Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Air Force											Date: February 2016	
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 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	93.160	103.942	109.859	0.000	109.859	108.928	111.072	113.299	115.468	Continuing	Continuing
671012: *Aircraft Engine Component Improvement Program*	-	78.674	72.603	78.293	0.000	78.293	76.747	78.283	79.902	81.479	Continuing	Continuing
675365: *F-35*	-	14.486	31.339	31.566	0.000	31.566	32.181	32.789	33.397	33.989	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Aircraft Engine Component Improvement Program (CIP) provides the only source of critical developmental engineering support for in-service Air Force engines to maintain flight safety (highest priority), 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.

Historically, aircraft systems change missions, tactics, and environments (including new fuels) to meet changing threats throughout their life cycle. 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 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 inventory engines operational. Engine CIP, through "Lead the Fleet" operational use and accelerated mission testing, identifies 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, 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.

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: PB 2017 Air Force					Date: February 2016
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 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**
Previous President's Budget	94.177	103.942	110.954	0.000	110.954
Current President's Budget	93.160	103.942	109.859	0.000	109.859
Total Adjustments	-1.017	0.000	-1.095	0.000	-1.095
• 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	2.091	0.000			
• SBIR/STTR Transfer	-3.108	0.000			
• Other Adjustments	0.000	0.000	-1.095	0.000	-1.095

Change Summary Explanation

FY15 reprogramming to fund two newly identified safety of flight items associated with the F118 U-2 engine and the J85 T-38 engine component design.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Air Force			Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
671012: *Aircraft Engine Component Improvement Program*	-	78.674	72.603	78.293	0.000	78.293	76.747	78.283	79.902	81.479	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 developmental 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 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 inventory engines operational. Engine CIP, through "Lead the Fleet" operational use and accelerated mission testing, identifies 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, 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.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: F100 Aircraft Engine Component Improvement Program	8.814	7.469	8.058	0.000	8.058
Description: The F100-220 and F100-229 Engine CIP provides critical sustainment 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. ***FY 2015 Accomplishments:*** F100-220 and F100-229: - Executed 30+ tasks. Majority of the 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. - Validated redesigned parts and new repair procedures.					

Exhibit R-2A, RDT&E Project Justification: PB 2017 Air Force		Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
- 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. ***FY 2016 Plans:*** F100-220 and F100-229: - Will execute 30+ tasks. Majority of the 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. ***FY 2017 Base Plans:*** F100-220 and F100-229: - Will execute 30+ tasks. Majority of the 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. ***FY 2017 OCO Plans:*** N/A					
Title: F110 Aircraft Engine Component Improvement Program ***Description:*** The F101, F110-100, F110-129, F118-100, and F118-101 Engine CIP provides critical sustainment 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	15.968	16.146	17.422	0.000	17.422

Exhibit R-2A, RDT&E Project Justification: PB 2017 Air Force		Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
reliability & maintainability (R&M), to reduce engine Life Cycle Cost (LCC), and to sustain engines throughout their service life. ***FY 2015 Accomplishments:*** F101, F110-100, F110-129, F118-100, and F118-101: - 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. ***FY 2016 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. ***FY 2017 Base 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.					

Exhibit R-2A, RDT&E Project Justification: PB 2017 Air Force		Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
- 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. ***FY 2017 OCO Plans:*** N/A					
Title: F119 Aircraft Engine Component Improvement Program ***Description:*** The F119 Engine CIP provides critical sustainment 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. ***FY 2015 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. ***FY 2016 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. ***FY 2017 Base Plans:*** F119:	43.926	23.506	25.372	0.000	25.372

Exhibit R-2A, RDT&E Project Justification: PB 2017 Air Force		Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
- 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. ***FY 2017 OCO Plans:*** N/A					
Title: All Other Aircraft Engine Component Improvement Program ***Description:*** The All Other Engines (e.g., T56, T700, T400, J85, APUs) CIP provides critical sustainment 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 engine Life Cycle Cost (LCC), and to sustain engines throughout their service life. ***FY 2015 Accomplishments:*** All Other Engines (e.g., T56, T700, T400, J85, APUs): - 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 ***FY 2016 Plans:*** All Other Engines (e.g., T56, T700, T400, J85, APUs: - 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.	9.966	25.482	27.441	0.000	27.441

Exhibit R-2A, RDT&E Project Justification: PB 2017 Air Force		Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
- 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. ***FY 2017 Base Plans:*** All Other Engines (e.g., T56, T700, T400, J85, APUs: - 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. ***FY 2017 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	78.674	72.603	78.293	0.000	78.293

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) with a 5-year ordering period and 7-year delivery period. Supports multiple tasks to accomplish CIP for more than 23 engine models.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Air Force		Date: February 2016
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*

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: PB 2017 Air Force		Date: February 2016
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 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 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	-	13.864	Feb 2015	15.110	Dec 2015	16.294	Dec 2016	0.000		16.294	Continuing	Continuing	-
Aircraft Engine CIP: Develop aircraft engine improvements-F100/F119/ TF33	SS/CPFF	Pratt & Whitney : Hartford, CT	-	53.554	Feb 2015	37.034	Dec 2015	39.936	Dec 2016	0.000		39.936	Continuing	Continuing	-
Aircraft Engine CIP: Develop aircraft engine improvements-TF34/J85/ T700	SS/CPFF	GE : Lynn, MA	-	4.498	Mar 2015	5.844	Dec 2015	6.302	Dec 2016	0.000		6.302	Continuing	Continuing	-
Aircraft Engine CIP: Develop aircraft engine improvements-T56	SS/CPFF	Rolls Royce : Indianapolis, IN	-	0.827	Feb 2015	3.784	Dec 2015	4.081	Dec 2016	0.000		4.081	Continuing	Continuing	-
Aircraft Engine CIP: Develop aircraft auxiliary power unit improvements	SS/CPFF	Honeywell : Phoenix, AZ	-	1.132	May 2015	4.526	Dec 2015	4.881	Dec 2016	0.000		4.881	Continuing	Continuing	-
		Subtotal	-	73.875		66.298		71.494		0.000		71.494	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Aircraft Engine CIP: Non-OEM CIP Tasks	Various	Various : Various	-	0.797	Oct 2014	1.167	Oct 2015	1.258	Oct 2016	0.000		1.258	Continuing	Continuing	-
		Subtotal	-	0.797		1.167		1.258		0.000		1.258	-	-	-

Remarks

Non-OEM CIP Tasks refer to work in support of Engine CIP.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Air Force		Date: February 2016
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*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 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	-	1.550	Oct 2014	2.600	Oct 2015	2.804	Oct 2016	0.000		2.804	Continuing	Continuing	-
		Subtotal	-	1.550		2.600		2.804		0.000		2.804	-	-	-

Remarks

Fuel costs for contractor-performed T&E are included in the applicable contract.

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Aircraft Engine CIP: PMA	Various	Various : Various	-	1.017	Oct 2014	1.442	Oct 2015	1.555	Oct 2016	0.000		1.555	Continuing	Continuing	-
Aircraft Engine CIP: In House Support/Misc	Various	Various : Various	-	1.435	Oct 2014	1.096	Oct 2015	1.182	Oct 2016	0.000		1.182	Continuing	Continuing	-
		Subtotal	-	2.452		2.538		2.737		0.000		2.737	-	-	-

Remarks

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

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	78.674		72.603		78.293		0.000		78.293	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Air Force		Date: February 2016
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*

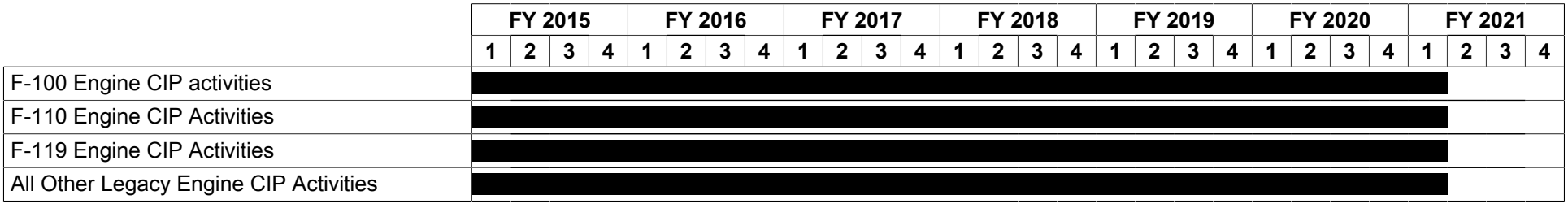

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Air Force		Date: February 2016
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207268F / *Aircraft Engine Component Improvement Program*	**Project (Number/Name)** 671012 / *Aircraft Engine Component Improvement Program*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
F-100 Engine CIP activities	1	2015	1	2021
F-110 Engine CIP Activities	1	2015	1	2021
F-119 Engine CIP Activities	1	2015	1	2021
All Other Legacy Engine CIP Activities	1	2015	1	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Air Force			Date: February 2016
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207268F / *Aircraft Engine Component Improvement Program*	Project (Number/Name) 675365 / *F-35*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
675365: *F-35*	-	14.486	31.339	31.566	0.000	31.566	32.181	32.789	33.397	33.989	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), to correct service revealed deficiencies, to improve system Operational Readiness (OR) and Reliability & Maintainability (R&M), to reduce propulsion system Life Cycle Cost (LCC), and sustain 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 field problems. F135 CIP funding is driven by field events and type/maturity of the propulsion system, not by the total quantity. 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 inventory 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 addresses out-of-warranty usage/life and enables the Air Force to obtain additional warranties when the manufacturer incorporate F135 CIP improvements into production. F135 CIP ensures continued improvements in R&M, which reduce out year support costs. Historically, R&M related F135 CIP efforts significantly reduce out year O&M and spares costs.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: Aircraft Engine Component Improvement Program (F135)	14.486	31.339	31.566	0.000	31.566
Description: The Aircraft Engine Component Improvement Program (CIP) provides the only source of critical sustainment engineering support for F-35 propulsion systems to maintain flight safety for this single-engine fighter (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.					
FY 2015 Accomplishments: - Executed approximately 11 AF-funded F135 engine tasks supporting initial flying operations. - Conducted accelerated mission test and analytical condition inspection. - Completed first full hot section interval. - Address safety of flight, engine component redesign, repair/rework procedures and life limit/mission analysis.					

Exhibit R-2A, RDT&E Project Justification: PB 2017 Air Force		Date: February 2016
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207268F / *Aircraft Engine Component Improvement Program*	**Project (Number/Name)** 675365 / *F-35*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
- Maintained/improved engine flight safety, improve system operational readiness and reliability & maintainability, reduce engine life cycle cost, and sustain engine throughout service life. ***FY 2016 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. ***FY 2017 Base 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. ***FY 2017 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	14.486	31.339	31.566	0.000	31.566

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Program Element 0205633N provides US Navy funding support for 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.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Air Force		Date: February 2016
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207268F / *Aircraft Engine Component Improvement Program*	**Project (Number/Name)** 675365 / *F-35*

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: PB 2017 Air Force			Date: February 2016
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207268F / *Aircraft Engine Component Improvement Program*	**Project (Number/Name)** 675365 / *F-35*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Aircraft Engine CIP: Develop F135 engine improvements	SS/CPFF	Pratt & Whitney : Hartford, CT	-	11.331	Mar 2015	23.543	Jan 2016	15.868	Jan 2017	0.000		15.868	Continuing	Continuing	-
		Subtotal	-	11.331		23.543		15.868		0.000		15.868	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 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 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 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	-	2.925	Oct 2014	7.500	Oct 2015	15.400	Oct 2016	0.000		15.400	Continuing	Continuing	-
		Subtotal	-	2.925		7.500		15.400		0.000		15.400	-	-	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Aircraft Engine CIP: PMA	Various	Various : Various	-	0.230	Oct 2014	0.296	Oct 2015	0.298	Oct 2016	0.000		0.298	Continuing	Continuing	-
Aircraft Engine CIP: In House Support/Misc	Various	Various : Various	-	0.000		0.000	Oct 2015	0.000	Oct 2016	0.000		0.000	Continuing	Continuing	-
		Subtotal	-	0.230		0.296		0.298		0.000		0.298	-	-	-

Remarks

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

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Air Force			Date: February 2016
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207268F / *Aircraft Engine Component Improvement Program*	Project (Number/Name) 675365 / *F-35*	

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	14.486		31.339		31.566		0.000		31.566	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Air Force		Date: February 2016
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207268F / *Aircraft Engine Component Improvement Program*	**Project (Number/Name)** 675365 / *F-35*

	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
F-135 Engine CIP Tasks	[redacted]																											

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Air Force		Date: February 2016
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207268F / *Aircraft Engine Component Improvement Program*	**Project (Number/Name)** 675365 / *F-35*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
F-135 Engine CIP Tasks	1	2015	1	2021