

**UNCLASSIFIED**

PE NUMBER: 0207268F

PE TITLE: Aircraft Engine Component Improvement Program (CIP)

<b>Exhibit R-2, RDT&amp;E Budget Item Justification</b>	DATE <b>February 2007</b>
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BUDGET ACTIVITY <b>07 Operational System Development</b>	PE NUMBER AND TITLE <b>0207268F Aircraft Engine Component Improvement Program (CIP)</b>
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Cost (\$ in Millions)	FY 2006 Actual	FY 2007 Estimate	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	146.527	153.736	139.042	163.137	163.615	169.097	172.064	175.573	Continuing	TBD
1012 Aircraft Engine Component Improvement Program	146.527	153.736	139.042	163.137	163.615	169.097	172.064	175.573	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 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 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 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Previous President's Budget	151.082	154.319	157.816	161.304
(U) Current PBR/President's Budget	146.527	153.736	139.042	163.137
(U) Total Adjustments	-4.555	-0.583		
(U) Congressional Program Reductions				
Congressional Rescissions	-0.006	-0.583		
Congressional Increases				
Reprogrammings	-0.389			
SBIR/STTR Transfer	-4.160			

**(U) Significant Program Changes:**

FY08 funding reduced to support higher Air Force priorities.

**Exhibit R-2a, RDT&E Project Justification**

DATE  
**February 2007**

BUDGET ACTIVITY <b>07 Operational System Development</b>					PE NUMBER AND TITLE <b>0207268F Aircraft Engine Component Improvement Program (CIP)</b>			PROJECT NUMBER AND TITLE <b>1012 Aircraft Engine Component Improvement Program</b>		
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Cost (\$ in Millions)	FY 2006 Actual	FY 2007 Estimate	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	146.527	153.736	139.042	163.137	163.615	169.097	172.064	175.573	Continuing	TBD
Quantity of RDT&E Articles	0	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 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 2006</u>	<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)	126.001	123.212	111.015	130.253
(U) Continuing engine testing (such as, but not limited to, altitude, sea level, and flight tests)	16.559	27.140	24.453	28.691
(U) Continuing mission support	3.967	3.384	3.574	4.193
(U) Total Cost	146.527	153.736	139.042	163.137

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

	<u>FY 2006</u>	<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 Complete</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>								

(U) Other APPN

RELATED ACTIVITIES:

## Exhibit R-2a, RDT&amp;E Project Justification

DATE

February 2007

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)**

(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

**(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**

DATE  
**February 2007**

<b>BUDGET ACTIVITY</b> <b>07 Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0207268F Aircraft Engine Component Improvement Program (CIP)</b>	<b>PROJECT NUMBER AND TITLE</b> <b>1012 Aircraft Engine Component Improvement Program</b>
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(U) <u>Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method &amp; Type</u>	<u>Performing Activity &amp; Location</u>	<u>Total Prior to FY 2006 Cost</u>	<u>FY 2006</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2009</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
				<u>Cost</u>	<u>Award Date</u>									
(U) <u>Product Development</u> GE-Evandale, OH	CPAF	Evandale, OH		41.607	Jan-06	46.233	Jan-07	41.657	Jan-08	48.876	Jan-09	Continuing	TBD	
Pratt & Whitney	CPAF	Hartford, CT		73.941	Jan-06	64.301	Jan-07	57.935	Jan-08	67.975	Jan-09	Continuing	TBD	
GE-Lynn, MA	CPFF	Lynn, MA		5.290	Jan-06	5.215	Jan-07	4.699	Jan-08	5.513	Jan-09	Continuing	TBD	
Rolls Royce/Allison	CPFF	Indianapolis, IN		1.100	Jan-06	4.097	Jan-07	3.691	Jan-08	4.331	Jan-09	Continuing	TBD	
Teledyne	CPFF	Toledo, OH		0.450	Jan-06	0.204	Jan-07	0.184	Jan-08	0.216	Jan-09	Continuing	TBD	
Honeywell	CPFF	Phoenix, AZ		3.000	Jan-06	3.011	Jan-07	2.713	Jan-08	3.183	Jan-09	Continuing	TBD	
Williams International	CPFF	Walled Lake, MI		0.500	Jan-06	0.151	Jan-07	0.136	Jan-08	0.159	Jan-09	Continuing	TBD	
Subtotal Product Development			0.000	125.888		123.212		111.015		130.253		Continuing	TBD	0.000
Remarks:														
(U) <u>Support</u> In House Support/ Misc				4.080	Oct-05	3.384	Oct-06	3.574	Oct-07	4.193	Oct-08	Continuing	TBD	
Subtotal Support			0.000	4.080		3.384		3.574		4.193		Continuing	TBD	0.000
Remarks:														
(U) <u>Test &amp; Evaluation</u> AF Flight Test Center - Edwards AFB, CA		Edwards AFB, CA		0.450	Jan-06	0.000	Jan-07	0.000	Jan-08	0.000	Jan-09	Continuing	TBD	
Arnold Engineering Development Center - Arnold AFB, TN		Arnold AFB, TN		8.566	Jan-06	13.667	Jan-07	12.314	Jan-08	14.448	Jan-09	Continuing	TBD	
NASA Glenn		Cleveland, OH		2.300	Jan-06	1.301	Jan-07	1.172	Jan-08	1.375	Jan-09		6.148	
Fuel		N/A		5.243	Jan-06	12.172	Jan-07	10.967	Jan-08	12.868	Jan-09		41.250	
Subtotal Test & Evaluation			0.000	16.559		27.140		24.453		28.691		Continuing	TBD	0.000
Remarks:														
(U) Total Cost			0.000	146.527		153.736		139.042		163.137		Continuing	TBD	0.000
Footnote:														
Total prior to FY 2006 is not reflected above because the program was funded in procurement through FY 1979 and RDT&E funding began in FY 1980.														

<p align="center"><b>Exhibit R-4, RDT&amp;E Schedule Profile</b></p>	<p>DATE <b>February 2007</b></p>
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<p>BUDGET ACTIVITY <b>07 Operational System Development</b></p>	<p>PE NUMBER AND TITLE <b>0207268F Aircraft Engine Component Improvement Program (CIP)</b></p>	<p>PROJECT NUMBER AND TITLE <b>1012 Aircraft Engine Component Improvement Program</b></p>
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Not applicable. Engine CIP is a continuing engineering support program that funds 300-350 separate tasks per year.

Exhibit R-4a, RDT&E Schedule Detail

DATE

February 2007

BUDGET ACTIVITY <b>07 Operational System Development</b>	PE NUMBER AND TITLE <b>0207268F Aircraft Engine Component Improvement Program (CIP)</b>	PROJECT NUMBER AND TITLE <b>1012 Aircraft Engine Component Improvement Program</b>
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(U) <b>Schedule Profile</b>	<u>FY 2006</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	1-4Q