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

Exhibit R-2, RDT&E Budget Item Justification

DATE: May 2009

BUDGET ACTIVITY: 07 Operational System Development

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

	Cost ($ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
	Total Program Element (PE) Cost	158.560	150.547	166.563	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
1012	Aircraft Engine Component Improvement Program	158.560	150.547	154.765	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
5365	Aircraft Engine Component Improvement Program (F135)	0.000	0.000	11.798	0.000	0.000	0.000	0.000	0.000	0.000	0.000

FY 2008 - funding includes $14.744M approved in supplemental.
FY 2010 - Project 675365 is new in FY10 to provide enhanced funds tracking and accountability for the F135 engine (F-35). Previously, all Engine CIP work was accomplished entirely within Project 671012.

(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. Without the 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.

Exhibit R-2, RDT&E Budget Item Justification	DATE May 2009
BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0207268F Aircraft Engine Component Improvement Program (CIP)

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

		FY 2008	FY 2009	FY 2010
(U)	Previous President's Budget	138.159	150.956	162.111
(U)	Current PBR/President's Budget	158.560	150.547	166.563
(U)	Total Adjustments	20.401	-0.409	
(U)	Congressional Program Reductions			
	Congressional Rescissions		-0.409	
	Congressional Increases	14.744		
	Reprogrammings	9.500		
	SBIR/STTR Transfer	-3.843		

(U) Significant Program Changes:

Engine CIP FY 2008 Supplemental provided increase of $14.744M. Miscellaneous reprogammings of $9.5M in FY08 included alternative fuels testing effort prior to the start-up of the new Alternative Fuels PE (0604796F) in FY09.

Exhibit R-2a, RDT&E Project Justification			DATE: May 2009
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 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
1012	Aircraft Engine Component Improvement Program	158.560	150.547	154.765	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

FY 2008 funding total includes $14.744M in supplemental funding.

(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. Without the 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.

	B. Accomplishments/Planned Program ($ in Millions)	FY 2008	FY 2009	FY 2010
(U)	Continuing Engine CIP tasks (such as, but not limited to, safety, improvement, support equipment, and repair tasks)	133.911	121.124	124.709
(U)	Continuing engine testing (such as, but not limited to, altitude, sea level, and flight tests)	22.317	26.336	27.890
(U)	Continuing mission support	2.332	3.087	2.166
(U)	Total Cost	158.560	150.547	154.765

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

	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total Cost
(U) Other APPN										

RELATED ACTIVITIES:

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

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

Exhibit R-2a, RDT&E Project Justification		DATE: May 2009
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) D. Acquisition Strategy

Contracts within this Program Element are awarded sole source to engine manufacturers. Engine 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: May 2009

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 2008 Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost to Complete	Total Cost	Target Value of Contract
(U) Product Development												
GE-Evendale, OH	CPAF	Evendale, OH		38.308	Jan-08	34.500	Jan-09	36.653	Jan-10	Continuing	TBD	
Pratt & Whitney	CPAF	Hartford, CT		70.592	Jan-08	72.426	Jan-09	74.213	Jan-10	Continuing	TBD	
GE-Lynn, MA	CPFF	Lynn, MA		6.770	Jan-08	7.429	Jan-09	7.747	Jan-10	Continuing	TBD	
Rolls Royce/Allison	CPFF	Indianapolis, IN		2.607	Jan-08	3.298	Jan-09	2.870	Jan-10	Continuing	TBD	
Teledyne	CPFF	Toledo, OH		0.030	Jan-08	0.000	Jan-09	0.034	Jan-10	Continuing	TBD	
Honeywell	CPFF	Phoenix, AZ		2.294	Jan-08	2.903	Jan-09	3.027	Jan-10	Continuing	TBD	
Williams International	CPFF	Walled Lake, MI		0.150		0.159	Jan-09	0.165	Jan-10	Continuing	TBD	
Subtotal Product Development			0.000	120.751		120.715		124.709		Continuing	TBD	0.000
Remarks:												
(U) Support												
In House Support/ Misc				2.332	Oct-07	3.087	Oct-08	2.166	Oct-09	Continuing	TBD	
Subtotal Support			0.000	2.332		3.087		2.166		Continuing	TBD	0.000
Remarks:												
(U) Test & Evaluation												
AF Flight Test Center - Edwards AFB, CA		Edwards AFB, CA	0.000	0.000	Jan-08	0.000		0.000		Continuing	TBD	
Arnold Engineering Development Center - Arnold AFB, TN		Arnold AFB, TN		28.896		15.726	Oct-08	16.399	Oct-09	Continuing	TBD	
NASA Glenn		Cleveland, OH	0.000	0.000	Jan-08	0.000		0.000		Continuing	TBD	
Fuel		N/A		6.581		11.019	Oct-08	11.491	Oct-09	Continuing	TBD	
Subtotal Test & Evaluation			0.000	35.477		26.745		27.890		Continuing	TBD	0.000
Remarks: Prior years have included fuel costs with the applicable contractors. Fuel to support Test & Evaluation is now broken out as a separate line item.												
(U) Total Cost			0.000	158.560		150.547		154.765		Continuing	TBD	0.000

Footnote: Total prior to FY 2008 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 May 2009
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. Engine CIP is a continuing engineering support program that funds 300-350 separate tasks per year .

Exhibit R-4a, RDT&E Schedule Detail		DATE: May 2009
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 2008	FY 2009	FY 2010
(U) Not applicable. Engine CIP is a continuing sustaining engineering support program that annually funds between 300-350 separate tasks per year.	1-4Q	1-4Q	1-4Q

Exhibit R-2a, RDT&E Project Justification

DATE: May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT NUMBER AND TITLE
07 Operational System Development	0207268F Aircraft Engine Component Improvement Program (CIP)	5365 Aircraft Engine Component Improvement Program (F135)

	Cost ($ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
5365	Aircraft Engine Component Improvement Program (F135)	0.000	0.000	11.798	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	0	0		

Project 675365 is new in FY10 to provide enhanced funds tracking and accountability for the F135 engine (F-35).

(U) A. Mission Description and Budget Item Justification

The Aircraft Engine Component Improvement Program (F135) supports the F-135 engine (F-35). It 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 (F135) provides the means to develop fixes for these field problems. Engine CIP (F135) 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 (F135), through "Lead the Fleet" operational use and accelerated mission testing, finds and fixes engine-related problems ahead of operational impacts. Engine CIP (F135) 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 (F135) 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. Without the 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 F135 engine systems.

	B. Accomplishments/Planned Program ($ in Millions)	FY 2008	FY 2009	FY 2010
(U)	Continuing Engine CIP (F135) tasks (such as, but not limited to, safety, improvement, support equipment, and repair tasks)	0.000	0.000	11.633
(U)	Continuing engine testing (such as, but not limited to, altitude, sea level, and flight tests)	0.000	0.000	0.000
(U)	Continuing mission support	0.000	0.000	0.165
(U)	Total Cost	0.000	0.000	11.798

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

	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total Cost
(U) OTHER APPN										

Program Element 0205633N provides US Navy funding support of the F135 (F-35).

Exhibit R-2a, RDT&E Project Justification		DATE: May 2009
BUDGET ACTIVITY **07 Operational System Development**	PE NUMBER AND TITLE **0207268F Aircraft Engine Component Improvement Program (CIP)**	PROJECT NUMBER AND TITLE **5365 Aircraft Engine Component Improvement Program (F135)**

(U) D. Acquisition Strategy

Contracts within this Program Element are awarded sole source to engine manufacturers. Engine CIP (F135) 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: May 2009

BUDGET ACTIVITY: 07 Operational System Development

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

PROJECT NUMBER AND TITLE: 5365 Aircraft Engine Component Improvement Program (F135)

(U) Cost Categories (Tailor to WBS, or System/Item Requirements) ($ in Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2008 Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost to Complete	Total Cost	Target Value of Contract
(U) Product Development												
Pratt & Whitney	CPAF	Hartford, CT						11.633	Jan-10	Continuing	TBD	
Subtotal Product Development			0.000	0.000		0.000		11.633		Continuing	TBD	0.000
Remarks:												
(U) Support												
In House Support/ Misc								0.165	Oct-09	Continuing	TBD	
Subtotal Support			0.000	0.000		0.000		0.165		Continuing	TBD	0.000
Remarks:												
(U) Test & Evaluation												
										Continuing	TBD	
Subtotal Test & Evaluation			0.000	0.000		0.000		0.000		Continuing	TBD	0.000
Remarks:												
(U) Management												
										Continuing	TBD	
Subtotal Management			0.000	0.000		0.000		0.000		Continuing	TBD	0.000
Remarks:												
(U) Total Cost			0.000	0.000		0.000		11.798		Continuing	TBD	0.000

Footnote: Project 675365 is new in FY10 to provide enhanced funds tracking and accountability for the F135 engine (F-35) .

Exhibit R-4, RDT&E Schedule Profile		DATE May 2009
BUDGET ACTIVITY **07 Operational System Development**	PE NUMBER AND TITLE **0207268F Aircraft Engine Component Improvement Program (CIP)**	PROJECT NUMBER AND TITLE **5365 Aircraft Engine Component Improvement Program (F135)**

Not applicable. Engine CIP (F135) is a continuing sustaining engineering support program that funds between 10-30 tasks in FY 2010 and increasing to 100-150 tasks beginning FY 2011 through the FYDP

Exhibit R-4a, RDT&E Schedule Detail		DATE: May 2009
BUDGET ACTIVITY: 07 Operational System Development	PE NUMBER AND TITLE: 0207268F Aircraft Engine Component Improvement Program (CIP)	PROJECT NUMBER AND TITLE: 5365 Aircraft Engine Component Improvement Program (F135)

(U) Schedule Profile

	FY 2008	FY 2009	FY 2010
(U) Not applicable. Engine CIP (F135) is a continuing sustaining engineering support program that will fund between 10-30 separate tasks in FY 2010 and 100-150 tasks through the FYDP beginning FY 2011.	1-4Q	1-4Q	1-4Q