

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 1999		
BUDGET ACTIVITY 7 - Operational System Development				PE NUMBER AND TITLE 0207268F Aircraft Engine Component Improvement Program (CIP)				PROJECT 1012		
COST (\$ In Thousands)	FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
1012 Aircraft Engine Component Improvement Program	93,487	96,589	160,212	168,410	175,598	187,853	213,089	170,449	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

(U) A. Mission Description

The Engine Component Improvement Program (CIP) provides critical sustaining engineering support (only source) for in-service Air Force engines to maintain flight safety (highest priority), to correct service revealed deficiencies, to improve system Operational Readiness (OR) and Reliability and Maintainability (R&M), to reduce engine Life Cycle Cost (LCC), and to sustain engines throughout their service life. 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 during deployment, production, and service, 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. MAJCOMs 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 increased drastically.

(U) FY 1998 (\$ in Thousands):

- (U) \$ 84,211 Funded 630 CIP tasks (248 redesign tasks, 306 repair development tasks, and 76 analysis tasks)
- (U) \$ 3,110 Funded 4760 test hours
- (U) \$ 6,166 Petroleum, oil, lubricants and other support costs
- (U) \$ 93,487 Total

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<p>(U) <u>FY 1999 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> - (U) \$ 84,255 625 CIP tasks (245 redesign tasks, 308 repair development tasks, and 72 analysis tasks) - (U) \$ 3,038 5075 test hours - (U) \$ 6,067 Petroleum, oil, lubricants and other support costs - (U) \$ 3,229 Identified as a source for SBIR - (U) \$ 96,589 Total <p>(U) <u>FY 2000 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> - (U) \$131,312 837 CIP tasks (318 redesign tasks, 409 repair development tasks, and 110 analysis tasks) - (U) \$ 17,500 9100 test hours - (U) \$ 11,400 Petroleum, oil, lubricants and other support costs - (U) \$160,212 Total <p>(U) <u>FY 2001 (\$ in Thousands):</u></p> <ul style="list-style-type: none"> - (U) \$130,810 785 CIP tasks (294 redesign tasks, 378 repair development tasks, and 113 analysis tasks) - (U) \$ 22,600 12700 test hours - (U) \$ 15,000 Petroleum, oil, lubricants and other support costs - (U) \$168,410 Total <p>(U) <u>B. Budget Activity Justification</u> This program is in budget activity 7 - Operational System Development, Research Category 6.6 because all efforts support fielded systems.</p>		
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BUDGET ACTIVITY 7 - Operational System Development		PE NUMBER AND TITLE 0207268F Aircraft Engine Component Improvement Program (CIP)			PROJECT 1012
 (U) C. <u>Program Change Summary (\$ in Thousands)</u>					
	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Total Cost</u>
(U) Previous President's Budget (FY 1999 PB)	98,058	92,069	93,659	116,663	Continuing
(U) Appropriated Value	103,122	97,069			
(U) Adjustments to Appropriated Value					
a. Congressional/General Reductions	-4,060	-480			
b. SBIR	-1,675				
c. Omnibus or Other Above Threshold Reprogram					
d. Below Threshold Reprogramming	-3,900				
(U) Adjustments to Budget Years Since FY 1999 PB			66,553	51,747	Continuing
(U) Current Budget Submit/ FY 2000 PB	93,487	96,589	160,212	168,410	Continuing
 (U) Significant Program Changes: FY99: \$3,229 identified as a source for SBIR. In FY00 and 01 funding is increased to address the backlog of reliability and maintainability tasks and add the F-22 F119 engine to the active inventory.					
 (U) D. <u>Other Program Funding Summary (\$ in Thousands)</u> Not applicable.					
 (U) <u>RELATED ACTIVITIES:</u> (U) - PEs # 0604268A and #0604268N, Army/Navy Aircraft Engine CIPs for prior years (U) - PEs # 0207268A and #0207268N, Army/Navy Aircraft Engine CIPs for FY96 and following years					
 (U) E. <u>Acquisition Strategy</u> Contracts within this Program Element are awarded sole source to engine manufacturers. CIP tasks are generally assigned to original engine manufacturers. Tasks are assigned based on available funding and prioritization of candidate tasks.					
 (U) F. <u>Schedule Profile</u> Not applicable. CIP is a level of effort program that funds 600+ separate engineering tasks per year.					
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE February 1999
BUDGET ACTIVITY 7 - Operational System Development	PE NUMBER AND TITLE 0207268F Aircraft Engine Component Improvement Program (CIP)	PROJECT 1012

(U) **A. Project Cost Breakdown (\$ in Thousands)** A project cost breakdown is not applicable to this Program, because there are no individual projects, but several hundred independently managed tasks. The bulk of the funding goes to the major engine manufacturers. Cost breakdown for follow-on years is expected to be of similar proportions.

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
(U) Contracted Tasks	84,211	84,255	131,312	130,810
(U) AFFTC Flight Tests	367	434	1,500	1,700
(U) AEDC Altitude Tests	2,743	2,604	16,000	20,900
(U) Petroleum/Oil/Lubricants	4,290	4,717	10,000	13,500
(U) Mission Support	1,876	1,350	1,400	1,500
(U) Identified as a source for SBIR	0	3,229	0	0
(U) PE TOTAL	93,487	96,589	160,212	168,410

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(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
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 1998	Budget FY 1998	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	Total Program
Identified as a source for SBIR							3,229	3,229			
<u>Product Development Organizations</u>											
GE-Evandale, OH	CPAF	Jan 98	NA	NA	NA	36,629	43,287	63,352	51,710	CONT	CONT
Pratt & Whitney	CPAF	Jan 98	NA	NA	NA	41,408	34,963	61,135	72,350	CONT	CONT
GE-Lynn, MA	CPFF	Jan 98	NA	NA	NA	2,625	2,625	2,975	2,900	CONT	CONT
Allison	CPFF	Jan 98	NA	NA	NA	1,228	1,400	1,400	1,400	CONT	CONT
Teledyne	CPFF	Jan 98	NA	NA	NA	1,309	730	1,200	1,200	CONT	CONT
Allied Signal	CPFF	Jan 98	NA	NA	NA	550	500	500	500	CONT	CONT
Williams	CPFF	Jan 98	NA	NA	NA	275	250	250	250	CONT	CONT
Sundstrand	CPFF	Jan 98	NA	NA	NA	187	500	500	500	CONT	CONT
<u>Support and Management Organizations</u>											
In House Support					NA	1,876	1,350	1,400	1,500	CONT	CONT
Petroleum/Oil/Lubricants					NA	4,290	4,717	10,000	13,500	CONT	CONT
<u>Test and Evaluation Organizations</u>											
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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 1998	Budget FY 1998	Budget FY 1999	Budget FY 2000	Budget FY 2001	Budget to Complete	Total Program
AFFTC-Edwards AFB, CA					NA	367	434	1,500	1,700	CONT	CONT
AEDC-Arnold AFB, TN					NA	2,743	2,604	16,000	20,900	CONT	CONT
(U) B. Budget Acquisition History and Planning Information Continued (\$ in Thousands)											
Government Furnished Property: Not applicable											
Identified as a source for SBIR							3,229				3,229
Subtotal Product Development					NA	84,211	84,255	131,312	130,810	CONT	CONT
Subtotal Support and Management					NA	6,166	6,067	11,400	15,000	CONT	CONT
Subtotal Test and Evaluation					NA	3,110	3,038	17,500	22,600	CONT	CONT
Total Project					NA	93,487	96,589	160,212	168,410	CONT	CONT