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

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 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	-	0.000	286.096	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	286.096
640866: <i>Advanced Engine Transition Program (AETP)</i>	-	0.000	286.096	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	286.096
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.

The Adaptive Engine Transition Program (AETP) Program Element is new in FY 2024 and responds to Congressional direction in the 2023 Appropriations Bill and accompanying Joint Explanatory Statement directing the Air Force to maintain separate budget lines for the AETP and Next Generation Adaptive Propulsion (NGAP) efforts. Prior to FY 2023 the entirety of both AETP and NGAP were reported in Project 643608, Advanced Engine Development in PE 0604004F, Advanced Engine Development. This is a congressionally directed administrative realignment to provide increased transparency to Congress and is not a new start.

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, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY 2022 0.0 million was expended for civilian pay expenses in this program element, and in FY 2023 2.304 million is forecasted for civilian pay expenses in this program element.

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 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	0.000	0.000	0.000	0.000	0.000
Current President's Budget	0.000	286.096	0.000	0.000	0.000
Total Adjustments	0.000	286.096	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	0.000	0.000			
• Other Adjustments	0.000	286.096	0.000	0.000	0.000

Change Summary Explanation

FY 2022 - AETP executed entirely in PE 0604004F, Advanced Engine Development, Project 643608, Advanced Engine Development.
 FY 2023 - AETP moved out of Program Element 0604004F, Advanced Engine Development and into this program element to maintain separate budget lines for the AETP and NGAP efforts as directed in the 2023 Appropriations Bill and accompanying Joint Explanatory Statement. This is a congressionally directed administrative realignment to provide increased transparency to Congress and is not a new start.
 FY 2024 - Although the AETP provides the best overall F-35A operational performance, the F135 Engine Core Upgrade will restore engine life and prevent degradation for all three F-35 variants at the lowest cost. As such, no funding required or requested for the AETP.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
Title: Adaptive Engine Transition Program	-	286.096	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.			
This program element is new in FY 2024 and responds to Congressional direction to maintain separate budget lines for the Adaptive Engine Transition Program (AETP) and Next Generation Adaptive Propulsion (NGAP) efforts. Prior to FY 2023 the			

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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>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
entirety of both AETP and NGAP were reported in program element 0604004F, Advanced Engine Development, Project 643608, Advanced Engine Development. This is a congressionally directed administrative realignment to provide increased transparency to Congress and is not a new start.				
FY 2023 Plans: Funds continuation of prototype engine assessments and product design activities that include addressing known design improvements, engine weight reduction initiatives, development of engine controls and accessories (Full Authority Digital Engine Control-FADEC) and F-35 integration.				
FY 2024 Plans: AETP will be discontinued; no FY 2024 funds required or requested.				
FY 2023 to FY 2024 Increase/Decrease Statement: Funding decreased due to discontinuance of the AETP.				
Accomplishments/Planned Programs Subtotals		-	286.096	0.000
D. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
E. Acquisition Strategy				
For the Adaptive Engine Transition Program, 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. A notional acquisition strategy for transitioning the AETP to the F-35A was included in the Secretary of the Air Force April 2022 Report to Congressional Committees on AETP in accordance with the report requirements set forth in Section 242 of the National Defense Authorization Act for FY 2022. 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 2024 Air Force **Date:** March 2023

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 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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	-	-		138.352	Oct 2022	0.000	Oct 2023	-		0.000	0.000	138.352	-
Adaptive Engine Transition Program - PW	C/CPIF	PW : East Hartford, CT	-	-		138.352	Oct 2022	0.000	Oct 2023	-		0.000	0.000	138.352	-
Subtotal			-	-		276.704		0.000		-		0.000	0.000	276.704	N/A

Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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	-	-		9.392	Dec 2022	-		-		-	Continuing	Continuing	-
Not specified.	C/CPAF	Not specified. : TBD	-	-		-		-		-		-	Continuing	Continuing	-
Subtotal			-	-		9.392		-		-		-	Continuing	Continuing	N/A

	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		-	-	286.096	0.000	0.000	Continuing	Continuing	N/A

Remarks
 GE - General Electric PW - Pratt & Whitney

 FY 2022 - AETP funding executing in its entirety in PE 0604004F, Advanced Engine Development.

 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 - Although the AETP provides the best overall F-35A operational performance, the F135 Engine Core Upgrade will restore engine life and prevent degradation for all three F-35 variants at the lowest cost. As such, no funding required or requested for the AETP.

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Air Force		Date: March 2023
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Adaptive Engine Transition Program</i>				
Detailed Design, Engine Fabrication, EngineAssessments, Transition Planning	1	2022	4	2024
Design Improvements	4	2022	4	2024

Note

The Adaptive Engine Transition Program consists of five phases: detailed design, engine fabrication, engine assessments, transition planning and design improvements. Design improvements include 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.

Program 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.

AETP moved out of Program Element 0604004F, Advanced Engine Development to this program element in FY 2023 to maintain separate budget lines for the AETP and NGAP efforts in accordance with direction in the 2023 Appropriations Bill and accompanying Joint Explanatory Statement. With discontinuance of the AETP, the AETP office will close out planned prototype engine assessments and product design activities during FY 2024.