PE NUMBER: 0207268F
PE TITLE: Aircraft Engine Component Improvement Program (CIP)

Exhibit R-2, RDT&E Budget Item Justification

DATE: February 2004

BUDGET ACTIVITY: 07 Operational System Development

PE NUMBER AND TITLE: 0207268F Aircraft Engine Component Improvement Program (CIP)

	Cost ($ in Millions)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total
	Total Program Element (PE) Cost	174.205	178.582	165.609	186.996	166.113	170.572	175.265	Continuing	TBD
1012	Aircraft Engine Component Improvement Program	174.205	178.582	165.609	186.996	166.113	170.572	175.265	Continuing	TBD

(U) A. Mission Description and Budget Item Justification

The Aircraft Engine Component Improvement Program (CIP) provides the only source of critical sustaining engineering support for in-service Air Force engines throughout their service life. The program's highest priority is to maintain flight safety. Engine CIP corrects service revealed deficiencies and reduces total ownership costs (RTOC). Additional goals include improved system Operational Readiness (OR) and Reliability and Maintainability (R&M). Historically, aircraft systems change missions, tactics, and environments to meet changing threats throughout their lives. Numerous new problems can develop in the engines through actual use and Engine CIP provides the only funds to develop fixes for these field problems. Engine CIP funding is driven by field events and types/maturity of engines, not by the total engine quantity. Engine CIP starts with delivery of the first production engine purchased with procurement funds, and continues over the engine's life, gradually decreasing to a minimum level (safety/depot repairs) sufficient to keep older inventory engines operational. Engine CIP addresses out-of-warranty usage and life and enables the Air Force to obtain additional warranties when manufacturers incorporate Engine CIP improvements into production engines. Since operational and safety problems arise throughout a system's service life, Engine CIP must be maintained at a level to provide the engineering support to make the changes essential for continued satisfactory system performance at affordable costs. Engine CIP ensures continued improvements in engine R&M factors, which reduce outyear support costs. Historically, R&M related Engine CIP efforts reduce outyear Operations and Maintenance (O&M) and spares costs by a ratio greater than 21 to 1. Air Force Major Commands assume a viable Engine CIP effort is in place when submitting their budget requests for O&M and engine spares. Without the outyear cost avoidance provided by Engine CIP, outyear support funding would have to be significantly increased.

This program is in budget activity 7 - Operational System Development, because all efforts support fielded systems.

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

		FY 2003	FY 2004	FY 2005
(U)	Previous President's Budget	182.755	180.112	168.771
(U)	Current PBR/President's Budget	174.205	178.582	165.609
(U)	Total Adjustments	-8.550	-1.530	
(U)	Congressional Program Reductions			
	Congressional Rescissions		-1.530	
	Congressional Increases			
	Reprogrammings	-2.986		
	SBIR/STTR Transfer	-5.564		
(U)	Significant Program Changes:			

Exhibit R-2a, RDT&E Project Justification			DATE: February 2004
BUDGET ACTIVITY: 07 Operational System Development	PE NUMBER AND TITLE: 0207268F Aircraft Engine Component Improvement Program (CIP)	PROJECT NUMBER AND TITLE: 1012 Aircraft Engine Component Improvement Program	

Cost ($ in Millions)		FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total
1012	Aircraft Engine Component Improvement Program	174.205	178.582	165.609	186.996	166.113	170.572	175.265	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0		

(U) A. Mission Description and Budget Item Justification

The Aircraft Engine Component Improvement Program (CIP) provides the only source of critical sustaining engineering support for in-service Air Force engines throughout their service life. The program's highest priority is to maintain flight safety. Engine CIP corrects service revealed deficiencies and reduces total ownership costs (RTOC). Additional goals include improved system Operational Readiness (OR) and Reliability and Maintainability (R&M). Historically, aircraft systems change missions, tactics, and environments to meet changing threats throughout their lives. Numerous new problems can develop in the engines through actual use and Engine CIP provides the only funds to develop fixes for these field problems. Engine CIP funding is driven by field events and types/maturity of engines, not by the total engine quantity. Engine CIP starts with delivery of the first production engine purchased with procurement funds, and continues over the engine's life, gradually decreasing to a minimum level (safety/depot repairs) sufficient to keep older inventory engines operational. Engine CIP addresses out-of-warranty usage and life and enables the Air Force to obtain additional warranties when manufacturers incorporate Engine CIP improvements into production engines. Since operational and safety problems arise throughout a system's service life, Engine CIP must be maintained at a level to provide the engineering support to make the changes essential for continued satisfactory system performance at affordable costs. Engine CIP ensures continued improvements in engine R&M factors, which reduce outyear support costs. Historically, R&M related Engine CIP efforts reduce outyear Operations and Maintenance (O&M) and spares costs by a ratio greater than 21 to 1. Air Force Major Commands assume a viable Engine CIP effort is in place when submitting their budget requests for O&M and engine spares. Without the outyear cost avoidance provided by Engine CIP, outyear support funding would have to be significantly increased.

This program is in budget activity 7 - Operational System Development, because all efforts support fielded systems.

(U) B. Accomplishments/Planned Program ($ in Millions)	FY 2003	FY 2004	FY 2005
(U) Accomplishments / Planned Program			
(U) Continuing CIP tasks (such as, but not limited to, improvement, support equipment, and repair tasks)	152.961	142.278	123.708
(U) Continuing engine testing (such as, but not limited to, altitude, sea level, and flight tests)	15.644	31.470	37.000
(U) Continuing mission support	5.600	4.834	4.901
(U)			
(U) Total Cost	174.205	178.582	165.609

Exhibit R-2a, RDT&E Project Justification		DATE February 2004
BUDGET ACTIVITY **07 Operational System Development**	PE NUMBER AND TITLE **0207268F Aircraft Engine Component Improvement Program (CIP)**	PROJECT NUMBER AND TITLE **1012 Aircraft Engine Component Improvement Program**

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

	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
(U) AF RDT&E									
(U) Other APPN									

RELATED ACTIVITIES:

(U) - PEs # 0604268A and #0604268N, Army/Navy Aircraft Engine CIPs for prior years

(U) - PEs # 0203752A and #0205633N, Army/Navy Aircraft Engine CIPs for FY 1996 and following years

(U) D. Acquisition Strategy

Contracts within this Program Element are awarded sole source to engine manufacturers, and CIP tasks are generally assigned to original engine manufacturers based on available funding and prioritization of candidate tasks.

Exhibit R-3, RDT&E Project Cost Analysis

DATE: **February 2004**

BUDGET ACTIVITY: **07 Operational System Development**

PE NUMBER AND TITLE: **0207268F Aircraft Engine Component Improvement Program (CIP)**

PROJECT NUMBER AND TITLE: **1012 Aircraft Engine Component Improvement Program**

(U) Cost Categories (Tailor to WBS, or System/Item Requirements) ($ in Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2003 Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
(U) Product Development												
GE-Evandale, OH	CPAF			57.308	Jan-03	55.076	Jan-04	48.717	Jan-05	Continuing	TBD	
Pratt & Whitney	CPAF			81.714	Jan-03	72.152	Jan-04	62.248	Jan-05	Continuing	TBD	
GE-Lynn, MA	CPFF			5.961	Jan-03	5.563	Jan-04	5.400	Jan-05	Continuing	TBD	
Rolls Royce/Allison	CPFF			1.955	Jan-03	1.725	Jan-04	1.100	Jan-05	Continuing	TBD	
Teledyne	CPFF			2.064	Jan-03	3.126	Jan-04	2.243	Jan-05	Continuing	TBD	
Honeywell	CPFF			1.193	Jan-03	1.739	Jan-04	1.300	Jan-05	Continuing	TBD	
Williams International	CPFF			2.628	Jan-03	2.695	Jan-04	2.400	Jan-05	Continuing	TBD	
Hamilton/Sundstrand	CPFF			0.138	Jan-03	0.202	Jan-04	0.300	Jan-05	Continuing	TBD	
Subtotal Product Development			0.000	152.961		142.278		123.708		Continuing	TBD	0.000
Remarks:												
(U) Support												
In House Support/ Misc				5.600		4.834		4.901		Continuing	TBD	
Subtotal Support			0.000	5.600		4.834		4.901		Continuing	TBD	0.000
Remarks:												
(U) Test & Evaluation												
AFFTC-Edwards AFB, CA				2.064		3.000		4.000		Continuing	TBD	
AEDC-Arnold AFB, TN				13.580		28.470		33.000		Continuing	TBD	
Subtotal Test & Evaluation			0.000	15.644		31.470		37.000		Continuing	TBD	0.000
Remarks:												
(U) Management												
											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) Total Cost			0.000	174.205		178.582		165.609		Continuing	TBD	0.000

Footnote: Total prior to FY 2003 is not reflected above because the program was funded in procurement through FY 1979 and RDT&E funding began in FY 1980.

Exhibit R-4, RDT&E Schedule Profile		DATE **February 2004**
BUDGET ACTIVITY **07 Operational System Development**	PE NUMBER AND TITLE **0207268F Aircraft Engine Component Improvement Program (CIP)**	PROJECT NUMBER AND TITLE **1012 Aircraft Engine Component Improvement Program**

Not applicable. CIP is a continuing engineering support program that funds 400 - 500 separate engineering tasks per year.

Exhibit R-4a, RDT&E Schedule Detail		DATE February 2004
BUDGET ACTIVITY **07 Operational System Development**	PE NUMBER AND TITLE **0207268F Aircraft Engine Component Improvement Program (CIP)**	PROJECT NUMBER AND TITLE **1012 Aircraft Engine Component Improvement Program**

(U) Schedule Profile

	FY 2003	FY 2004	FY 2005
(U) Not applicable. CIP is a continuing engineering support program that funds 400-500 separate engineering tasks per year.	1-4Q	1-4Q	1-4Q