircraft, $1.0 million for Enterprise Availability and Cost Optimization System System, $1.3 million for Fleet Capability Assessment Process, $4.6 million for Aging Landing Gear Life Extension, $1.3 million for Fleet Readiness, $1.0 million for Advanced Aircraft Avionics and Electronics Insertion, $1.3 million for LEAN Depot Engine Repair, and $1.7 million for TER-O Mil-STD-1760 ("Smart") Modification. This program is in Budget Activity 5, System Demonstration and Development since projects/capabilities will be developed in this program and then made available for procurement by already operational systems.

(U) B. Accomplishments/Planned Program ($ in Millions)	FY 2004	FY 2005	FY 2006	FY 2007
(U) MAJOR THRUST: Aging Aircraft Structures Projects. Transitions cross-cutting technologies for aircraft structures to weapon systems, field and depot maintainers, and Air Logistics Center engineers and managers to ensure continued airworthiness, control sustainment cost growth, and improve aircraft availability.	11.057	7.396	13.118	14.318

(U) In FY 2004: Continued corrosion maintenance improvements. Continued to develop and transition corrosion abatement techniques, procedures, and repairs. Expanded the range of available repair technologies for eliminating aircraft structural corrosion. Continued to reduce the cost and man-hours associated with corrosion maintenance actions and minimized aircraft downtime by providing automated corrosion detection technologies. Continued development and integration of software and analytical tools to support corrosion management workload prediction (e.g., environmental exposure models and corrosion damage analyses). Continued work on improved non-destructive inspection techniques, deployment of corrosion and crack detection capabilities, and ongoing evaluation of new and more cost-effective techniques. Continued work to shorten detection time for flaws and damage due to fatigue cracking. Continued to develop and refine the Depot Technology Modernization Plan process and implement this process. Developed and implemented requirements process to identify, validate, and prioritize aging aircraft deficiencies and solutions through coordination with the operational MAJCOMs.

Exhibit R-2a, RDT&E Project Justification		DATE February 2005
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(U) In FY 2005: Identify common requirements and develop implementation strategies for delivery of cross-cutting solutions for aircraft and depots. Focus on maintaining aircraft safety, increasing aircraft readiness, mission capability, and supporting the extension of aircraft service life with decreased operations and support cost (includes Air Vehicle Health Management project). Improve fleet management software tools for Air Logistics Center Aircraft Structural Integrity Program managers by integrating analyses for fatigue and corrosion detection, quantification, and repair analyses to determine effect of current and anticipated damage on structural integrity. Enhance structural analysis and develop advanced software code for structural assessments, damage rate calculations, and predictions. Transition advanced non-destructive inspection capabilities and provide hidden corrosion and sub-layer crack detection, damage quantification, structural degradation monitoring, and data management for predictive analyses. Deliver enhanced hardware for detecting additional forms of corrosion (exfoliation and pitting). Develop technologies to upgrade repair and replacement methodologies. Provide new or improved repair methodologies, material processes, and design and repair selection software. Deliver repair and design analysis software (includes Composite Repair of Aircraft Structures Design and Analysis Software project), freeform fabrication of replacement structural components (includes thermal additive manufacturing project), material substitution guidelines for multi-year delivery, and evaluation of ten year-old composite repair patches to determine if patch bond process adjustments are necessary. Deliver an advanced aircraft corrosion protection system that will transition an environmentally benign, long-life aircraft coating system with chromate-free surface preparation.

(U) In FY 2006: Continue to identify common requirements and develop implementation strategies for delivery of cross-cutting solutions for aircraft sustainment and depots. Focus on maintaining aircraft safety, increasing aircraft readiness, mission capability, and supporting the extension of aircraft service life with decreased operations and support cost. Further improve fleet management software tools for Air Logistics Center Aircraft Structural Integrity Program managers by integrating analyses for fatigue and corrosion detection, quantification, and repair analyses to determine effect of current and anticipated damage on structural integrity. Enhance structural analysis and develop advanced software code for structural assessments, damage rate calculations, and predictions. Continue to transition advanced non-destructive inspection capabilities and provide hidden corrosion and sub-layer crack detection, damage quantification, structural degradation monitoring, and data management for predictive analyses. Develop enhanced capability to inspect for delaminations in metal and composite structures. Develop additional technologies to upgrade repair and replacement methodologies. Continue to provide new or improved repair methodologies, material processes, and design and repair selection software. Enhance fatigue and corrosion prevention and control techniques.

(U) In FY 2007: Continue to identify common requirements and develop implementation strategies for delivery of cross-cutting solutions for aircraft and depots. Focus on maintaining aircraft safety,

Exhibit R-2a, RDT&E Project Justification		DATE February 2005
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increasing aircraft readiness, mission capability, and supporting the extension of aircraft service life with decreased operations and support cost. Further improve fleet management software tools for Air Logistics Center Aircraft Structural Integrity Program managers by integrating analyses for fatigue and corrosion detection, quantification, and repair analyses to determine effect of current and anticipated damage on structural integrity. Continue to enhance structural analysis and develop advanced software code for structural assessments, damage rate calculations, and predictions. Develop non-destructive inspection capabilities, damage quantification, structural degradation, and data management for honeycomb composites. Provide repair methodologies, material processes, and design and repair selection software. Enhance fatigue and corrosion prevention and control techniques.

(U)

(U)	MAJOR THRUST: Aging Aircraft Avionics Projects. Establishes enabling avionics capabilities that can be affordably inserted into the legacy force structure, facilitating a force multiplier combat capability across diverse platforms. Institutionalize Viable Combat Avionics (VCA), the use of affordable tools and techniques, including change management roadmaps, to manage avionics upgrades while keeping pace with technology and prevailing threat conditions in a dynamic environment. Tools range from a Best Value Methodology for evaluation of competitive source selections to a web-based Integrated Change Roadmap process that enables the system program offices to baseline the fielded platforms and merge the upgrades into the program's life cycle planning. Planned investments will establish enabling cross-cutting solutions that can facilitate the affordable insertion of mission enabling capabilities into fielded systems, extending their useful operational life and ensuring their combat superiority.	5.211	5.472	7.858	7.752

(U) In FY 2004: Continued work on technologies to maintain the structural integrity of aging weapon systems to ensure continued flight safety. Continued techniques to incorporate bonded reapirs into legacy air frames.

(U) In FY 2005: Establish the enabling technology to affordably upgrade over 3,000 fielded triple ejection bomb racks (TER-9As) used for gravity munitions carriage, so that they can alternately support precision guided munitions carriage. Planned effort will potentially establish 300 percent increase in smart munitions (1760 connectivity) carriage capabilities over existing bomb racks and avoid imposed aircraft reconfiguration changes that burden flight line personnel. Leveraging upon MIL-STD 1553 databus technology development activities, build flight capable hardware, and perform integration activities to demonstrate the technology/hardware on the F-16 aircraft. Begin updating MIL-STD 1553B. Maximize VCA toolsets through two initiatives: the development of an Integrated Change Roadmap (ICR) cross-cutting tool that identifies the platforms and services that have common avionics upgrade requirements; and the design and development of a functional technology for affected platforms having common requirements. Initiatives will enable the VCA program to advance towards establishing a strategic capabilities investment process, integrating the ICR cross-cutting tool that identifies common

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avionics upgrade requirements with the design and development of comparable enabling capabilities required by diverse platforms. Emphasis will be placed on identifying opportunities to accelerate capability deployment to the warfighter. Planned efforts will link functional technologies and common requirements, establishing integrated investment strategies focused on facilitating reduced cycle-time and expanded mission capability for the same total resources expenditure.

(U) In FY 2006: Develop an affordable F-15 Heads Up Display (HUD) cathode ray tube (CRT) replacement item that can be transparently inserted into fielded assets as part of the normal repair cycle. Planned CRT advancements will eliminate an inherent F-15 failure mode, increasing the incurred CRT mean time between failure rate from under 400 hours to over 3,000 hours, and will be transferable to alternate platforms experiencing marginal HUD CRT reliability performance. Establish an upgraded 1553 chipset, possessing 200 times increased bandwidth capabilities over current 1553 aircraft/munitions interface capabilities. Continue MIL-STD 1553B update activity to define capabilities of 1553 chipset, as well as how to validate and test those capabilities. Planned efforts include first release of extended MIL-STD 1553C. Emphasis will be placed on identifying opportunities to accelerate capability deployment to the warfighter. Maintain the VCA toolsets, enabling the VCA program to continue to advance towards establishing a strategic capabilities investment process. Planned efforts will link functional technologies and common requirements, establishing integrated investment strategies focused on facilitating reduced cycle-time and expanded mission capability for the same total resources expenditure.

(U) In FY 2007: Continue efforts to provide an affordable F-15 HUD CRT replacement item. Planned activities include F-15 flight testing and migration of HUD CRT to another aircraft platform. Provide additional capabilities to extended MIL-STD 1553C. Maintain the VCA toolsets, enabling the VCA program to continue to advance towards establishing a strategic capabilities investment process. Emphasis will be placed on identifying opportunities to accelerate capability deployment to the warfighter. Planned efforts will link functional technologies and common requirements, establishing integrated investment strategies focused on facilitating reduced cycle-time and expanded mission capability for the same total resources expenditure.

(U)

(U)	MAJOR THRUST: Aging Aircraft Subsystems Projects. Extends the service life, controls the rapidly rising sustainment costs, and retains the operational capability of the aging aircraft fleet through aircraft subsystems improvement. Cross-cutting opportunities which will reduce total ownership costs are identified using business case analyses.	2.231	2.347	3.408	3.527

(U) In FY 2004: Completed second year of a two-year project to systematically dissemble the actuators from aging systems and determine wear and damage mechanisms in order to improve reliability in legacy actuators and overall performance in new systems. Evaluated replacement materials identified in the project to increase component life-cycle. Began preliminary research on aircraft fuel systems to identify

Exhibit R-2a, RDT&E Project Justification		DATE February 2005
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warfighter needs and drive technology improvements to both the field and the depot. Continued work on identifying and analyzing aging wiring problems in fighter, cargo, and tanker aircraft fleets to minimize diagnostic and repair time improving aircraft availability. Developed an Air Force Wire Integrity Program to enable early detection and classification of failing aircraft wiring. Enhanced current database system to enable capture of all maintenance actions on aircraft wiring systems. Fostered the development and application of a 'tool set' which addresses the entire set of aging wiring issues, to include circuit analyzers, fault detection and location, safety analysis, automated test generation, and trending capabilities. Provided wiring system awareness training across all maintenance disciplines. Continued to develop viable procedures to correct the delamination of aging integral fuel tank coatings for improved corrosion protection and elimination of wing skin replacements. Continued efforts to evaluate material improvements in crack detection support tools.

(U) In FY 2005: Develop electronic signatures of various aircraft electrical components to monitor changes that signify impending failure, thus allowing for the replacement of components before failure. Provide five production Universal Electrical Signature Analysis Systems to Air Materiel Command, Air Combat Command, and Warner Robins-Air Logistics Center to collect real-time data on operating weapon systems. Provide training and user manuals on the equipment. Continue research and data collection on aircraft fuel systems to identify warfighter needs and drive technology improvements to both the field and the depot. Integrate the Air Force Wire Integrity Program (AFWIP) web-based data collection system with the Air Force Knowledge database system. Formally integrate the AFWIP wire awareness computer-based training to field units. Develop wire troubleshooting fault isolation process procedures and incorporate in general series technical manual. Spiral-develop validated wiring diagnostic equipment to meet the demands of the maintenance community.

(U) In FY 2006: Provide solutions to high maintenance man-hour items identified in FY 2004/2005 fuel systems research and data collection. Continue demonstration and development of wiring diagnostic equipment and data collection effort. Perform initial aircraft wire characterization evaluation of conductive path material, insulation, and arc fault protection systems.

(U) In FY 2007: Continue to provide solutions to high maintenance man-hour items identified in FY 2004/2005 fuel systems research and data collection. Continue demonstration and development of wiring diagnostic equipment and data collection effort. Perform initial aircraft wire characterization evaluation of conductive path material, insulation, and arc fault protection systems.

(U)

(U)	MAJOR THRUST: Enterprise Knowledge Management. Utilizes and enhances the advanced collaborative tools embedded in the Enterprise Knowledge Management (EKM) program. Facilitates the extraction, integration, and sharing of aging aircraft information, knowledge, technology, and solutions among Air Logistics Centers, Product Centers, System Program Offices, other Services and government	4.101	0.312	0.000	0.000

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agencies, and industry. Provides a knowledge capture/management system with collaboration capability for understanding the overall scope of aging aircraft problems, developing an integrated strategic plan for corrective actions, and using decision tools for the aging aircraft fleet. Supports the Capabilities Review and Risk Assessment in identifying and resolving capability gaps by capturing and automating the Roadmap Integration processes used by the Aeronautical, Air Armament, command and control, and space enterprises. Provides participants the ability to quickly see the impact of funding decisions on warfighting capability. Development completes after FY 2004 and EKM management transitions to fee for service.

(U) In FY 2004: Continued to develop partnerships with government and commercial industry to foster shared technologies and processes and an information/knowledge portal tool to share aging aircraft technology and solutions across the aeronautical community. Continued identifying existing databases which contain aging aircraft information and continued connecting them to a single web portal. Continued web-based data mining views that turn the raw data into information to facilitate strategic planning and trend analysis for reducing total ownership costs. Continued to leverage knowledge of existing/legacy avionics issues (diminishing manufacturing sources, software languages, unique military interfaces, etc.). Analyzed the gathered data and initiated/continued cross-cutting solutions in data acquisition/recorders, displays, expanded aircraft internal data transfer techniques, and other similar efforts. Developed business strategies to address aging aircraft subsystem issues. Performed business case analyses to support subsystem design integrity decisions. Developed a suite of analysis tools for predicting imminent failure of aircraft systems. Developed an analysis tool to support diminishing manufacturing source issues and analysis, identification, and management of cross-cutting issues. Developed a data mining tool specifically designed to extract and analyze cross-cutting issues data from existing data systems. Fostered cross program sharing of information within both Department of Defense and industry.

(U) In FY 2005: Facilitate transition of EKM to fee for service.

(U) In FY 2006: Not Applicable.

(U) In FY 2007: Not Applicable.

(U)

(U)	CONGRESSIONAL ADD: Advanced Technology into Legacy Avionics Systems.	1.935	0.000	0.000	0.000

(U) In FY 2004: Affordable aerospace weapon systems require avionics possessing inherent features that can affordably accommodate change and rapidly exploit emerging technology opportunities. Established: software verification and re-verification methods and tools; methodologies and capabilities that facilitated tighter coupling with commercial practices, processes, and technology, thus reducing incurred avionics cycle upgrade times; and leading edge "design for change" capabilities and tools that helped facilitate long-term avionics viability.

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(U)	In FY 2005: Not Applicable.				
(U)	In FY 2006: Not Applicable.				
(U)	In FY 2007: Not Applicable				
(U)					
(U)	CONGRESSIONAL ADD: Aging Landing Gear Life Extension.	1.451	4.562	0.000	0.000
(U)	In FY 2004: Continued to integrate elements of emerging materials/technologies, improved designs, state-of-the-art repair/overhaul techniques, and optimized business/data processes for the purpose of extending the life of aging landing gear systems. The program provides a comprehensive and systematic approach to resolving technical and logistical landing gear concerns, addressing everything from technology exploration to solution implementation. In order of importance, emphasis was placed on improving mission safety, improving reliability and maintainability, and reducing cost of sustainment.				
(U)	In FY 2005: Continue to integrate the elements of emerging materials/technologies, improved designs, state-of-the-art repair/overhaul technologies, and optimized business data processes for the purpose of extending the life of aging landing gear systems.				
(U)	In FY 2006: Not Applicable.				
(U)	In FY 2007: Not Applicable.				
(U)					
(U)	CONGRESSIONAL ADD: Academic Center for Aging Aircraft (ACAA).	4.063	4.163	0.000	0.000
(U)	In FY 2004: Established an academic center to transition and leverage research in academia to satisfy the Aging Aircraft needs identified by the Joint Council on Aging Aircraft. ACAA facilitates new partnerships with agencies and organizations to work aging fleet needs. This effort: 1) catalyzed the development of a self-sustaining infrastructure and academic network, which will serve the aging aircraft community in the future, and 2) focused on delivery of products in narrow problem areas, which act as pilot programs to exercise and prove out the infrastructure and methodologies established by the ACAA institutions.				
(U)	In FY 2005: Continue to facilitate new partnerships with agencies and organizations to work aging fleet needs; focusing on delivery of products in narrow problem areas, providing the greatest benefit to the joint community, and which act as pilot programs to exercise and prove out the infrastructure and methodologies established by the Academic Center for Aging Aircraft institutions.				
(U)	In FY 2006: Not Applicable.				
(U)	In FY 2007: Not Applicable.				
(U)					
(U)	CONGRESSIONAL ADD: Enterprise Availability and Cost Optimization System.	1.161	0.991	0.000	0.000
(U)	In FY 2004: Implemented a standardized approach to identifying and optimizing aircraft modernization and sustainment program investments with the Enterprise Availability and Cost Optimization System;				

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focused on investment plans for the modernization and sustainment of the aging aircraft fleet.

(U) In FY 2005: Provide warfighter aging aircraft availability and investment optimization tools for C-130 fleet and Air Combat Command cross-fleet modernization and sustainment.

(U) In FY 2006: Not Applicable.

(U) In FY 2007: Not Applicable.

(U)

(U) CONGRESSIONAL ADD: Fleet Capability Assessment Process.	1.935	1.288	0.000	0.000

(U) In FY 2004: Developed methodology to assess the current, programmed, and planned capabilities of the aeronautical fleet. The assessment provides information on current problem areas, future aging issues, and cross-cutting opportunities that support modernization and sustainment planning within the aeronautical enterprise. The tool determines the risks in effectiveness, availability, deployability, sustainability, and readiness of the aeronautical fleet, and assesses impacts on planned or proposed operations.

(U) In FY 2005: Determine the risks in effectiveness, availability, deployability, sustainability, and readiness of the aeronautical fleet. Provide rapid impact assessments on planned or proposed operations.

(U) In FY 2006: Not Applicable.

(U) In FY 2007: Not Applicable.

(U)

(U) CONGRESSIONAL ADD: Fleet Readiness (referred to as Air Vehicle Health Management Improved Fleet Readiness in FY 2004).	5.805	1.288	0.000	0.000

(U) In FY 2004: Improvements to fleet readiness were made in the areas of fleet management/structural analysis, non-destructive inspection and health management, prevention, and repair/replacement by: 1) enhancing risk assessment capability for the fleet; 2) evaluating state-of-the-art non-destructive inspection equipment for assessment of damage in buried structure; 3) evaluating environmentally-friendly coating systems; 4) and assessing/utilizing modern design practices for depot implementation on legacy aircraft.

(U) In FY 2005: Pursue additional improvements to fleet readiness in the areas of fleet management/structural analysis, non-destructive evaluation and health management, prevention, and repair/replacement by: enhanced structural analysis of aircraft center wing box structure, corrosion measurements on aircraft structural materials, non-destructive inspection of aircraft structural components, and pursuing the next transition spiral in the use of 3-D based electronic work instructions to reduce manufacturing operation down time at the depot and/or flight line. Plan is to transition 3-D technology to an additional weapon system/depot (KC-135/Oklahoma City-Air Logistics Center).

(U) In FY 2006: Not Applicable.

(U) In FY 2007: Not Applicable.

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(U)					
(U)	CONGRESSIONAL ADD: LEAN Depot Engine Repair.	0.000	1.288	0.000	0.000
(U)	In FY 2004: Not Applicable.				
(U)	In FY 2005: Pursue improvements to reduce man-hours and increase production throughput on turbine engines to include prototyping engine fuel nozzle cleaning and testing equipment in the engine overhaul facilities at Oklahoma City-Air Logistics Center.				
(U)	In FY 2006: Not Applicable.				
(U)	In FY 2007: Not Applicable.				
(U)					
(U)	CONGRESSIONAL ADD: TER-O MIL-STD-1760 ("SMART") Modification.	0.000	1.685	0.000	0.000
(U)	In FY 2004: Not Applicable.				
(U)	In FY 2005: Pursue modification of existing conventional Triple Ejection Rack (TER) to allow delivery of both conventional and smart weapons. Modification will potentially provide each weapon station with increased smart weapon load capability over standard pylon carry.				
(U)	In FY 2006: Not Applicable.				
(U)	In FY 2007: Not Applicable.				
(U)					
(U)	CONGRESSIONAL ADD: Advanced Aircraft Avionics and Electronics Insertion.	0.000	0.991	0.000	0.000
(U)	In FY 2004: Not Applicable.				
(U)	In FY 2005: Identify, analyze, and demonstrate the use of advanced avionics thermal management technology from diverse military and commercial derivative aircraft. Conduct an architecture definition study focused on establishing an infrastructure that is easily integrated with existing airframe technology and supports long-term commercial technology compatibility and growth. Establish qualification testing requirements.				
(U)	In FY 2006: Not Applicable.				
(U)	In FY 2007: Not Applicable.				
(U)					
(U)	Total Cost	38.950	31.783	24.384	25.597

(U) C. Other Program Funding Summary ($ in Millions)

	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
(U) Related Activities:										
(U) PE 0708026F, Productivity, Reliability, Availability,										

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(U) C. Other Program Funding Summary ($ in Millions)

Maintainability.

(U) D. Acquisition Strategy

Funding may be executed internally within the Agile Combat Support Wing via full and open competition or released to other organizations for projects for which they are the Office of Primary Responsibility (OPR). The OPRs will determine the most appropriate contract vehicle, Design and Engineering Support Program (DESP) contract or full and open competition, to accomplish the project.

Exhibit R-3, RDT&E Project Cost Analysis

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(U) Cost Categories (Tailor to WBS, or System/Item Requirements) ($ in Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2004 Cost	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
(U) Product Development														
S&K Technologies, Inc.	IDIQ			6.979		6.164							13.143	
Batelle/Ball	CPFF			4.101									4.101	
Edgewater	FFP			1.760		2.000							3.760	
AMETEK/Eaton	FFP			0.500									0.500	
ITB	FFP			0.500									0.500	
Oak Ridge National Lab	N/A (Govt Lab)			0.440		0.125							0.565	
Info Spectrum Systems	Cost Plus			0.693		0.716							1.409	
S&K Technologies, Inc. (here on down are Congressional Adds)	IDIQ			5.283		1.183							6.466	
Alion Science & Tech	T&M			1.761		1.465							3.226	
Northrop Grumman IT	T&M			1.057		0.910							1.967	
EDAptive Computing Inc.	CPFF			1.761									1.761	
UDRI/GTRI/TAMUS	DESP			3.697		3.822							7.519	
General Atomics	T&M			1.271		4.186							5.457	
Numerous	Various			9.147		11.212		24.384	Sep-06	25.597	Sep-07		70.340	
Subtotal Product Development			0.000	38.950		31.783		24.384		25.597		0.000	120.714	0.000
Remarks:														
(U) Support														
In House													0.000	
None													0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000
Remarks:														
(U) Test & Evaluation														
None													0.000	
Subtotal Test & Evaluation			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000
Remarks:														
(U) Management														
													0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000
Remarks:														
(U) Total Cost			0.000	38.950		31.783		24.384		25.597		0.000	120.714	0.000

Exhibit R-4, RDT&E Schedule Profile		DATE February 2005
BUDGET ACTIVITY 05 System Development and Demonstration (SDD)	PE NUMBER AND TITLE 0605011F RDT&E For Aging Aircraft	PROJECT NUMBER AND TITLE 4685 Aging Aircraft

Aging Aircraft Schedule

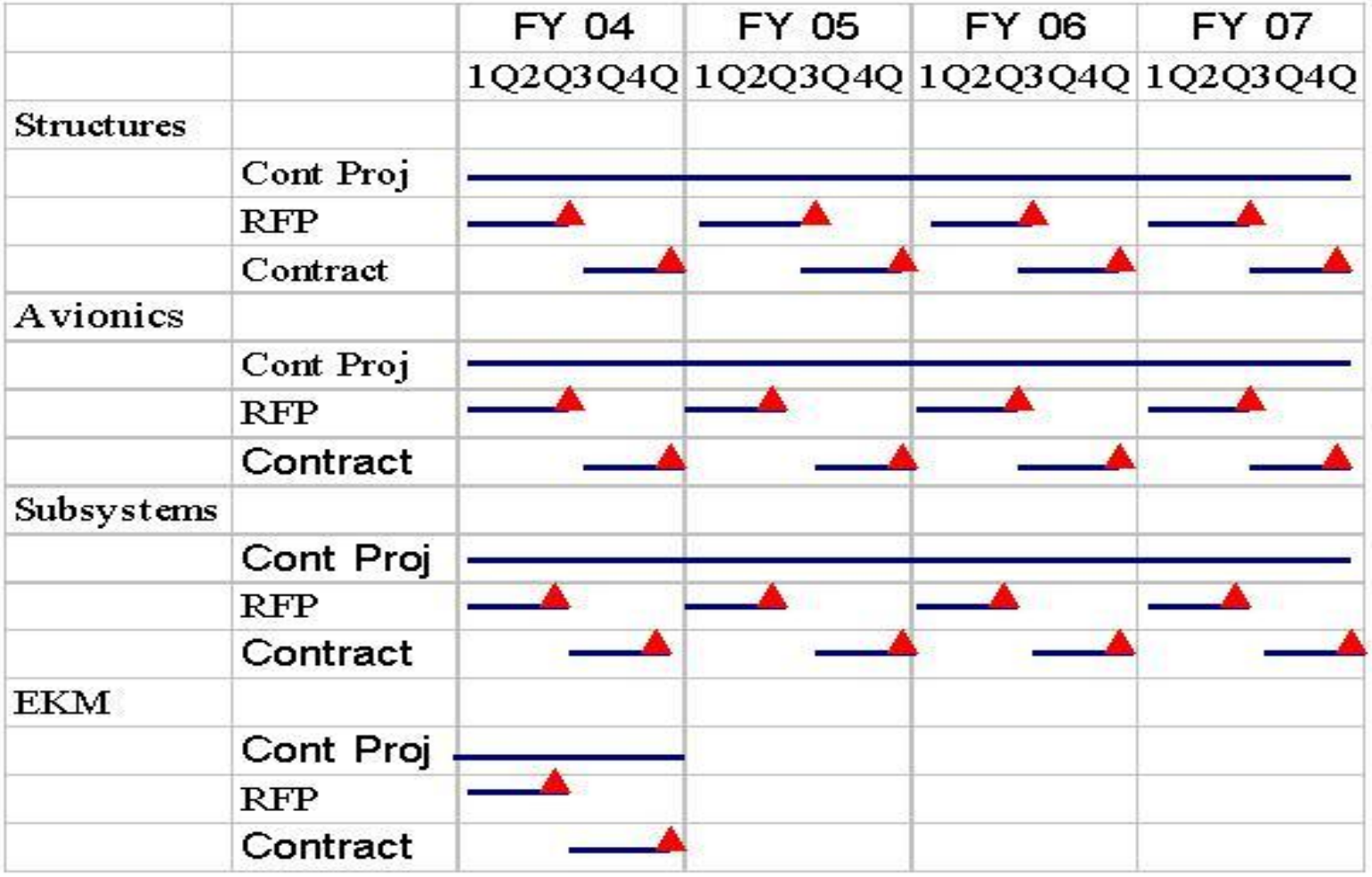

Exhibit R-4a, RDT&E Schedule Detail			DATE: February 2005
BUDGET ACTIVITY: 05 System Development and Demonstration (SDD)	PE NUMBER AND TITLE: 0605011F RDT&E For Aging Aircraft	PROJECT NUMBER AND TITLE: 4685 Aging Aircraft	

(U) Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007
(U) Aging Aircraft Structures Projects	1-4Q	1-4Q	1-4Q	1-4Q
(U) Request for Proposal Release	1-2Q	1-2Q	1-2Q	1-2Q
(U) Contract Award	3-4Q	3-4Q	3-4Q	3-4Q
(U) Aging Aircraft Avionics Projects	1-4Q	1-4Q	1-4Q	1-4Q
(U) Request for Proposal Release	1-2Q	1-2Q	1-2Q	1-2Q
(U) Contract Award	3-4Q	3-4Q	3-4Q	3-4Q
(U) Aging Aircraft Subsystems Projects	1-4Q	1-4Q	1-4Q	1-4Q
(U) Request for Proposal Release	1-2Q	1-2Q	1-2Q	1-2Q
(U) Contract Award	3-4Q	3-4Q	3-4Q	3-4Q
(U) Enterprise Knowledge Management	1-4Q			
(U) Request for Proposal Release	1-2Q			
(U) Contract Award	3-4Q			