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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army **Date:** March 2023

Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0203752A / <i>Aircraft Engine Component Improvement Program</i>
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	-	0.127	0.148	0.146	-	0.146	0.146	0.146	0.147	0.149	0.000	1.009
106: <i>A/C Compon Improv Prog</i>	-	0.127	0.148	0.146	-	0.146	0.146	0.146	0.147	0.149	0.000	1.009

A. Mission Description and Budget Item Justification

The 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 are also addressed under this Program Element.

B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	0.132	0.148	0.149	-	0.149
Current President's Budget	0.127	0.148	0.146	-	0.146
Total Adjustments	-0.005	0.000	-0.003	-	-0.003
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.005	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-0.003	-	-0.003

Change Summary Explanation

Decreased funding to support higher Army priorities.

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Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0203752A / Aircraft Engine Component Improvement Program	Project (Number/Name) 106 / A/C Compon Improv Prog
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
106: A/C Compon Improv Prog	-	0.127	0.148	0.146	-	0.146	0.146	0.146	0.147	0.149	0.000	1.009
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The 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 are also addressed.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024
<p>Title: In-House Support</p> <p>Description: In-house support for the CIP engineers. Contracting support for CIP contracts.</p> <p>FY 2023 Plans: Continue to provide in-house engineering support for UAV engine CIP programs.</p> <p>FY 2024 Plans: Will continue to provide in-house engineering support for UAV engine CIP programs.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Funding changes reflect planned lifecycle of this effort</p>	0.054	0.055	0.057
<p>Title: UAS Fuel System Component Evaluation</p> <p>Description: This program is to improve aircraft readiness and reliability by mitigating the root cause of common component failures.</p> <p>FY 2023 Plans: Continue UAS component investigations to support airworthiness, reliability and performance improvements of the critical Unmanned Aerial Vehicle (UAV) components (e.g., Full Authority Digital Engine Controls (FADECs), fuel injectors, and high pressure fuel pumps) to determine root cause of occurrences which result in performance anomalies during aircraft operation.</p> <p>FY 2024 Plans:</p>	0.073	0.093	0.089

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Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0203752A / Aircraft Engine Component Improvement Program	Project (Number/Name) 106 / A/C Compon Improv Prog		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
<p>UAS component investigations will continue to support airworthiness, reliability and performance improvements of the critical Unmanned Aerial Vehicle (UAV) components (e.g., Full Authority Digital Engine Controls (FADECs), fuel injectors, and high pressure fuel pumps) to determine root cause of occurrences which result in performance anomalies during aircraft operation.</p> <p><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> Funding changes reflect planned lifecycle of this effort</p>				
Accomplishments/Planned Programs Subtotals		0.127	0.148	0.146
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.				

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
2040 / 7				PE 0203752A / Aircraft Engine Component Improvement Program				106 / A/C Compon Improv Prog							
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	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	Allot	US Army DEVCOM AvMC : Redstone Arsenal, AL	3.085	0.054	Oct 2021	0.055	Oct 2022	0.057	Oct 2023	-		0.057	Continuing	Continuing	Continuing
Subtotal			3.085	0.054		0.055		0.057		-		0.057	Continuing	Continuing	N/A
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Gray Eagle UAS Turbocharger Compressor Blow-Off Valve	Various	ARL-Vehicle Technology Directorate : Aberdeen Proving Ground	1.127	0.034	Oct 2021	-		-		-		-	Continuing	Continuing	Continuing
UAS Fuel System Component Evaluation	TBD	Army Research Lab : Aberdeen Proving Ground	-	0.039	Oct 2021	0.093	Oct 2022	0.089	Oct 2023	-		0.089	Continuing	Continuing	Continuing
Subtotal			1.127	0.073		0.093		0.089		-		0.089	Continuing	Continuing	N/A
Project Cost Totals			4.212	0.127		0.148		0.146		-		0.146	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army			Date: March 2023		
Appropriation/Budget Activity 2040 / 7		R-1 Program Element (Number/Name) PE 0203752A / Aircraft Engine Component Improvement Program		Project (Number/Name) 106 / A/C Compon Improv Prog	

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
UAS Fuel System Component Evaluation																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0203752A / Aircraft Engine Component Improvement Program	Project (Number/Name) 106 / A/C Compon Improv Prog

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
T700 Engine Spit Pit Testing	1	2011	4	2012
T700 Engine Temperature Survey	2	2014	4	2015
T55 Engine 1553 Engine Control Unit (ECU)	2	2012	1	2013
T55 Engine N1 Drive Line Redesign	1	2010	4	2012
T55 Engine ECU Block Upgrade	2	2013	4	2015
Auxiliary Power Units (APUs)	1	2014	4	2015
UAV Shadow Engine	2	2014	4	2021
T700 CSI Update	1	2017	4	2017
UAS Fuel System Component Evaluation	1	2022	4	2028