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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Air Force **Date:** March 2024

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0604534F / <i>Adaptive Engine Transition Program (AETP)</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	276.659	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	276.659
640866: <i>Advanced Engine Transition Program (AETP)</i>	-	276.659	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	276.659
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

The Adaptive Engine Transition Program (AETP) will design and manufacture multiple adaptive engine prototypes, complete component rig assessments, characterize materials, and inform manufacturing process improvements. The prototype engines will demonstrate fuel efficiency increases, thrust increases, and new component technologies by performing sea-level, altitude, and durability assessments across multiple power settings. These assessments will provide data to quantify the capability and reduce risk in areas such as thermal capacity, reliability, and supportability, among others. The program will also demonstrate adaptive engine technology can be scaled to meet military fighter engine size requirements while ensuring appropriate manufacturing and technology readiness levels by producing flight-weight prototypes. AETP test objectives are foundational risk reduction activities for the Next Generation Adaptive Propulsion (NGAP) program providing capability enabling options for Next Generation Air Dominance (NGAD) capabilities.

This program element may include necessary emergent or unanticipated civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F. In FY 2023 3.576 million was expended for civilian pay expenses in this program element, and in FY 2024 0.000 million is forecasted for civilian pay expenses in this program element.

Prior to FY 2023, the AETP was reported in Project 643608, Advanced Engine Development in PE 0604004F, Advanced Engine Development.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 4: Advanced Component Development & Prototypes (ACD&P)	R-1 Program Element (Number/Name) PE 0604534F I Adaptive Engine Transition Program (AETP)
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B. Program Change Summary (\$ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	286.096	0.000	0.000	0.000	0.000
Current President's Budget	276.659	0.000	0.000	0.000	0.000
Total Adjustments	-9.437	0.000	0.000	0.000	0.000
• 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	0.000	0.000			
• SBIR/STTR Transfer	-9.437	0.000			
• Other Adjustments	0.000	0.000	0.000	0.000	0.000

Change Summary Explanation

FY 2025 - No funding requested or required; program discontinued and closing out in FY 2024 with FY 2023 funding.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2023	FY 2024	FY 2025
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Title: Adaptive Engine Transition Program	276.659	0.000	0.000
Description: The Adaptive Engine Transition Program (AETP) will design and manufacture multiple adaptive engine prototypes, complete component rig assessments, characterize materials, and inform manufacturing process improvements. The prototype engines will demonstrate fuel efficiency increases, thrust increases, and new component technologies by performing sea-level, altitude, and durability assessments across multiple power settings. These assessments will provide data to quantify the capability and reduce risk in areas such as thermal capacity, reliability, and supportability, among others. The program will also demonstrate adaptive engine technology can be scaled to meet military fighter engine size requirements while ensuring appropriate manufacturing and technology readiness levels by producing flight-weight prototypes. AETP test objectives are foundational risk reduction activities for the Next Generation Adaptive Propulsion program providing capability enabling options for Next Generation Air Dominance (NGAD) capabilities.			
FY 2024 Plans: No FY 2024 funding required or requested; program discontinued and closing out with FY 2023 funding.			
FY 2025 Plans: No funding required or requested; program discontinued and closing out in FY 2024 with FY 2023 funding.			
FY 2024 to FY 2025 Increase/Decrease Statement:			

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Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0604534F / <i>Adaptive Engine Transition Program (AETP)</i>
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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2023	FY 2024	FY 2025
FY 2025 funding did not change compared to FY 2024 due to no funding being requested in FY 2024 or FY 2025.			
Accomplishments/Planned Programs Subtotals	276.659	0.000	0.000

D. Other Program Funding Summary (\$ in Millions)

N/A

Remarks

E. Acquisition Strategy

The Air Force awarded two limited source, cost plus incentive fee contracts back in FY 2016 to General Electric and Pratt & Whitney due to their unique qualifications to design a high performance, flight-weight adaptive turbine engine in the thrust class for AETP. Incentive categories include engine weight, performance factors, and maintainability and supportability, with specific metrics for each category incentivized. In December 2022, a new Contract Line Item was added to the General Electric contract for continued maturation of fuel efficient adaptive engine component technologies and reduce associated risk in preparation for next-generation propulsion system development for combat aircraft applications. The periods of performance for these contracts were extended to support AETP close out in FY 2024. The government agency responsible for managing this program is the Air Force Life Cycle Management Center, Propulsion Directorate, Wright-Patterson Air Force Base, Ohio.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force **Date:** March 2024

Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604534F / Adaptive Engine Transition Program (AETP)	Project (Number/Name) 640866 / Advanced Engine Transition Program (AETP)
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Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Adaptive Engine Transition Program - GE	C/CPIF	GE : Evendale, OH	-	221.495	Oct 2022	-		-		-		-	0.000	221.495	-
Adaptive Engine Transition Program - PW	C/CPIF	PW : East Hartford, CT	-	40.411	Oct 2022	-		-		-		-	0.000	40.411	-
Subtotal			-	261.906		-		-		-		-	0.000	261.906	N/A

Management Services (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Adaptive Engine Transition Program - Program Management Support	Various	Various : TBD	-	14.753	Dec 2022	-		-		-		-	Continuing	Continuing	-
Not specified.	C/CPAF	Not specified. : TBD	-	-		-		-		-		-	Continuing	Continuing	-
Subtotal			-	14.753		-		-		-		-	Continuing	Continuing	N/A

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		-	276.659	-	-	-	Continuing	Continuing	N/A

Remarks
 GE - General Electric PW - Pratt & Whitney

 FY 2023 - Growth in Management Services costs affiliated with program office growth for acquisition planning activities and propulsion industrial base supply chain studies.

 FY 2024 - No funding required or requested; program discontinued and closing out with FY 2023 funding.

 FY 2025 - No funding required or requested; program discontinued and closing out in FY 2024 with FY 2023 funding.

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Exhibit R-4A, RDT&E Schedule Details: PB 2025 Air Force		Date: March 2024
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604534F / <i>Adaptive Engine Transition Program (AETP)</i>	Project (Number/Name) 640866 / <i>Advanced Engine Transition Program (AETP)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Adaptive Engine Transition Program</i>				
Detailed Design, Engine Fabrication, Engine Assessments, Transition Planning and Design Improvements	1	2023	3	2024
Program Close Out	3	2023	4	2024

Note

The Adaptive Engine Transition Program (AETP) consisted of five phases: detailed design, engine fabrication, engine assessments, transition planning and design improvements. Design improvements included engine weight reduction initiatives; engine design progression related to performance, durability and other requirements; engine controls and accessories development; additional altitude testing and engine tear-down; and life cycle cost studies.

AETP deliverables include military adaptive engine detailed design parameters and models; multiple engine sets of hardware (plus spare parts); matured technologies; major rig assessment data (controls, combustor, etc.); program reviews; and technology, afford-ability, sustainability and integration studies.

The AETP is not transitioning to a program of record and closing out in FY 2024. AETP advanced materials, technologies, manufacturing, assembly, and test results are informing design activities and prototype planning for the Next Generation Adaptive Propulsion program. Adaptive engine modeling, validated by AETP performance testing, is informing planning for future next generation capabilities.