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

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207146F / F-15EX
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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	-	103.950	83.830	100.006	0.000	100.006	56.129	0.000	0.000	0.000	0.000	343.915
670131: <i>F-15EX</i>	-	103.950	83.830	100.006	0.000	100.006	56.129	0.000	0.000	0.000	0.000	343.915
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**A. Mission Description and Budget Item Justification**

A refresh of the F-15C/D fleet is critical to maintaining combat viability (lethality, survivability, and supportability) in support of the 2018 National Defense Strategy. Older F-15C/D aircraft will be replaced to maintain a viable mix of 4th and 5th-generation fighters for the next 20+ years. The F-15EX is based on the 2-seat F-15QA (Qatar) configuration upgraded with USAF-only capabilities, including the Eagle Passive Active Warning and Survivability System (EPAWSS) and the F-15 Operational Flight Program (OFP) software. With two seats, it is multirole-capable and operable by one or two aircrew. F-15EX logistics, maintenance, and training will heavily leverage the existing F-15 infrastructure. F-15EX's will replace F-15C/D aircraft, many of which are beyond their service life and have serious structures risks, wire chafing issues, and obsolete parts. The F-15C began fielding in 1979 and is approaching the end of its safe service life. As the F-15C/D inventory is divested, the F-15EX is needed to meet 2022 National Defense Strategy requirements.

Funds may be used to manufacture aircraft, support equipment, and initial spares to support test activities; integrate hardware and software subsystems; upgrade training systems and systems integration labs; develop training materials and technical manuals; pursue other non-recurring engineering activities to reduce integration and cybersecurity risks, ramp up the production line capacity, prepare for and conduct ground and flight testing, and pursue technology insertion opportunities; resolve Diminishing Manufacturing Sources and Material Shortages (DMSMS) and/or obsolescence issues; fulfill Federal Aviation Administration or other mandates necessary to ensure continued aircrew safety and mission effectiveness; and cover other related requirements to manufacture and sustain the test aircraft. With the transition of the F-15EX from a Middle Tier of Acquisition Rapid Fielding program to a Major Capability Acquisition program in September 2022, this funding will support test support and integration activities for the assets procured under both authorities.

The FY 2024 funding request was reduced by \$21.168M to account for the availability of prior year execution balances.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs 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 10.377M was expended for civilian pay expenses in this program element, and in FY 2023 11.410M is forecasted for civilian pay expenses in this program element.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Previous President's Budget	107.126	83.830	0.000	0.000	0.000
Current President's Budget	103.950	83.830	100.006	0.000	100.006
Total Adjustments	-3.176	0.000	100.006	0.000	100.006
• 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	-3.176	0.000			
• Other Adjustments	0.000	0.000	100.006	0.000	100.006

**Change Summary Explanation**

FY22 reduction of -3.176 for Small Business Innovative Research (SBIR)

FY24 funding realigned from procurement to RDT&E provides for existing, ongoing requirements as well as capability development which was not previously funded.

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
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<b>Title:</b> F-15EX	103.950	83.830	100.006
<b>Description:</b> F-15EX will refresh the F-15C/D fleet with new aircraft based on the F-15QA Foreign Military Sales (FMS) configuration being sold to Qatar. The program also incorporates USAF-only capabilities, including the Eagle Passive Active Warning and Survivability System (EPAWSS), the F-15 Operational Flight Program (OFP) software and mandates such as, but not limited to, Global Positioning System (GPS) M-Code, Multi-Functional Information Distribution System-Joint Tactical Radio System (MIDS-JTRS), Second Generation Antijam Tactical UHF Radio for NATO (SATURN), and Mode V Identification Friend or Foe (IFF).			
<b>FY 2023 Plans:</b> Continue software development integration efforts, including merging F-15EX-unique software back into the common F-15 OFP. Continue upgrading training systems and systems integration labs; developing training materials and technical manuals; and completing other non-recurring engineering activities to reduce integration and cybersecurity risks, conduct ground and flight testing, pursue technology insertion opportunities, and fulfill Federal Aviation Administration (FAA) or other mandates necessary to ensure continued aircrew safety (e.g. Auto Ground Collision Avoidance System) and mission effectiveness. Provide program support to manage and execute F-15EX efforts.			
<b>FY 2024 Plans:</b>			

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
Development capabilities not previously funded, including the Auto GCAS Initiative, IRST Block II integration, ACES-5 initiative, Dual EGI and DVR/DTMII efforts. Continue software development integration efforts, including merging F-15EX-unique software back into the common F-15 OFP. Continue upgrading training systems and systems integration labs; developing training materials and technical manuals; and completing other non-recurring engineering activities to reduce integration and cybersecurity risks, complete ground and flight testing, pursue technology insertion opportunities, and fulfill Federal Aviation Administration (FAA) or other mandates necessary to ensure continued aircrew safety (e.g. Auto Ground Collision Avoidance System) and mission effectiveness. Provide program support to manage and execute F-15EX efforts.			
<b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b> Increase in FY 2024 funding is related to development of increased capabilities for F-15EX aircraft to include the Auto GCAS Initiative, IRST Block II integration, ACES-5 initiative, Dual EGI and DVR/DTMII efforts.			
<b>Accomplishments/Planned Programs Subtotals</b>	103.950	83.830	100.006

<b>D. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• APAF 05 F015EX: F-15EX	1,252.359	2,581.368	2,898.039	-	2,898.039	2,534.896	60.601	-	-	0.000	9,327.263

**Remarks**

**E. Acquisition Strategy**  
The F-15EX design is based on the F-15QA (Qatar) configuration upgraded with USAF-only capabilities like the Eagle Passive Active Warning and Survivability System (EPAWSS) and the F-15 Operational Flight Program (OFP) software. Since most subsystems are projected to be mature when required for integration into the F-15EX, the acquisition strategy is deemed low risk. To rapidly field the F-15EX, the USAF is focusing engineering activities on integrating existing systems and ramping up the production line capacity. Test activities likewise have also been tailored to focus on integration of F-15QA, EPAWSS, and the F-15 software development, taking appropriate credit for previous USAF and FMS testing. In addition to the integration of existing USAF-only subsystems and F-15 software development onto the F-15QA baseline, the F-15EX is pursuing technology insertion options to ensure it remains a complementary platform to 5th-generation assets. Finally, logistics, maintenance, and training activities will heavily leverage the existing F-15 infrastructure. The F-15EX program was initiated under the Middle Tier of Acquisition Pathway to rapidly field aircraft, meeting the urgent requirement to recapitalize the divesting F-15C/D fleet. In September 2022, the F-15EX program transitioned to a Major Capability Acquisition Pathway program to enable acquisition of Lots 3 and beyond. As part of this transition, all assets and activities were transitioned into the new Major Capability Acquisition program.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Air Force												Date: March 2023				
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)								
3600 / 7				PE 0207146F / F-15EX				670131 / F-15EX								
<b>Product Development (\$ in Millions)</b>				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	
F-15EX Development	Various	Boeing : St Louis, MO	-	83.809	Apr 2022	58.453	Mar 2023	79.402	Mar 2024	-		79.402	0.000	221.664	-	
<b>Subtotal</b>			-	83.809		58.453		79.402		-		79.402	0.000	221.664	N/A	
<b>Support (\$ in Millions)</b>				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	
Direct Cite Authority Civilian Pay	Various	AFLCMC CIV PAY : WPAFB & Robins AFBs	-	10.377	Oct 2021	11.410	Oct 2022	11.590	Oct 2023	-		11.590	0.000	33.377	-	
<b>Subtotal</b>			-	10.377		11.410		11.590		-		11.590	0.000	33.377	N/A	
<b>Test and Evaluation (\$ in Millions)</b>				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	
Government Flight Test	Various	Various : Various	-	8.364	May 2022	12.567	Mar 2023	7.314	Mar 2024	-		7.314	0.000	28.245	-	
<b>Subtotal</b>			-	8.364		12.567		7.314		-		7.314	0.000	28.245	N/A	
<b>Management Services (\$ in Millions)</b>				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	
Program Management Administration	Various	Various : Various	-	1.400	Oct 2021	1.400	Oct 2022	1.700	Oct 2023	-		1.700	0.000	4.500	-	
<b>Subtotal</b>			-	1.400		1.400		1.700		-		1.700	0.000	4.500	N/A	
<b>Project Cost Totals</b>			-	103.950		83.830		100.006		-		100.006	0.000	287.786	N/A	

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2024 Air Force	<b>Date:</b> March 2023
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<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0207146F / F-15EX	<b>Project (Number/Name)</b> 670131 / F-15EX
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	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
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**Remarks**  
 FINANCIAL PERFORMANCE: F-15 EX is evaluated against traditional Research and Development (R&D) program expenditure benchmarks. Unlike many traditional R&D programs, however, the F-15 EX Development contract is a Fixed Price contract with progress payments. 20 percent of incurred costs are withheld until the end of the contract, when they are liquidated. Mandatory funding obligations and progress payment withholds will cause the program to lag traditional expenditure benchmarks, painting an inaccurate portrait of overall program health.



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Air Force		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0207146F / <i>F-15EX</i>	<b>Project (Number/Name)</b> 670131 / <i>F-15EX</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>F-15EX</i></b>				
F-15EX Non-Recurring Engineering (NRE) and Integration	4	2022	4	2025
F-15EX Major Defense Acquisition Program (MDAP) Transition Point (MTP)	4	2022	4	2022
F-15EX Initial Test & Evaluation (IOT&E)	2	2022	4	2023
F-15EX Required Assets Available (RAA)/Initial Operating Capability (IOC)	1	2024	1	2024