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Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Army									DATE: February 2010		
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							
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	0.326	0.788	0.710	0.000	0.710	0.852	0.900	0.428	0.333	Continuing	Continuing
106: A/C COMPON IMPROV PROG	0.326	0.788	0.710	0.000	0.710	0.852	0.900	0.428	0.333	Continuing	Continuing
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 Flight Safety Parts 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) safety and readiness issue will continue to be addressed under this PE.											
B. Program Change Summary (\$ in Millions)											
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total						
Previous President's Budget	0.331	0.792	0.714	0.000	0.714						
Current President's Budget	0.326	0.788	0.710	0.000	0.710						
Total Adjustments	-0.005	-0.004	-0.004	0.000	-0.004						
• Congressional General Reductions		0.000									
• Congressional Directed Reductions		0.000									
• Congressional Rescissions	0.000	0.000									
• Congressional Adds		0.000									
• Congressional Directed Transfers		0.000									
• Reprogrammings	0.000	0.000									
• SBIR/STTR Transfer	0.000	0.000									
• Adjustments to Budget Years	-0.005	-0.004	-0.004	0.000	-0.004						
Change Summary Explanation											
Funds realigned to higher priority requirements.											

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2011 Army								<b>DATE:</b> February 2010			
<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>				<b>R-1 ITEM NOMENCLATURE</b> PE 0203752A: <i>Aircraft Engine Component Improvement Program</i>				<b>PROJECT</b> 106: <i>A/C COMPON IMPROV PROG</i>			
<b>COST (\$ in Millions)</b>	<b>FY 2009 Actual</b>	<b>FY 2010 Estimate</b>	<b>FY 2011 Base Estimate</b>	<b>FY 2011 OCO Estimate</b>	<b>FY 2011 Total Estimate</b>	<b>FY 2012 Estimate</b>	<b>FY 2013 Estimate</b>	<b>FY 2014 Estimate</b>	<b>FY 2015 Estimate</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
106: <i>A/C COMPON IMPROV PROG</i>	0.326	0.788	0.710	0.000	0.710	0.852	0.900	0.428	0.333	Continuing	Continuing
Quantity of RDT&E Articles											
<b>Note</b> Not applicable for this item.											
<b>A. Mission Description and Budget Item Justification</b> 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 Flight Safety Parts 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) safety and readiness issue will continue to be addressed under this PE.											
<b>B. Accomplishments/Planned Program (\$ in Millions)</b>											
							<b>FY 2009</b>	<b>FY 2010</b>	<b>FY 2011 Base</b>	<b>FY 2011 OCO</b>	<b>FY 2011 Total</b>
Program #1  T700 Engine: As of FY07, 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. FY09 effort provided minimal support to resolve Flight Safety and Engineering issues.  <i>FY 2009 Accomplishments:</i> FY 2009  <i>FY 2010 Plans:</i> FY 2010							0.046	0.000	0.000	0.000	0.000

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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 Program (\$ in Millions)					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2011 Base Plans: FY 2011 Base					
FY 2011 OCO Plans: FY 2011 OCO					
Program #2  T700 Engine - FY10: Start spin pit testing effort for the T700-GE-701D engine to address overspeed safety concerns and reduce O&S costs.  FY 2009 Accomplishments: FY 2009  FY 2010 Plans: FY 2010  FY 2011 Base Plans: FY 2011 Base  FY 2011 OCO Plans: FY 2011 OCO	0.000	0.303	0.000	0.000	0.000
Program #3  T700 Engine - FY11 Base: Continue spin pit testing for the T700-GE-701D engine to address safety concerns.  FY 2009 Accomplishments: FY 2009	0.000	0.000	0.275	0.000	0.275

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B. Accomplishments/Planned Program (\$ in Millions)					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2010 Plans: FY 2010  FY 2011 Base Plans: FY 2011 Base  FY 2011 OCO Plans: FY 2011 OCO					
Program #4  T55 Engine: 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 & reliability while reducing CH-47 engine cost of ownership. FY09: Funds used to support program management; this covers CIP reviews, Engineering Change Proposal (ECP) preparation and other management activities related to CIP.  FY 2009 Accomplishments: FY 2009  FY 2010 Plans: FY 2010  FY 2011 Base Plans: FY 2011 Base  FY 2011 OCO Plans: FY 2011 OCO	0.026	0.000	0.000	0.000	0.000
Program #5	0.000	0.303	0.000	0.000	0.000

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
T55 Engine - FY10: Complete the qualification of the 1553 Databus Engine Control Unit (ECU) for incorporation into the CH-47F aircraft.  FY 2009 Accomplishments: FY 2009  FY 2010 Plans: FY 2010  FY 2011 Base Plans: FY 2011 Base  FY 2011 OCO Plans: FY 2011 OCO						
Program #6  T55 Engine - FY11: Start efforts to address Hydromechanical Assembly (HMA) water intrusion and implementation of HMA potentiometer technology to improve reliability and reduce O&S costs.  FY 2009 Accomplishments: FY 2009  FY 2010 Plans: FY 2010  FY 2011 Base Plans: FY 2011 Base		0.000	0.000	0.275	0.000	0.275

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B. Accomplishments/Planned Program (\$ in Millions)					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2011 OCO Plans: FY 2011 OCO					
Program #7  GTCP36 Auxiliary Power Unit (APU): 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). FY09 addressed service revealed difficulties affecting safe operation of US Army GTCP 36 APUs. Began efforts to formulate correlation factors necessary to publish life limits of turbine and compressor wheels for US Army GTCP36 APUs.  FY 2009 Accomplishments: FY 2009  FY 2010 Plans: FY 2010  FY 2011 Base Plans: FY 2011 Base  FY 2011 OCO Plans: FY 2011 OCO	0.057	0.000	0.000	0.000	0.000
Program #8  GTCP36 APU - FY10: Continue to address service revealed difficulties affecting safe operation of US Army GTCP 36 APUs. Continue efforts to formulate correlation factors necessary to publish life limits of turbine and compressor wheels for US Army GTCP36 APUs.	0.000	0.025	0.000	0.000	0.000

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B. Accomplishments/Planned Program (\$ in Millions)					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2009 Accomplishments: FY 2009					
FY 2010 Plans: FY 2010					
FY 2011 Base Plans: FY 2011 Base					
FY 2011 OCO Plans: FY 2011 OCO					
Program #9  GTCP36 APU - FY11 Base: Continue to formulate correlation factors to publish life limits and address service revealed deficiencies that affect safe operation of the GTCP 36 APU.  FY 2009 Accomplishments: FY 2009  FY 2010 Plans: FY 2010  FY 2011 Base Plans: FY 2011 Base  FY 2011 OCO Plans: FY 2011 OCO	0.000	0.000	0.025	0.000	0.025
Program #10	0.100	0.000	0.000	0.000	0.000

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B. Accomplishments/Planned Program (\$ in Millions)					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
T62 APU: 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) that affect safe operation of the T62 APU. FY09 finalized the design and assembly of an improved flex fuel manifold to improve reliability and reduce O&S costs.  FY 2009 Accomplishments: FY 2009  FY 2010 Plans: FY 2010  FY 2011 Base Plans: FY 2011 Base  FY 2011 OCO Plans: FY 2011 OCO					
Program #11  T62 APU - FY10: Start the qualification testing on the flex fuel manifolds to ensure airworthiness, prepare drawings for T62-T-2B Fuel Pump/Fuel Control assembly, address SRDs affecting T62 APUs.  FY 2009 Accomplishments: FY 2009  FY 2010 Plans: FY 2010	0.000	0.035	0.000	0.000	0.000

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B. Accomplishments/Planned Program (\$ in Millions)					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2011 Base Plans: FY 2011 Base					
FY 2011 OCO Plans: FY 2011 OCO					
Program #12  T62 APU - FY11 Base: Finish the qualification of the Flex Fuel Manifolds and provide a class I Engineering Change Proposal for incorporation, address service revealed deficiencies affecting the T62 APU.  FY 2009 Accomplishments: FY 2009  FY 2010 Plans: FY 2010  FY 2011 Base Plans: FY 2011 Base  FY 2011 OCO Plans: FY 2011 OCO	0.000	0.000	0.025	0.000	0.025
Program #13  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. FY09: Began work on ARL	0.052	0.000	0.000	0.000	0.000

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B. Accomplishments/Planned Program (\$ in Millions)					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
engine test cell. Investigated and researched improved oil pump and engine bearings to increase engine life and reduce engine failure due to lubrication restriction.  FY 2009 Accomplishments: FY 2009  FY 2010 Plans: FY 2010  FY 2011 Base Plans: FY 2011 Base  FY 2011 OCO Plans: FY 2011 OCO					
Program #14  UAV Shadow Engine Investigation at ARL Cleveland - FY10: Complete and qualify ARL engine test cell, continue research of improved oil pump and engine bearings.  FY 2009 Accomplishments: FY 2009  FY 2010 Plans: FY 2010  FY 2011 Base Plans: FY 2011 Base	0.000	0.079	0.000	0.000	0.000

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2011 OCO Plans: FY 2011 OCO						
Program #15  UAV Shadow Engine Investigation at ARL Cleveland - FY11 Base: Start research on thermal barrier coatings for rotor to improve engine performance, durability and reduce thermal affects due to combustion.  FY 2009 Accomplishments: FY 2009  FY 2010 Plans: FY 2010  FY 2011 Base Plans: FY 2011 Base  FY 2011 OCO Plans: FY 2011 OCO		0.000	0.000	0.067	0.000	0.067
Program #16  IN HOUSE - FY09: Provided in-house support for the CIP engineers. Provided contracting support for CIP contracts.  FY 2009 Accomplishments: FY 2009  FY 2010 Plans: FY 2010		0.045	0.000	0.000	0.000	0.000

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2011 Base Plans: FY 2011 Base						
FY 2011 OCO Plans: FY 2011 OCO						
Program #17  IN HOUSE - FY10: Provide in-house support for the CIP engineers. Provide contracting support for CIP contracts.  FY 2009 Accomplishments: FY 2009  FY 2010 Plans: FY 2010  FY 2011 Base Plans: FY 2011 Base  FY 2011 OCO Plans: FY 2011 OCO		0.000	0.025	0.000	0.000	0.000
Program #18  IN HOUSE - FY11 Base: Continue to provide in-house support for the CIP engineers. Continue to provide contracting support for CIP contracts.  FY 2009 Accomplishments: FY 2009		0.000	0.000	0.043	0.000	0.043

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B. Accomplishments/Planned Program (\$ in Millions)					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2010 Plans: FY 2010  FY 2011 Base Plans: FY 2011 Base  FY 2011 OCO Plans: FY 2011 OCO					
Program #19  FY10: Small Business Innovative Research/Small Business Technology Transfer Programs  FY 2009 Accomplishments: FY 2009  FY 2010 Plans: FY 2010  FY 2011 Base Plans: FY 2011 Base  FY 2011 OCO Plans: FY 2011 OCO	0.000	0.018	0.000	0.000	0.000
Accomplishments/Planned Programs Subtotals	0.326	0.788	0.710	0.000	0.710

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2011 Army		<b>DATE:</b> February 2010
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<p><b><u>C. Other Program Funding Summary (\$ in Millions)</u></b> N/A</p> <p><b><u>D. Acquisition Strategy</u></b> 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.</p> <p><b><u>E. Performance Metrics</u></b> 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.</p>		

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