

UNCLASSIFIED

PE NUMBER: 0207268F

PE TITLE: Aircraft Engine Component Improvement Program (CIP)

Exhibit R-2, RDT&E Budget Item Justification	DATE February 2008
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BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0207268F Aircraft Engine Component Improvement Program (CIP)
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Cost (\$ in Millions)	FY 2007 Actual	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	152.969	138.159	150.956	162.111	167.502	170.448	173.933	Continuing	TBD
1012 Aircraft Engine Component Improvement Program	152.969	138.159	150.956	162.111	167.502	170.448	173.933	Continuing	TBD

Note: FY08 funding totals do not include \$20M FY2008 GWOT requirements still pending Congressional approval.

(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 to maintain flight safety (highest priority), to correct service revealed deficiencies, to improve system operational readiness (OR) and reliability & 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 (including new fuels) to meet changing threats throughout their lives. New technical problems can develop in the engines through actual use and Engine CIP provides the means 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. The program 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, through "Lead the Fleet" operational use and accelerated mission testing, finds and fixes engine-related problems ahead of operational impacts. Engine CIP addresses out-of-warranty usage/life and enables the Air Force to obtain additional warranties when manufacturers incorporate Engine CIP improvements into production engines. Engine CIP ensures continued improvements in engine R&M factors, which reduce out year support costs. Historically, R&M related Engine CIP efforts significantly reduce out year Operations and Maintenance (O&M) and spares costs. 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 out year cost avoidance provided by Engine CIP, out year 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)

	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Previous President's Budget	153.736	139.042	163.137
(U) Current PBR/President's Budget	152.969	138.159	150.956
(U) Total Adjustments	-0.767	-0.883	
(U) Congressional Program Reductions			
Congressional Rescissions		-0.883	
Congressional Increases			
Reprogrammings	3.467		
SBIR/STTR Transfer	-4.234		
(U) <u>Significant Program Changes:</u>			

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0207268F Aircraft Engine Component Improvement Program (CIP)

Note: Engine CIP FY09 funding reduced in FY09 PB to support higher Air Force priorities.

Exhibit R-2a, RDT&E Project Justification

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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 2007 Actual	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total
1012 Aircraft Engine Component Improvement Program	152.969	138.159	150.956	162.111	167.502	170.448	173.933	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 to maintain flight safety (highest priority), to correct service revealed deficiencies, to improve system operational readiness (OR) and reliability & 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 (including new fuels) to meet changing threats throughout their lives. New technical problems can develop in the engines through actual use and Engine CIP provides the means 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. The program 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, through "Lead the Fleet" operational use and accelerated mission testing, finds and fixes engine-related problems ahead of operational impacts. Engine CIP addresses out-of-warranty usage/life and enables the Air Force to obtain additional warranties when manufacturers incorporate Engine CIP improvements into production engines. Engine CIP ensures continued improvements in engine R&M factors, which reduce out year support costs. Historically, R&M related Engine CIP efforts significantly reduce out year Operations and Maintenance (O&M) and spares costs. 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 out year cost avoidance provided by Engine CIP, out year 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)

	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Continuing CIP tasks (such as, but not limited to, safety, improvement, support equipment, and repair tasks)	128.579	108.999	120.611
(U) Continuing engine testing (such as, but not limited to, altitude, sea level, and flight tests)	22.568	25.801	26.745
(U) Continuing mission support	1.822	3.359	3.600
(U) Total Cost	152.969	138.159	150.956

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

	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	

(U) Other APPN

RELATED ACTIVITIES:

- (U) - PEs # 0604268A and #0604268N, Army/Navy Aircraft Engine CIPs for prior to 1996
- (U) - PEs # 0203752A and #0205633N, Army/Navy Aircraft Engine CIPs for FY 1996-present

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PE NUMBER AND TITLE

0207268F Aircraft Engine Component
Improvement Program (CIP)

PROJECT NUMBER AND TITLE

1012 Aircraft Engine Component
Improvement Program(U) **D. Acquisition Strategy**

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

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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 2007 Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
(U) <u>Product Development</u>												
GE-Evandale, OH	CPAF	Evandale, OH		46.061	Jan-07	31.713	Jan-08	34.909	Jan-09	Continuing	TBD	
Pratt & Whitney	CPAF	Hartford, CT		71.973	Jan-07	65.935	Jan-08	72.426	Jan-09	Continuing	TBD	
GE-Lynn, MA	CPFF	Lynn, MA		5.031	Jan-07	6.770	Jan-08	7.429	Jan-09	Continuing	TBD	
Rolls Royce/Allison	CPFF	Indianapolis, IN		1.721	Jan-07	2.107	Jan-08	2.752	Jan-09	Continuing	TBD	
Teledyne	CPFF	Toledo, OH		0.172	Jan-07	0.030	Jan-08	0.033	Jan-09	Continuing	TBD	
Honeywell	CPFF	Phoenix, AZ		3.083	Jan-07	2.294	Jan-08	2.903	Jan-09	Continuing	TBD	
Williams International	CPFF	Walled Lake, MI		0.538	Jan-07	0.150	Jan-08	0.159	Jan-09	Continuing	TBD	
Subtotal Product Development			0.000	128.579		108.999		120.611		Continuing	TBD	0.000
Remarks:												
(U) <u>Support</u>												
In House Support/ Misc				1.822	Oct-07	3.359	Oct-08	3.600	Oct-09	Continuing	TBD	
Subtotal Support			0.000	1.822		3.359		3.600		Continuing	TBD	0.000
Remarks:												
(U) <u>Test & Evaluation</u>												
AF Flight Test Center - Edwards AFB, CA		Edwards AFB, CA		0.000	Jan-07	0.000	Jan-08	0.000	Jan-09	Continuing	TBD	
Arnold Engineering Development Center - Arnold AFB, TN		Arnold AFB, TN		17.477	Jan-07	14.900	Jan-08	15.726	Jan-09	Continuing	TBD	
NASA Glenn		Cleveland, OH		0.252	Jan-07	0.000	Jan-08	0.000	Jan-09	Continuing	TBD	
Fuel		N/A		4.839	Jan-07	10.901	Jan-08	11.019	Jan-09	Continuing	TBD	
Subtotal Test & Evaluation			0.000	22.568		25.801		26.745		Continuing	TBD	0.000
Remarks:												
(U) Total Cost			0.000	152.969		138.159		150.956		Continuing	TBD	0.000
Footnote:												
Total prior to FY 2007 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

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0207268F Aircraft Engine Component Improvement Program (CIP)

PROJECT NUMBER AND TITLE

1012 Aircraft Engine Component Improvement Program

Not applicable. Engine CIP is a continuing engineering support program that funds 300-350 separate tasks per year.

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Exhibit R-4a, RDT&E Schedule Detail	DATE February 2008
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(U) <u>Schedule Profile</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Not applicable. CIP is a continuing engineering support program that funds 300-350 separate engineering tasks per year.	1-4Q	1-4Q	1-4Q