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

Exhibit R-2, RDT&E Budget Item Justification								DATE	DATE February 2004		
BUDO 07 O	ET ACTIVITY perational System Development			P 0	E NUMBER AND	TITLE ductivity, Re	liability, Avai	lability, Main	tainability Pr	ogram	
	Cost (\$ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to	Total	
	Cost (\$ III WIIIIolis)	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Complete		
	Total Program Element (PE) Cost	9.154	8.924	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
2146	PRAM	9.154	8.924	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Note (U) (U) (U) (U) (U) (U) (U)	Program was terminated in FY 2004 due to A. Mission Description and Budget Item This program emphasizes the rapid incorp and equipment at a significantly lower cose emerging technologies and adapting them Command and field support to implement fielded systems and supporting infrastruct centers as well as the Air Force Space Con Oklahoma City Air Logistics Center and \$ This program is in Budget Activity 7, Ope B. Program Change Summary (\$ in Mil Previous President's Budget Current PBR/President's Budget Total Adjustments Congressional Program Reductions Congressional Increases Reprogrammings SBIR/STTR Transfer <u>Significant Program Changes:</u> Program funding was reduced due to higher State State	to higher Air Fo n Justification oration of relia st. Productivity to specific Air the adapted-tec ure. Average p mmand Space a 52.1 million for erational System lions) er priority Air F	orce priorities. bility and main , Reliability, A Force and joint chnology when roject length is nd Missile Sys Aircraft Turbin n Development	tainability (R& vailability, Mai t-Service weapo the initial inve twenty-seven in tems Center. N ne Engine Susta , because it pro	EM) technology intainability (P on systems and stment is comp months. PRAN ote: In FY 200 ainment.	'fixes' that wil RAM) accomp processes to so lete. PRAM is I currently pro 3, Congress ad o systems in op	l improve the o lishes this by u olve near-term o a key tool for r vides services t ded \$2.8 millio perational use. <u>FY 2003</u> 9.512 9.154 -0.358	perational capa tilizing existing deficiencies. It reducing the tot to all three Air n for Modeling <u>FY</u> 0 8 8 9	ability of weapo g off-the-shelf a t relies on Majo cal ownership or Force Material t/ Re-engineerin 2004 0.000 3.924 3.924 0.076 0.000	on systems and or ost of Command ng for <u>FY 2005</u> 0.000 0.000	
			R-1 Sho	pping List - Item	No. 220-2 of 220	-8			Exhibit R-2 (PE 0708026F)	
	1997										

	Fxt	nibit R-2a		piect Justif	ication				DATE			
BUD								PROJECT				
07 (Derational System Development			0 /	708026F Pro Availability, M	ductivity, Rel laintainability	liability, / Program	2146 PRAM				
	Cost (\$ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 20	009	Cost to	Total	
	Cost (\$ in Minions)	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estim	ate	Complete		
214	6 PRAM	9.154	8.924	0.000	0.000	0.000	0.000	(0.000	0.000	0.000	
	Quantity of RDT&E Articles		0	0	0	0	0		0			
(U) (U)	 (U) A. Mission Description and Budget Item Justification 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. PRAM 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 three Air Force Material Command centers as well as the Air Force Space Command Space and Missile Systems Center. Note: In FY 2003, Congress added \$2.8 million for Modeling/ Re-engineering for Oklahoma City Air Logistics Center and \$2.1 million for Aircraft Turbine Engine Sustainment. This program is in Budget Activity 7, Operational System Development, because it provides support to systems in operational use. 								on systems ind r ost of Command ng for <u>FY 2005</u>			
(U)	U)B. Accomplishments/Planned Program (\$ in Millions)FY 2003FY 2004FY 2005(U)MAJOR THRUST: The Productivity, Reliability, Availability and Maintainability (PRAM) program facilitates transitioning of technologies to improve reliability and maintainability of fielded systems. The program accomplishes this by utilizing existing off-the-shelf and emerging technologies and adapting them to specific systems.FY 2003FY 2004FY 2005(U)In FY 2003: Completed previous year subsystem Productivity, Reliability, Availability and Maintainability (PRAM) projects to reduce total ownership costs of Air Force systems such as: combining the attributes of three types of support equipment; transitioning commercial off-the-shelf equipment to the F-16 aircraft; developing a powder coating technique that is applicable to various systems; and transitioning new materials that present an improved strength-to-weight ratio resulting in greater payloads for both space and aircraft missions. Completed airframe, subsystem, life support, and space reliability and maintainability (R&M) efforts that reduce operations and support (O&S) costs by reducing the overall maintenance burden, improving capabilities, reliability, and missile systems reliability efforts to reduce Air Force O&M costs. Expanded the current base infrastructure R&M tracking method for contingency data associated with system usage/configuration, premature failures, cost, and supply. Completed development of improved efficiency air compressor. Completed the existing space and missile systems reliability efforts to reduce Air Force O&S costs within the air armaments enterprise. Completed development of a non-destructive test protocol that duplicates actual flight conditions for precision-guided munitions and cruise missiles. Transitioned technology to improve R&M of munitions handling systems. Deve											
Pro	ject 2146		R-1 Sho	opping List - Item	No. 220-3 of 220)-8				Exhibit R-2a (F	PE 0708026F)	

Exhibit R-2a, RDT&E Project Justifi	DATE February 2	004		
BUDGET ACTIVITY PE 07 Operational System Development 07 A A	E NUMBER AND TITLE 708026F Productivity, Reliability, vailability, Maintainability Program	PROJEC 2146 P	T NUMBER AND TITLE	
 completed Aircraft Turbine Engine Sustainment. (U) In FY 2004: Not Applicable. (U) In FY 2005: Not Applicable. (U) (U) CONGRESSIONAL ADD: Turbine Engine Sustainment Initiative. (U) In FY 2003: Continued to develop non-destructive inspection technology to identify eml engine components. (U) In FY 2004: Complete the multi-year, multi-task effort to develop non-destructive inspective inspective inspective inspective (U) In FY 2005: Not Applicable. (U) In FY 2005: Not Applicable. 	bedded defects in turbine action tools to identify on.	2.683	3.470	0.000
 (U) IN FY 2003: Not Applicable. (U) CONGRESSIONAL ADD: Modeling and Re-engineering at Oklahoma City Air Logisti (U) In FY 2003: Completed a multi-year, multi-task effort to install lean production cells to increase production throughput on turbine engines. (U) In FY 2004: Not Applicable. (U) In FY 2005: Not Applicable. 	ics Center. reduce man-hours and	2.012	0.000	0.000
 (U) (U) CONGRESSIONAL ADD: Lean Depot Engine Repair (LEADER). (U) In FY 2003: Not Applicable. (U) In FY 2004: Continue the multi-year, multi-task effort to install lean production cells to increase production throughput on turbine engines. (U) In FY 2005: Not Applicable. 	reduce man-hours and	0.000	4.462	0.000
 (U) CONGRESSIONAL ADD: Inspection Technology for Turbine Engines. (U) In FY 2003: Not Applicable. (U) In FY 2004: Complete the multi-year, multi-task effort to develop non-destructive inspe embedded defects in turbine engine components and deliver the prototype system for eva (U) In FX 2005: Not Applicable 	ection tools to identify aluation.	0.000	0.992	0.000
(U) Total Cost		9.154	8.924	0.000
Project 2146 R-1 Shopping List - Item I	No. 220-4 of 220-8		Exhibit R-2a (PE	0708026F)

Exhibit R-2a, RDT&E Project Justification								February	2004
BUDGET ACTIVITY 07 Operational System De	PE NUMBER AND TITLE PROJE 0708026F Productivity, Reliability, Availability, Maintainability Program				BER AND TITLE				
(U) <u>C. Other Program Fun</u>	nding Summary (\$ in Milli	<u>ons)</u>							
 (U) AF RDT&E (U) Other APPN (U) Related Activities: (U) PE 0605011F, RDT 	<u>FY 2003</u> <u>Actual</u> Γ&E for Aging Aircraft.	<u>FY 2004</u> <u>Estimate</u>	<u>FY 2005</u> <u>Estimate</u>	<u>FY 2006</u> <u>Estimate</u>	<u>FY 2007</u> <u>Estimate</u>	<u>FY 2008</u> <u>Estimate</u>	<u>FY 2009</u> <u>Estimate</u>	<u>Cost to</u> <u>Complete</u>	<u>Total Cost</u>
(U) D. Acquisition Strateg All projects within this subcontracts.	¥ Program Element are award	led competitivel	y, either by full	and open compe	tition, or by ame	ending task ord	er contracts wit	h competition fo	DL

Exhibit R-3, RDT&E Project Cost Analysis							DATE	DATE February 2004				
BUDGET ACTIVITY 07 Operational System Development			PE NUMBE 0708026 Availabil	R AND T F Produ ity, Ma	ITLE Ictivity, intainab	Reliab oility Pr	ility, ogram	PROJE 2146	CT NUME PRAM	BER AND TIT	LE	
(U) Cost Categories	Contract Method	Performing Activity &	Total	<u>FY</u>	<u>FY</u>	<u>FY</u>	<u>FY</u>	<u>FY</u>	<u>FY</u>	Cost to	<u>Total</u>	<u>Target</u>
(Tailor to WBS, or System/Item	<u>& Type</u>	Location	Prior to FY	<u>2003</u>	<u>2003</u>	<u>2004</u>	<u>2004</u>	<u>2005</u>	<u>2005</u>	Complete	<u>Cost</u>	Value of
Requirements)			<u>2003</u>	<u>Cost</u>	Award	<u>Cost</u>	<u>Award</u>	<u>Cost</u>	<u>Award</u>			Contract
(\$ in Millions)			<u>Cost</u>		<u>Date</u>		Date		<u>Date</u>			
(U) Product Development												
Numerous	Various		3.028	2.909		8.924				0.000	14.861	
General Atomics	Various		9.903	4.267						0.000	14.170	
Lockheed Martin	Various		0.510							0.000	0.510	
ARINC	T&M		1.750							0.000	1.750	
Battelle	T&M		0.000							0.000	0.000	
Lockheed Sanders	T&M		0.000							0.000	0.000	
Southwest Research	T&M		0.000							0.000	0.000	
CACI	T&M		0.000	0.100						0.000	0.100	
NCI Information Systems	T&M		0.000							0.000	0.000	
General Dynamics	TBD		0.000	0.600						0.000	0.600	
None											0.000	
Subtotal Product Development			15,191	7.876		8.924		0.000		0.000	31.991	0.000
Remarks:												
(I) Support												
UDRI	TDB		0.000								0.000	
In-house support	IDD		0.000								0.000	
None											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Bomarka:			0.000	0.000		0.000		0.000		0.000	0.000	0.000
(L) Test & Evaluation												
(U) <u>Test & Evaluation</u>											0.000	
None Subtotal Test & Evaluation			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Bemerke			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) <u>Management</u>				1 070							1 070	
			0.000	1.278		0.000		0.000		0.000	1.278	0.000
Subtotal Management			0.000	1.278		0.000		0.000		0.000	1.278	0.000
Kemarks:			15 101	0.154		0.02.		0.000		0.000	22.262	0.000
(U) Total Cost			15.191	9.154		8.924		0.000		0.000	33.269	0.000
Project 2146		R-1 Shopping List -	tem No. 220-6	of 220-8						Exhibit R	-3 (PE 07	08026F)
		2	2001									

Exhibit R-4, RI	DATE February 2004	
BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0708026F Productivity, Reliability, Availability, Maintainability Program	PROJECT NUMBER AND TITLE 2146 PRAM
PR	AM Schedule	82
2002		2005
		$\Delta \Lambda = \Delta \Lambda$
Automated Form F Generator - F-15 F117 A-10		~~~~~
Automated Form F B-2 Acft	<u> </u>	^
Long Term Health Monitoring System	:	<u>_</u>
Revolutionary Technology - Efficient Air Compre:		
IAIS Based Common Elect. Attack Pod SE	\ \ \ \	
Operational Ground Test for Munitions		
EW Missile Model Product/Correction		
Avionics Electronics Lubricant Process	<u>\</u>	
System Reliability / Maintainability Upgrade (USN		
Universal 20MM Ammunition Replenisher		
Air Crew Anti-exposure Suits	A	
Air Crew Survival Vests	: A	
Optical System Fault Management (ABL)		
Propeller Balancing		
On-Board Vibration Monitoring System	<u></u>	Λ
Aging Propulsion Systems Life Extension	í.	<u>-</u>
EW Missile Model Production/Correction		
Advanced Grid Stiffened Composite Materials	· ^ ·	
Fast, Validated Modeling of Aircraft IR Signatures		
Acft Wheel Speed Transducer		
Modernization Planning Process		
Development of Modular Powder Coating Facility		
Mark IV B Meteorological Data SDAS Replacement		
Composite B4/B5 Combination Maint Stand	A	
Universal Munition Handling Trailer	<u>`</u>	
Combined Altitude Radar Altimeter	A	
Alternate Coating System		
Aging Landing Gear Life Extension (ALGLE)		
Project 2146	R-1 Shopping List - Item No. 220-7 of 220-8	Exhibit R-4 (PE 0708026E)

Exhibit R-4a, RDT&E Schedule	date Fe	bruary 2004	
BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0708026F Productivity, Reliability, Availability, Maintainability Program	PROJECT NUMBER A 2146 PRAM	ND TITLE
(U) <u>Schedule Profile</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
(U) Blade Tip Repair at Oklahoma City Air Logistics Center: (Congressional Add)	4Q		
(U) Modeling/Re-engineering at Oklahoma City Air Logistics Center		3Q	3Q
(U) Aircraft Turbine Engine Sustainment (Congressional Add)	3Q	3Q	3Q
(U) Inspection Technology for Turbine Engines (Congressional Add)	2Q		
(U) Portable Power Coating Process Warner Robbins Air Logistics Center: Develop a po application for applying powder coating to landing gear components	rtable 2Q	2Q	
(U) Powder Coating Process for Damages Warner Robbins Air Logistics Center: Develop evaluate processes suitable for the repair of damaged powder coating	p and 3Q		
(U) Cost of Corrosion	3Q		