Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Air Force											Date: May 2017	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0207268F / *Aircraft Engine Component Improvement Program*							
COST ($ in Millions)	**Prior Years**	**FY 2016**	**FY 2017**	**FY 2018 Base**	**FY 2018 OCO**	**FY 2018 Total**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**Cost To Complete**	**Total Cost**
Total Program Element	-	104.092	109.859	109.243	0.000	109.243	111.116	113.350	115.480	117.842	Continuing	Continuing
671012: *Aircraft Engine Component Improvement Program*	-	73.763	78.293	76.969	0.000	76.969	78.314	79.938	81.488	83.155	Continuing	Continuing
675365: *F135 Aircraft Engine Component Improvement Program*	-	30.329	31.566	32.274	0.000	32.274	32.802	33.412	33.992	34.687	Continuing	Continuing

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 deficiencies, improve system operational readiness (OR) and reliability & maintainability (R&M), reduce engine Life Cycle Cost (LCC), and sustain engines throughout their service life.

Changes in aircraft operational parameters caused by changing missions and tasks accelerate new engine problems; Engine CIP provides the means to develop fixes for these problems. Engine CIP funding is driven by field events and types/maturity of engines, not by the total engine quantity. The program starts with government acceptance of the first procurement-funded engine and continues over the engine's life, gradually decreasing to a minimum level (safety/depot repairs) sufficient to keep older engines operational. Engine CIP testing identifies and fixes engine-related problems ahead of operational impacts. R&M related Engine CIP efforts significantly reduce out year Operations and Maintenance (O&M) and spares costs.

This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Air Force					Date: May 2017
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*		**R-1 Program Element (Number/Name)** PE 0207268F / *Aircraft Engine Component Improvement Program*			
B. Program Change Summary ($ in Millions)	**FY 2016**	**FY 2017**	**FY 2018 Base**	**FY 2018 OCO**	**FY 2018 Total**
Previous President's Budget	103.942	109.859	108.928	0.000	108.928
Current President's Budget	104.092	109.859	109.243	0.000	109.243
Total Adjustments	0.150	0.000	0.315	0.000	0.315
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	3.500	0.000			
• SBIR/STTR Transfer	-3.350	0.000			
• Other Adjustments	0.000	0.000	0.315	0.000	0.315

Change Summary Explanation

FY16 increase of $3.5M for LCMC/Aircraft Engine CIP program

Exhibit R-2A, RDT&E Project Justification: FY 2018 Air Force			Date: May 2017
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207268F / *Aircraft Engine Component Improvement Program*	Project (Number/Name) 671012 / *Aircraft Engine Component Improvement Program*	

COST ($ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
671012: *Aircraft Engine Component Improvement Program*	-	73.763	78.293	76.969	0.000	76.969	78.314	79.938	81.488	83.155	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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 deficiencies, improve system operational readiness (OR) and reliability & maintainability (R&M), reduce engine Life Cycle Cost (LCC), and sustain engines throughout their service life.

Changes in aircraft operational parameters caused by changing missions and tasks accelerate new engine problems; Engine CIP provides the means to develop fixes for these problems. Engine CIP funding is driven by field events and types/maturity of engines, not by the total engine quantity. The program starts with government acceptance of the first procurement-funded engine and continues over the engine's life, gradually decreasing to a minimum level (safety/depot repairs) sufficient to keep older engines operational. Engine CIP testing identifies and fixes engine-related problems ahead of operational impacts. R&M related Engine CIP efforts significantly reduce out year Operations and Maintenance (O&M) and spares costs.

This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Title: F100 Aircraft Engine Component Improvement Program	9.562	6.434	6.325
Description: The F100-220 and F100-229 Engine CIP provides critical developmental engineering support for approximately 4085 engines (including foreign military sales [FMS]) to maintain flight safety (highest priority), to address parts obsolescence, 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. Funds may be used to address emerging and short-notice Diminishing Manufacturing Sources and Material Shortages (DMSMS) issues.			
FY 2016 Accomplishments: F100-220 and F100-229: - Executed 30+ tasks. Budget addressed engine issues associated with the F-15 and F-16 aircraft. - Addressed engine component redesign, repair/rework procedures, engine maturation and life limit/mission analysis.			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Air Force		Date: May 2017
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207268F / *Aircraft Engine Component Improvement Program*	**Project (Number/Name)** 671012 / *Aircraft Engine Component Improvement Program*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
- Validated redesigned parts and new repair procedures. - Maintained engine flight safety, addressed obsolescence deficiencies, improved system operational readiness (OR) and reliability & maintainability (R&M), reduced engine life cycle costs (LCC), and sustained engines throughout their service life. - Funds may be used to address emerging and short-notice Diminishing Manufacturing Sources and Material Shortages (DMSMS) issues. ***FY 2017 Plans:*** F100-220 and F100-229: - Will execute 30+ tasks. Budget will address engine issues associated with the F-15 and F-16 aircraft. - Address engine component redesign, repair/rework procedures, engine maturation and life limit/mission analysis. - Validate redesigned parts and new repair procedures. - Maintain engine flight safety, address obsolescence deficiencies, improved system operational readiness (OR) and reliability & maintainability (R&M), reduced engine life cycle costs (LCC), and sustain engines throughout their service life. - Funds may be used to address emerging and short-notice Diminishing Manufacturing Sources and Material Shortages (DMSMS) issues. ***FY 2018 Plans:*** F100-220 and F100-229: - Will execute 30+ tasks. Budget will address engine issues associated with the F-15 and F-16 aircraft. - Address engine component redesign, repair/rework procedures, engine maturation and life limit/mission analysis. - Validate redesigned parts and new repair procedures. - Maintain engine flight safety, address obsolescence deficiencies, improved system operational readiness (OR) and reliability & maintainability (R&M), reduced engine life cycle costs (LCC), and sustain engines throughout their service life. - Funds may be used to address emerging and short-notice Diminishing Manufacturing Sources and Material Shortages (DMSMS) issues.			
Title: F110 Aircraft Engine Component Improvement Program ***Description:*** The F101, F110-100, F110-129, F118-100, and F118-101 Engine CIP provides critical developmental engineering support for approximately 2732 engines (including foreign military sales [FMS]) to maintain flight safety (highest priority), to address parts obsolescence, 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. Funds may be used to address emerging and short-notice Diminishing Manufacturing Sources and Material Shortages (DMSMS) issues. ***FY 2016 Accomplishments:*** F101, F110-100, F110-129, F118-100, and F118-101:	12.957	16.237	15.963

Exhibit R-2A, RDT&E Project Justification: FY 2018 Air Force		Date: May 2017
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207268F / *Aircraft Engine Component Improvement Program*	**Project (Number/Name)** 671012 / *Aircraft Engine Component Improvement Program*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
- Executed 35+ tasks. The budget addressed engine issues associated with the B1, B-2, F-15, F-16, and U-2 aircraft. - Addressed safety of flight, engine component redesign, repair/rework procedures, engine maturation and life limit/mission analysis. - Validated redesigned parts and new repair procedures. - Maintained engine flight safety, addressed obsolescence deficiencies, improved system operational readiness (OR) and reliability & maintainability (R&M), reduced engine life cycle costs (LCC), and sustained engines throughout their service life. - Funds may be used to address emerging and short-notice Diminishing Manufacturing Sources and Material Shortages (DMSMS) issues. ***FY 2017 Plans:*** F101, F110-100, F110-129, F118-100, and F118-101: - Will execute 35+ tasks. The budget will address engine issues associated with the B1, B-2, F-15, F-16, and U-2 aircraft. - Address safety of flight, engine component redesign, repair/rework procedures, engine maturation and life limit/mission analysis. - Validate redesigned parts and new repair procedures. - Maintain engine flight safety, address obsolescence deficiencies, improved system operational readiness (OR) and reliability & maintainability (R&M), reduced engine life cycle costs (LCC), and sustain engines throughout their service life. - Funds may be used to address emerging and short-notice Diminishing Manufacturing Sources and Material Shortages (DMSMS) issues. ***FY 2018 Plans:*** F101, F110-100, F110-129, F118-100, and F118-101: - Will execute 35+ tasks. The budget will address engine issues associated with the B1, B-2, F-15, F-16, and U-2 aircraft. - Address safety of flight, engine component redesign, repair/rework procedures, engine maturation and life limit/mission analysis. - Validate redesigned parts and new repair procedures. - Maintain engine flight safety, address obsolescence deficiencies, improved system operational readiness (OR) and reliability & maintainability (R&M), reduced engine life cycle costs (LCC), and sustain engines throughout their service life. - Funds may be used to address emerging and short-notice Diminishing Manufacturing Sources and Material Shortages (DMSMS) issues.			
Title: F119 Aircraft Engine Component Improvement Program ***Description:*** The F119 Engine CIP provides critical developmental engineering support for approximately 475 engines to maintain flight safety (highest priority), to address parts obsolescence, 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. Funds may be used to address emerging and short-notice Diminishing Manufacturing Sources and Material Shortages (DMSMS) issues.	24.512	26.017	25.578

Exhibit R-2A, RDT&E Project Justification: FY 2018 Air Force		Date: May 2017
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207268F / *Aircraft Engine Component Improvement Program*	**Project (Number/Name)** 671012 / *Aircraft Engine Component Improvement Program*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
FY 2016 Accomplishments: F119: - Executed 25+ tasks. The budget addressed engine issues associated with the F-22 aircraft. - Addressed engine component redesign, repair/rework procedures, engine maturation and life limit/mission analysis. - Validated redesigned parts and new repair procedures. - Maintained engine flight safety, addressed obsolescence deficiencies, improved system operational readiness (OR) and reliability & maintainability (R&M), reduced engine life cycle costs (LCC), and sustained engines throughout their service life. - Funds may be used to address emerging and short-notice Diminishing Manufacturing Sources and Material Shortages (DMSMS) issues. ***FY 2017 Plans:*** F119: - Will execute 25+ tasks. The budget will address engine issues associated with the F-22 aircraft. - Address engine component redesign, repair/rework procedures, engine maturation and life limit/mission analysis. - Validate redesigned parts and new repair procedures. - Maintain engine flight safety, address obsolescence deficiencies, improved system operational readiness (OR) and reliability & maintainability (R&M), reduced engine life cycle costs (LCC), and sustain engines throughout their service life. - Funds may be used to address emerging and short-notice Diminishing Manufacturing Sources and Material Shortages (DMSMS) issues. ***FY 2018 Plans:*** F119: - Will execute 25+ tasks. The budget will address engine issues associated with the F-22 aircraft. - Address engine component redesign, repair/rework procedures, engine maturation and life limit/mission analysis. - Validate redesigned parts and new repair procedures. - Maintain engine flight safety, address obsolescence deficiencies, improved system operational readiness (OR) and reliability & maintainability (R&M), reduced engine life cycle costs (LCC), and sustain engines throughout their service life. - Funds may be used to address emerging and short-notice Diminishing Manufacturing Sources and Material Shortages (DMSMS) issues.			
Title: Other Aircraft Engine Component Improvement Program	26.732	29.605	29.103
Description: The Other Engines (e.g., T56, T700, T400, J85, F107, APUs) CIP provides critical developmental engineering support for approximately 13000 engines (including foreign military sales [FMS]) to maintain flight safety (highest priority), to address parts obsolescence, to improve system operational readiness (OR) and reliability & maintainability (R&M), to reduce			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Air Force		Date: May 2017
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207268F / *Aircraft Engine Component Improvement Program*	**Project (Number/Name)** 671012 / *Aircraft Engine Component Improvement Program*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
engine Life Cycle Cost (LCC), and to sustain engines throughout their service life. Funds may be used to address emerging and short-notice Diminishing Manufacturing Sources and Material Shortages (DMSMS) issues. ***FY 2016 Accomplishments:*** Other Engines (e.g., T56, T700, T400, J85, APUs, F107): - Executed 15+ tasks. The budget addressed engine issues associated with the C-130, T38, UH-1N, UH/MH-60/60G aircraft, and aircraft APUs. - Addressed engine component redesign, repair/rework procedures, engine maturation and life limit/mission analysis. - Validated redesigned parts and new repair procedures. - Maintained engine flight safety, addressed obsolescence deficiencies, improved system operational readiness (OR) and reliability & maintainability (R&M), reduced engine life cycle costs (LCC), and sustained engines throughout their service life. - Funds may be used to address emerging and short-notice Diminishing Manufacturing Sources and Material Shortages (DMSMS) issues. ***FY 2017 Plans:*** Other Engines (e.g., T56, T700, T400, J85, APUs, F107): - Will execute 15+ tasks. The budget will address engine issues associated with the C-130, T38, UH-1N, UH/MH-60/60G aircraft, and aircraft APUs. - Address engine component redesign, repair/rework procedures, engine maturation and life limit/mission analysis. - Validate redesigned parts and new repair procedures. - Maintain engine flight safety, address obsolescence deficiencies, improved system operational readiness (OR) and reliability & maintainability (R&M), reduced engine life cycle costs (LCC), and sustain engines throughout their service life. - Funds may be used to address emerging and short-notice Diminishing Manufacturing Sources and Material Shortages (DMSMS) issues. ***FY 2018 Plans:*** Other Engines (e.g., T56, T700, T400, J85, APUs, F107): - Will execute 15+ tasks. The budget will address engine issues associated with the C-130, T38, UH-1N, UH/MH-60/60G aircraft, and aircraft APUs. - Address engine component redesign, repair/rework procedures, engine maturation and life limit/mission analysis. - Validate redesigned parts and new repair procedures. - Maintain engine flight safety, address obsolescence deficiencies, improved system operational readiness (OR) and reliability & maintainability (R&M), reduced engine life cycle costs (LCC), and sustain engines throughout their service life.			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Air Force		Date: May 2017
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207268F / *Aircraft Engine Component Improvement Program*	**Project (Number/Name)** 671012 / *Aircraft Engine Component Improvement Program*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
- Funds may be used to address emerging and short-notice Diminishing Manufacturing Sources and Material Shortages (DMSMS) issues.			
Accomplishments/Planned Programs Subtotals	73.763	78.293	76.969

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Other APPN RELATED ACTIVITIES

(U) - PEs 0203752A and 0205633N, Army/Navy Aircraft Engine CIPs

D. Acquisition Strategy

Sole Source Indefinite Delivery/Indefinite Quantity (IDIQ) contracts to 3 Original Equipment Manufacturers (OEMs), and DoD agencies with a 5-year ordering period and 7-year delivery period. Supports multiple tasks to accomplish CIP for more than 23 engine models.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Air Force		Date: May 2017
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207268F / *Aircraft Engine Component Improvement Program*	**Project (Number/Name)** 671012 / *Aircraft Engine Component Improvement Program*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Aircraft Engine CIP:Develop aircraft engine improvements - F110/F101/F118	SS/CPFF	GE : Evendale, OH	-	17.180	Dec 2015	17.162	Dec 2016	16.873	Dec 2017	0.000		16.873	Continuing	Continuing	-
Aircraft Engine CIP: Develop aircraft engine improvements-F100/F119/ TF33	SS/CPFF	Pratt & Whitney : Hartford, CT	-	36.775	Dec 2015	41.337	Dec 2016	40.606	Dec 2017	0.000		40.606	Continuing	Continuing	-
Aircraft Engine CIP: Develop aircraft engine improvements-TF34/J85/ T700	SS/CPFF	GE : Lynn, MA	-	4.638	Dec 2015	4.272	Dec 2016	4.200	Dec 2017	0.000		4.200	Continuing	Continuing	-
Aircraft Engine CIP: Develop aircraft engine improvements-T56	SS/CPFF	Rolls Royce : Indianapolis, IN	-	2.377	Dec 2015	1.120	Dec 2016	1.101	Dec 2017	0.000		1.101	Continuing	Continuing	-
Aircraft Engine CIP: Develop aircraft auxiliary power unit improvements	SS/CPFF	Honeywell : Phoenix, AZ	-	4.589	Dec 2015	4.610	Dec 2016	4.532	Dec 2017	0.000		4.532	Continuing	Continuing	-
Aircraft Engine CIP: Develop engine improvements-F107	SS/CPFF	Teledyne : Toledo, OH	-	1.856	Sep 2016	4.365	Dec 2016	4.291	Dec 2017	0.000		4.291	Continuing	Continuing	-
		Subtotal	-	67.415		72.866		71.603		0.000		71.603	-	-	-

Remarks

FY18 increases due to inflation adjustments.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Aircraft Engine CIP: Non-OEM CIP Tasks	Various	Various : Various	-	1.568	Oct 2015	0.220	Oct 2016	0.216	Oct 2017	0.000		0.216	Continuing	Continuing	-
		Subtotal	-	1.568		0.220		0.216		0.000		0.216	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Air Force			Date: May 2017
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207268F / *Aircraft Engine Component Improvement Program*	Project (Number/Name) 671012 / *Aircraft Engine Component Improvement Program*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Non-OEM CIP Tasks refer to work in support of Engine CIP.
FY18 increases due to inflation adjustments.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Aircraft Engine CIP: Ground test and validate engine improvements	PO	AEDC : Arnold AFB, TN	-	1.972	Oct 2015	1.860	Oct 2016	1.860	Oct 2017	0.000		1.860	Continuing	Continuing	-
		Subtotal	-	1.972		1.860		1.860		0.000		1.860	-	-	-

Remarks

Fuel costs for contractor-performed T&E are included in the applicable contract.
FY18 increases due to inflation adjustments.

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Aircraft Engine CIP: PMA	Various	Various : Various	-	1.141	Oct 2015	1.737	Oct 2016	1.707	Oct 2017	0.000		1.707	Continuing	Continuing	-
Aircraft Engine CIP: In House Support/Misc	Various	Various : Various	-	1.667	Oct 2015	1.610	Oct 2016	1.583	Oct 2017	0.000		1.583	Continuing	Continuing	-
		Subtotal	-	2.808		3.347		3.290		0.000		3.290	-	-	-

Remarks

PMA Description: Program Management support, travel, and A&AS.
FY18 increases due to inflation adjustments.

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Air Force			Date: May 2017
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207268F / *Aircraft Engine Component Improvement Program*	Project (Number/Name) 671012 / *Aircraft Engine Component Improvement Program*	

	Prior Years	FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	73.763		78.293		76.969		0.000		76.969	-	-	-

Remarks

FY18 increases due to inflation adjustments.

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Air Force		Date: May 2017
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207268F / *Aircraft Engine Component Improvement Program*	**Project (Number/Name)** 671012 / *Aircraft Engine Component Improvement Program*

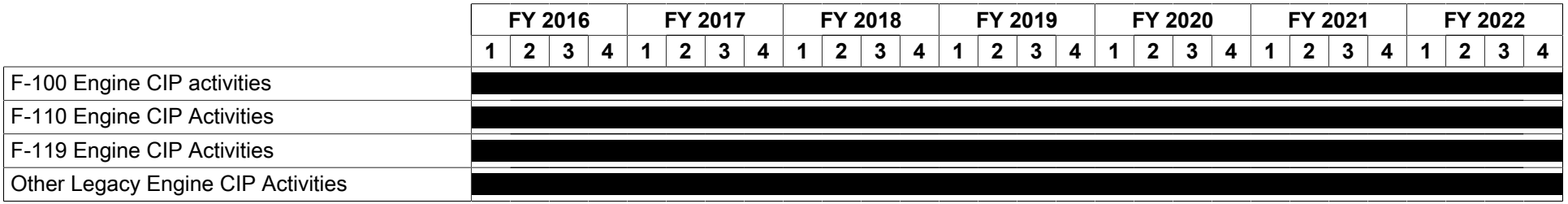

Exhibit R-4A, RDT&E Schedule Details: FY 2018 Air Force		Date: May 2017
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207268F / *Aircraft Engine Component Improvement Program*	**Project (Number/Name)** 671012 / *Aircraft Engine Component Improvement Program*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
F-100 Engine CIP activities	1	2016	4	2022
F-110 Engine CIP Activities	1	2016	4	2022
F-119 Engine CIP Activities	1	2016	4	2022
Other Legacy Engine CIP Activities	1	2016	4	2022

Note

Traditional schedule does not lend itself to Engine CIP activities.

Exhibit R-2A, RDT&E Project Justification: FY 2018 Air Force			Date: May 2017
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207268F / *Aircraft Engine Component Improvement Program*	Project (Number/Name) 675365 / *F135 Aircraft Engine Component Improvement Program*	

COST ($ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
675365: *F135 Aircraft Engine Component Improvement Program*	-	30.329	31.566	32.274	0.000	32.274	32.802	33.412	33.992	34.687	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The F135 Aircraft Engine Component Improvement Program (CIP) supports F-35 single-engine fighter propulsion system. It provides the only source of critical developmental engineering support for the F135 propulsion system. F135 CIP maintains flight safety (highest priority), corrects service revealed deficiencies, improves system Operational Readiness (OR) and Reliability & Maintainability (R&M), reduces propulsion system Life Cycle Cost (LCC), and sustains the propulsion system throughout its service life. Historically, aircraft systems change missions, tactics, and environment (including new fuels) and meet changing threats throughout their lives. New technical problems can develop in the propulsion system through actual use and the F135 CIP provides the means to develop fixes for these problems. F135 CIP funding is driven by field events and type/maturity of the propulsion system, not by the total quantity of engines. The program starts with government acceptance of the first procurement-funded engine and continues over the propulsion system's life, gradually decreasing to a minimum level (safety/depot repairs) sufficient to keep older engines operational. F135 CIP, through "Lead the Fleet" operational use and accelerated mission testing, identifies and fixes propulsion-related problems ahead of operational impacts. F135 CIP ensures continued improvements in R&M, which reduce out year support costs. Historically, R&M related CIP efforts significantly reduce out year O&M and spares costs.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Title: F135 Aircraft Engine Improvement Program	30.329	31.566	32.274
Description: The Aircraft Engine Component Improvement Program (CIP) provides the only source of critical developmental engineering support for F-35 propulsion systems to maintain flight safety (highest priority) for this single-engine fighter, correct service revealed deficiencies, improve system operational readiness (OR) and reliability & maintainability (R&M), reduce engine Life Cycle Cost (LCC), and sustain engines throughout their service life. Funds may be used to address emerging and short-notice Diminishing Manufacturing Sources and Material Shortages (DMSMS) issues.			
FY 2016 Accomplishments: - Executed approximately 25+ AF-funded F135 engine tasks supporting initial flying operations. - Addressed safety of flight, engine component redesign, repair/rework procedures and life limit/mission analysis. - Validated redesigned parts and new repair procedures. - Maintained/improved engine flight safety, improve system operational readiness and reliability & maintainability, reduce engine life cycle cost, and sustain engine throughout service life.			
FY 2017 Plans:			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Air Force		Date: May 2017
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207268F / *Aircraft Engine Component Improvement Program*	**Project (Number/Name)** 675365 / *F135 Aircraft Engine Component Improvement Program*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
- Execute approximately 25+ AF-funded F135 engine tasks supporting initial flying operations. - Conduct accelerated mission test and analytical condition inspection. - Address safety of flight, engine component redesign, repair/rework procedures and life limit/mission analysis. - Validate redesigned parts and new repair procedures. - Maintain/improve engine flight safety, improve system operational readiness and reliability & maintainability, reduce engine life cycle cost, and sustain engine throughout service life. - Funds may be used to address emerging and short-notice Diminishing Manufacturing Sources and Material Shortages (DMSMS) issues.			
FY 2018 Plans: - Execute approximately 25+ AF-funded F135 engine tasks supporting initial flying operations. - Conduct accelerated mission test and analytical condition inspection. - Address safety of flight, engine component redesign, repair/rework procedures and life limit/mission analysis. - Validate redesigned parts and new repair procedures. - Maintain/improve engine flight safety, improve system operational readiness and reliability & maintainability, reduce engine life cycle cost, and sustain engine throughout service life. - Funds may be used to address emerging and short-notice Diminishing Manufacturing Sources and Material Shortages (DMSMS) issues.			
Accomplishments/Planned Programs Subtotals	30.329	31.566	32.274

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Program Element 0205633N provides US Navy funding support for the F135 propulsion system.

D. Acquisition Strategy

Contracts within this program are projected to be awarded sole source to engine manufacturer. F-135 Engine CIP tasks are generally assigned to the original engine manufacturer based on available funding and prioritization of candidates.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Air Force			Date: May 2017
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207268F / *Aircraft Engine Component Improvement Program*	**Project (Number/Name)** 675365 / *F135 Aircraft Engine Component Improvement Program*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Aircraft Engine CIP: Develop F135 engine improvements	SS/CPFF	Pratt & Whitney : Hartford, CT	-	22.068	Jan 2016	22.804	Jan 2017	16.573	Jan 2018	0.000		16.573	Continuing	Continuing	-
		Subtotal	-	22.068		22.804		16.573		0.000		16.573	-	-	-

Remarks

FY18 Cost increase ($93K) due to adjustment for inflation

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Aircraft Engine CIP: Ground test and validate engine improvements	PO	AEDC : Arnold AFB, TN	-	7.909	Oct 2015	8.464	Oct 2016	15.400	Oct 2017	0.000		15.400	Continuing	Continuing	-
		Subtotal	-	7.909		8.464		15.400		0.000		15.400	-	-	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Aircraft Engine CIP: PMA	Various	Various : Various	-	0.352	Oct 2015	0.298	Oct 2016	0.301	Oct 2017	0.000		0.301	Continuing	Continuing	-
		Subtotal	-	0.352		0.298		0.301		0.000		0.301	-	-	-

Remarks

PMA Description: Program Management support, travel, and A&AS.

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Air Force			Date: May 2017
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207268F / *Aircraft Engine Component Improvement Program*	**Project (Number/Name)** 675365 / *F135 Aircraft Engine Component Improvement Program*	

	Prior Years	FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	30.329		31.566		32.274		0.000		32.274	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Air Force		Date: May 2017
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207268F / *Aircraft Engine Component Improvement Program*	**Project (Number/Name)** 675365 / *F135 Aircraft Engine Component Improvement Program*

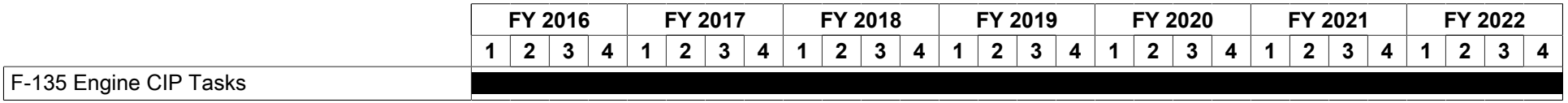

Exhibit R-4A, RDT&E Schedule Details: FY 2018 Air Force		Date: May 2017
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207268F / *Aircraft Engine Component Improvement Program*	**Project (Number/Name)** 675365 / *F135 Aircraft Engine Component Improvement Program*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
F-135 Engine CIP Tasks	1	2016	4	2022