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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army DATE: April 2013

APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE							
2040: Research, Development, Test & Evaluation, Army BA 7: Operational Systems Development					PE 0203752A: Aircraft Engine Component Improvement Program							
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	0.800	0.898	0.315	-	0.315	0.387	0.370	0.331	0.145	Continuing	Continuing
106: A/C COMPON IMPROV PROG	-	0.800	0.898	0.315	-	0.315	0.387	0.370	0.331	0.145	Continuing	Continuing

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

The Aircraft Engine Component Improvement Program (CIP) is included in the RDTE budget vice procurement appropriations in accordance with congressional direction. The majority of CIP funding has been reallocated to PE 273744 beginning in FY07.

A. Mission Description and Budget Item Justification

Aircraft Engine Component Improvement Program (CIP) develops, tests, and qualifies improvements to aircraft engine components to correct service-revealed deficiencies, improve flight safety, enhance readiness and reduce operating and support (O&S) costs. In addition, CIP provides the test vehicles for the testing and qualification efforts required as a part of the Army's Critical Safety Item (CSI) program. CIP is included in the RDTE budget vice procurement appropriations in accordance with congressional direction. The majority of CIP funding has been reallocated to PE 273744 beginning in FY07. Non-program specific Auxiliary Power Unit (APU) as well as Unmanned Aerial Vehicle (UAV) safety and readiness issues will continue to be addressed under this PE.

B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	0.822	0.898	0.423	-	0.423
Current President's Budget	0.800	0.898	0.315	-	0.315
Total Adjustments	-0.022	0.000	-0.108	-	-0.108
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.022	-			
• Other Adjustments 1	-	-	-0.108	-	-0.108

UNCLASSIFIED

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APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 7: Operational Systems Development					R-1 ITEM NOMENCLATURE PE 0203752A: Aircraft Engine Component Improvement Program				PROJECT 106: A/C COMPON IMPROV PROG			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
106: A/C COMPON IMPROV PROG	-	0.800	0.898	0.315	-	0.315	0.387	0.370	0.331	0.145	Continuing	Continuing
Quantity of RDT&E Articles												
# FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012												
## The FY 2014 OCO Request will be submitted at a later date												
Note												
The Aircraft Engine Component Improvement Program (CIP) is included in the RDTE budget vice procurement appropriations in accordance with congressional direction. The majority of CIP funding has been reallocated to PE 273744 beginning in FY07.												
A. Mission Description and Budget Item Justification												
Aircraft Engine Component Improvement Program (CIP) develops, tests, and qualifies improvements to aircraft engine components to correct service-revealed deficiencies, improve flight safety, enhance readiness and reduce operating and support (O&S) costs. In addition, CIP provides the test vehicles for the testing and qualification efforts required as a part of the Army's Critical Safety Item (CSI) program. Non-program specific Auxiliary Power Unit (APU) as well as Unmanned Aerial Vehicle (UAV) safety and readiness issues will continue to be addressed under this PE.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2012	FY 2013	FY 2014	
Title: T700 Engine									0.321	0.349	0.100	
									0	0		
Description: Majority of funding for this program has been reallocated to PE 273744. Previously, this program addressed flight safety and readiness problems that arise in the field by providing timely engineering support, continued the development of the T700-GE-701D, provided engineering support of fielded engines to enhance war fighting capability and improve durability and reliability while reducing cost of ownership.												
FY 2012 Accomplishments:												
Continued the overspeed and burst qualification test effort and finished the heat rejection report for the T700-GE-701D engine. Started the qualification report effort for the Improved Durability (Ruggedized) Blisk which will increase engine time on wing.												
FY 2013 Plans:												
Will start efforts to perform an instrumented engine test to measure gas generator turbine hardware metal temperatures. Will evaluate clean air combustor shield hardware for redesign effort												
FY 2014 Plans:												

UNCLASSIFIED

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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203752A: <i>Aircraft Engine Component Improvement Program</i>	PROJECT 106: <i>A/C COMPON IMPROV PROG</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013
Will continue an instrumented engine test to measure gas generator turbine hardware metal temperatures. Will evaluate clean air combustor shield hardware for redesign effort.			FY 2014
Title: T55 Engine Description: Provide timely support to field users, applying engineering effort to resolve unanticipated flight safety problems revealed in the field. Continue the engineering support of fielded engines to enhance war-fighting capability, improve durability and reliability while reducing CH-47 engine cost of ownership. FY 2012 Accomplishments: Continued the 1553 ECU effort for F Model incorporation. FY 2013 Plans: Will continue ECU Software Block Update to improve ECU functionality and address field software issues FY 2014 Plans: Will complete ECU Software Block Update to improve ECU functionality and address field software issues		0.299 0	0.349 0
Title: GTCP36 Auxiliary Power Unit (APU) Description: Provide timely responses to technical problems arising in the field during operational use. Review operational and repair reports, perform engineering analysis of failed engines and equipment. Perform investigation and testing as required to isolate/verify reported field problems and service revealed deficiencies (SRDs). FY 2012 Accomplishments: Addressed service revealed deficiencies that affect safe operation of the GTCP 36 series APUs. FY 2013 Plans: Will coontinue formulating correlation factors to published life limits and will address service revealed deficiencies that affect safe operation of the GTCP 36 APU FY 2014 Plans: Will complete formulating correlation factors to published life limits and will address service revealed deficiencies that affect safe operation of the GTCP 36 APU.		0.030 0	0.015 0
Title: T62 Auxiliary Power Unit (APU) Description: Provide timely responses to technical problems arising in the field during operational use. Review operational and repair reports, perform engineering analysis of failed engines and equipment. Perform investigation and testing as required to isolate/verify reported field problems and service revealed deficiencies (SRDs). FY 2012 Accomplishments: Addressed service revealed deficiencies that affect safe operation of the GTCP 36 series APUs. FY 2013 Plans: Will coontinue formulating correlation factors to published life limits and will address service revealed deficiencies that affect safe operation of the GTCP 36 APU FY 2014 Plans: Will complete formulating correlation factors to published life limits and will address service revealed deficiencies that affect safe operation of the GTCP 36 APU.		0.030 0	0.020 0

UNCLASSIFIED

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APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0203752A: Aircraft Engine Component Improvement Program	PROJECT 106: A/C COMPON IMPROV PROG		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
Description: Provide timely responses to technical problems arising in the field during operational use. Review operational and repair reports, perform engineering analysis of failed engines and equipment. Perform investigation and testing as required to isolate/verify reported field problems and service revealed deficiencies (SRDs). FY 2012 Accomplishments: Finished the qualification tests for the Flex Fuel Manifolds. Address service revealed deficiencies affecting safe operation of the T-62T series APUs. FY 2013 Plans: Will continue to address service revealed deficiencies affecting safe operation of US Army APUs FY 2014 Plans: Will continue to address service revealed deficiencies affecting safe operation of US Army APUs.				
Title: UAV Shadow Engine Articles: Description: UAV Shadow Engine Investigation at U.S. Army Research Laboratory (ARL) Cleveland: US Army Vehicle Technology Directorate (VTD) at ARL Cleveland. Provide research to support airworthiness, reliability and performance improvements of the Unmanned Aerial Vehicle (UAV) shadow engine. Investigate and research the technology challenges (i.e. engine performance, engine durability, engine life, and engine modifications) for reliable engine operation using JP-8 fuel and readily available MIL-spec lubricants. FY 2012 Accomplishments: Continued to research improvements to address service related deficiencies. FY 2013 Plans: Will continue to research improvements to address service related deficiencies to improve safety and reduce O&S costs. FY 2014 Plans: Will continue to research improvements to address service related deficiencies to improve safety and reduce O&S costs.		0.070 0	0.060 0	0.020
Title: In-House Support Articles: Description: In-house support for the CIP engineers. Contracting support for CIP contracts. FY 2012 Accomplishments:		0.050 0	0.080 0	0.060

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013	
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0203752A: <i>Aircraft Engine Component Improvement Program</i>	PROJECT 106: <i>A/C COMPON IMPROV PROG</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013
Provided in-house support for the CIP engineers and contracting support for CIP contracts.			
FY 2013 Plans: Will continue to provide in-house support for the CIP engineers and contracting support for CIP contracts			
FY 2014 Plans: Will continue to provide in-house support for the CIP engineers and contracting support for CIP contracts.			
Accomplishments/Planned Programs Subtotals		0.800	0.898
C. Other Program Funding Summary (\$ in Millions) N/A			
Remarks			
D. Acquisition Strategy Improved designs will be implemented via Engineering Change Proposal (ECP) and follow-on procurement or modification to a production contract to introduce the improved hardware.			
E. Performance Metrics Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.			

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 7: Operational Systems Development						R-1 ITEM NOMENCLATURE PE 0203752A: Aircraft Engine Component Improvement Program						PROJECT 106: A/C COMPON IMPROV PROG			
Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
In-house Engineering	WR	AMRDEC:Redstone Arsenal, AL	2.250	0.050	Dec 2011	0.080	Jan 2013	0.060	Jan 2014	-		0.060	Continuing	Continuing	Continuing
Subtotal			2.250	0.050		0.080		0.060		0.000		0.060			
Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
T700 Engine	SS/IDIQ	GE-Air:Lynn, MA	61.311	0.321	Feb 2012	0.349	Jan 2013	0.100	Jan 2014	-		0.100	Continuing	Continuing	Continuing
T55 Engine	SS/IDIQ	Honeywell:Phoenix, AZ	29.262	0.299	Feb 2012	0.349	Jan 2013	0.100	Jan 2014	-		0.100	Continuing	Continuing	Continuing
APU's	SS/IDIQ	Air Force:Kelly AFB, TX	13.647	-		-		0.015	Jan 2014	-		0.015	Continuing	Continuing	0.000
UAV Shadow Engine	Various	ARL-Vehicle Technology Directorate:TBD	0.067	0.070	Feb 2012	0.060	Jan 2013	0.020	Jan 2014	-		0.020	Continuing	Continuing	0.000
APU's	SS/IDIQ	Air Force:Hill AFB, UT	2.259	0.060	Feb 2012	0.060	Jan 2013	0.020	Jan 2014	-		0.020	Continuing	Continuing	Continuing
Subtotal			106.546	0.750		0.818		0.255		0.000		0.255			
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
T-62T-2B Vibration Test	Various	Redstone Technical Text Center:Redstone Arsenal, AL	0.050	-		-		-		-		-	Continuing	Continuing	0.000
Subtotal			0.050	0.000		0.000		0.000		0.000		0.000			0.000
Remarks Not Applicable															

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army											DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 7: Operational Systems Development					R-1 ITEM NOMENCLATURE PE 0203752A: Aircraft Engine Component Improvement Program					PROJECT 106: A/C COMPON IMPROV PROG				
		All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		108.846	0.800		0.898		0.315		0.000		0.315			

Remarks

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army										DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE					PROJECT			
2040: <i>Research, Development, Test & Evaluation, Army</i>					PE 0203752A: <i>Aircraft Engine Component Improvement Program</i>					106: <i>A/C COMPON IMPROV PROG</i>			
BA 7: <i>Operational Systems Development</i>													

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
T700 Engine Temperature Survey																												
T55 Engine 1553 Engine Control Unit (ECU)																												
T55 Engine ECU BLock Upgrade																												
Auxiliary Power Units (APUs)																												
UAV Shadow Engine																												

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army			DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203752A: <i>Aircraft Engine Component Improvement Program</i>	PROJECT 106: <i>A/C COMPON IMPROV PROG</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
T700 Engine Temperature Survey	2	2014	2	2016
T55 Engine 1553 Engine Control Unit (ECU)	2	2012	1	2013
T55 Engine ECU BLock Upgrade	2	2014	4	2015
Auxiliary Power Units (APUs)	1	2014	4	2014
UAV Shadow Engine	3	2014	1	2015