RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE: June 2001

BUDGET ACTIVITY: 07 - Operational System Development

PE NUMBER AND TITLE: 0708026F Productivity, Reliability, Availability, Maintainability Program

PROJECT: 2146

COST ($ in Thousands)		FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
2146	PRAM	22,108	21,032	20,689	24,108	27,537	30,983	31,609	32,280	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

Note: FY 2003-FY 2007 budget numbers do not reflect the DoD strategy review results.

(U) A. Mission Description

This program emphasizes the rapid incorporation of reliability and maintainability (R&M) technology 'fixes' that will improve the operational capability of weapon systems and equipment at a significantly lower cost. Productivity, Reliability, Availability, Maintainability (PRAM) accomplishes this by utilizing existing off-the-shelf and emerging technologies and adapting them to specific Air Force and joint-Service weapon systems and processes to solve near-term deficiencies. It relies on Major Command and field support to implement the adapted-technology when the initial investment is complete. It is a key tool for reducing the total ownership cost of fielded systems and supporting infrastructure. Average project length is twenty-seven months. PRAM currently provides services to all four Air Force Materiel Command centers: Aeronautical Systems Center; Electronic Systems Center; Space and Missile Systems Center; and Air Armament Center, as well as the Air Logistics Centers.

(U) FY 2000 ($ in Thousands)

(U)	$6,412	Initiated subsystem R&M projects that reduce the overall maintenance burden, improve subsystem capabilities and reliability, and improve mission readiness. Included a Turbine Engine Disk Stress effort to measure in-service disks during repair/overhaul to track the onset of low cycle fatigue damage on an individual disk basis, creating the ability to predict remaining life and providing an engineering basis for service life extension.
(U)	$463	Continued airframe R&M efforts to reduce overall Air Force operations and support costs.
(U)	$1,550	Continued efforts for aerospace support equipment and base infrastructure R&M enhancements to increase equipment reliability, to include a programmable circuit card project that provides the ability to create a replacement of failed circuit cards wherever needed for most applications.
(U)	$6,000	Started and completed tasks on Lean Blade Repair at Oklahoma City Air Logistics Center.
(U)	$7,000	Started and completed additional tasks on Aging Landing Gear Life Extension.
(U)	$683	Continued high priority, quick response R&M projects identified by the operational commands to reduce maintenance downtime.
(U)	$22,108	Total

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(U) A. Mission Description Continued

(U) FY 2001 ($ in Thousands)

(U)	$5,613	Reduce the overall maintenance burden, improve capabilities and reliability, and improve mission readiness of aircraft subsystems. Reduce cost by enhancing engine trending and diagnostic systems. While current systems sound an alarm when a threshold is breached, adverse trends are not diagnosed. Applying artificial intelligence, statistical analysis, and reasoning tools will enable appropriate corrective action to be taken when an adverse trend is detected and diagnosed. Continue the ongoing project to lower engine support costs by developing new engine oil analysis techniques that will identify all wear modes during the life of an engine.
(U)	$2,000	Address the reliability and maintainability (R&M) issues that drive airframe operations and support (O&S) costs. Develop protective coatings and application techniques to eliminate ice accumulation on the B-1B inlet, eliminate this flight safety risk, and reduce maintenance costs.
(U)	$3,890	Reduce maintenance costs and increase weapon systems availability by aggressively addressing shortfalls in support equipment and base infrastructure. Overcome parts obsolescence with current electronic warfare equipment test consoles by developing a single configuration test station to service both the ALQ-131 and ALQ-184 electronic attack pods used on the F-16, F-15, A-10, and C-130. Address the number one reliability driver for the Low Altitude Navigation and Targeting Infrared for Night pod by developing a test capability that will detect marginal performance and predict repairability of the Traveling Wave Tube before it is sent to the repair vendor.
(U)	$3,000	Continue R&M efforts that directly support military space and missile systems, including leveraging commercial-off-the-shelf technology to replace the Constellation Control System and reduce MILSATCOM O&S costs. Initiate a program to procure prototypes and perform qualification testing for the Peacekeeper electronics battery.
(U)	$529	Initiate high priority, quick response R&M projects identified by the operational commands to reduce maintenance downtime. These quick response issues are identified throughout the year. The Productivity, Reliability, Availability, and Maintainability (PRAM) effort is typically completed in a month or less.
(U)	$6,000	Develop and implement a lean manufacturing approach for propulsion repair at Oklahoma City Air Logistics Center. Develop a real-time management information system to support the change over from functional shops to business units and product lines.
(U)	$21,032	Total

(U) FY 2002 ($ in Thousands)

(U)	$2,530	Complete the existing Productivity, Reliability, Availability, and Maintainability (PRAM) projects that are designed to reduce total ownership cost of Air Force aging aircraft such as: overcoming parts obsolescence in test equipment for electronic warfare systems; prototyping coatings and lubricants to prevent corrosion on support equipment and electrical terminals; and developing more efficient means of publishing technical data. Initiate new crosscutting projects designed to address the key issues identified within the Aging Aircraft System Program Office.

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(U) A. Mission Description Continued

(U) FY 2002 ($ in Thousands) Continued

(U) $12,084 Initiate airframe, subsystem, and space reliability and maintainability (R&M) efforts that reduce the overall maintenance burden, improve capabilities and reliability, and improve mission readiness. These efforts will be focused on reducing overall Air Force O&S costs.

(U) $4,162 Continue existing aging aircraft efforts that will reduce overall Air Force operations and support (O&S) cost and increase aircraft availability, while maintaining operational capability.

(U) $1,913 Complete the existing efforts to address reduced O&S costs within the air armaments enterprise. Complete development of a non-destructive test protocol that duplicates actual flight conditions for Precision-Guided Munitions and Cruise Missiles.

(U) $20,689 Total

(U) B. Budget Activity Justification

This program is in Budget Activity 7, Operational System Development, because it provides support to systems in operational use.

(U) C. Program Change Summary ($ in Thousands)

	FY 2000	FY 2001	FY 2002	Total Cost
(U) Previous President's Budget (FY 2001 PBR)	22,075	15,227	20,741	
(U) Appropriated Value	22,382	21,227		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions				
b. Small Business Innovative Research				
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram				
e. Rescissions	-274	-195		
(U) Adjustments to Budget Years Since FY 2001 PBR			-52	
(U) Current Budget Submit/FY 2002 PBR	22,108	21,032	20,689	TBD

(U) Significant Program Changes:

Not Applicable.

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(U) D. Other Program Funding Summary ($ in Thousands)

	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
(U) AF RDT&E										
(U) Other APPN										

(U) Related Activities:

(U) PE 0605011F, RDT&E for Aging Aircraft.

(U) E. Acquisition Strategy

All projects within this Program Element are awarded competitively, either by full and open competition, or by amending task order contracts with competition for subcontracts.

(U) F. Schedule Profile

	FY 2000				FY 2001				FY 2002			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Blade Repair Contract Award		*								X		
(U) Request For Proposal Release	X	X			X	X			X	X		
(U) Contract Awards	*	*	*		*	*	*		X	X	X	

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

DATE: June 2001

BUDGET ACTIVITY: 07 - Operational System Development

PE NUMBER AND TITLE: 0708026F Productivity, Reliability, Availability, Maintainability Program

PROJECT: 2146

(U) A. Project Cost Breakdown ($ in Thousands)

		FY 2000	FY 2001	FY 2002
(U)	Subsystem Reliability and Maintainability (R&M)	6,412	5,613	2,530
(U)	Airframe R&M	463	2,000	12,084
(U)	Aero Support Equipment and Base Infrastructure R&M	1,550	3,890	4,162
(U)	Space and Missile Systems Reliability	0	3,000	1,913
(U)	Blade Tip Repair Project	6,000	6,000	0
(U)	Quick Response R&M	683	529	0
(U)	Aging Landing Gear Life Extension	7,000	0	0
(U)	Total	22,108	21,032	20,689

(U) B. Budget Acquisition History and Planning Information ($ in Thousands)

(U) Performing Organizations:

Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 2000	Budget FY 2000	Budget FY 2001	Budget FY 2002	Budget to Complete	Total Program
Product Development Organizations										
Numerous	Various	Various	N/A	N/A	3,028	4,639	8,721	15,050	Continuing	TBD
General Atomics	Various	Various	N/A	N/A	9,903	13,000	6,770	1,100	0	30,773
Lockheed Martin	Various	Various	N/A	N/A	510	241	1,500	1,500	0	3,751
ARINC	T&M	Feb 01	N/A	N/A	1,750	2,796	1,546	0	0	6,092
Innovative Technology	T&M	Feb 01	N/A	N/A	0	555	558	0	0	1,113
Battelle	T&M	Feb 01	N/A	N/A	0	0	150	150	0	300
MITRE	T&M	Jan 01	N/A	N/A	0	877	300	0	0	1,177
Lockheed Sanders	T&M	Mar 01	N/A	N/A	0	0	900	550	0	1,450
Southwest Research	T&M	Mar 01	N/A	N/A	0	0	587	2,339	828	3,754
Support and Management Organizations										
In-house support										

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)

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(U) Performing Organizations Continued:

Test and Evaluation Organizations

(U) Government Furnished Property:

Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 2000	Budget FY 2000	Budget FY 2001	Budget FY 2002	Budget to Complete	Total Program
Product Development Property									
None									
Support and Management Property									
None									
Test and Evaluation Property									
None									

Subtotals	Total Prior to FY 2000	Budget FY 2000	Budget FY 2001	Budget FY 2002	Budget to Complete	Total Program
Subtotal Product Development	15,191	22,108	21,032	20,689	TBD	TBD
Subtotal Support and Management						
Subtotal Test and Evaluation						
Total Project	15,191	22,108	21,032	20,689	TBD	TBD