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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0207146F / F-15EX
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	-	0.000	0.000	159.761	0.000	159.761	0.000	0.000	0.000	83.871	0.000	243.632
670131: <i>F-15EX</i>	-	0.000	0.000	159.761	0.000	159.761	0.000	0.000	0.000	0.000	0.000	159.761
676020: <i>F-15*</i>	-	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	83.871	0.000	83.871

*This project's R-2a exhibit has been suppressed due to funding not beginning until after FY 2021

Note

The total F-15EX RTD&E funding for FY20 in the amount of \$431.8M resides in Program 0207134F Project 670131 (\$67.4M) and Project 676020 (\$364.4M).

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 will be 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 Suite 9.1 Operational Flight Program (OFP) software. With two seats, it will be multirole-capable and operable by one or two aircrew. Many F-15C/Ds are beyond their service life and have serious structural risks, wire chafing issues, and obsolete parts. Readiness goals are unachievable due to continuous structural inspections, time consuming repairs, and on-going modernization efforts. The average F-15C/D is 36 years old with over 8,400 flight hours; the oldest F-15C was delivered in 1979. Logistics, maintenance, and training activities will heavily leverage existing the F-15 infrastructure.

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 risks, ramp up the production line capacity, prepare for flight testing, and investigate technology insertion opportunities; resolve Diminishing Manufacturing Sources/ Material Shortages (DMSMS) and/or obsolescence issues; fulfill FAA or other mandates necessary to ensure continued aircrew safety and mission effectiveness; and cover other related requirements to manufacture and sustain the test aircraft.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver F-15 weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605831F.

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. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	0.000	0.000	0.000	0.000	0.000
Current President's Budget	0.000	0.000	159.761	0.000	159.761
Total Adjustments	0.000	0.000	159.761	0.000	159.761
• 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	0.000	159.761	0.000	159.761

Change Summary Explanation

The F-15EX program was an FY20 new start in PE 0207134F F-15E. In FY21 F-15EX program funding moved from PE 0207134F F-15E to PE 0207146F F-15EX.

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force										Date: February 2020		
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0207146F / F-15EX				Project (Number/Name) 670131 / F-15EX			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
670131: F-15EX	-	0.000	0.000	159.761	0.000	159.761	0.000	0.000	0.000	0.000	0.000	159.761
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

The total F-15EX RTD&E funding for FY20 in the amount of \$431.8M resides in Program 0207134F Project 670131 (\$67.4M) and Project 676020 (\$364.4M).

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 will be 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 Suite 9.1 Operational Flight Program (OFP) software. With two seats, it will be multirole-capable and operable by one or two aircrew. Many F-15C/Ds are beyond their service life and have serious structural risks, wire chafing issues, and obsolete parts. Readiness goals are unachievable due to continuous structural inspections, time-consuming repairs, and on-going modernization efforts. The average F-15C/D is 36 years old with over 8,400 flight hours; the oldest F-15C was delivered in 1979. Logistics, maintenance, and training activities will heavily leverage existing the F-15 infrastructure.

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 risks, ramp up the production line capacity, prepare for flight testing, and investigate technology insertion opportunities; resolve Diminishing Manufacturing Sources/ Material Shortages (DMSMS) and/or obsolescence issues; fulfill FAA or other mandates necessary to ensure continued aircrew safety and mission effectiveness; and cover other related requirements to manufacture and sustain the test aircraft.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver F-15 weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605831F.

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

	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: F-15EX	-	0.000	159.761	0.000	159.761
Description: FY 2020 funding resides in Program 0207134F Project 670131 and Program 0207134F Project 676020. 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 will also incorporate USAF-only capabilities, including the Eagle Passive Active Warning and Survivability System (EPAWSS) and the Suite 9.1 Operational Flight Program (OFP) software.					
FY 2020 Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force		Date: February 2020
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207146F / F-15EX	Project (Number/Name) 670131 / F-15EX

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
N/A. See PE 0207134F F-15E.					
<i>FY 2021 Base Plans:</i> Continue OFP integration efforts, including merging F-15EX-unique software back into the common F-15 OFP in Suite 9.2. Continue upgrading training systems and systems integration labs; developing training materials and technical manuals; and pursuing other non-recurring engineering activities to reduce integration risks, ramp up the production line capacity, prepare for flight testing, and investigate technology insertion opportunities.					
<i>FY 2021 OCO Plans:</i> N/A					
<i>FY 2020 to FY 2021 Increase/Decrease Statement:</i> FY 2020 funding resides in Program 0207134F Project 670131 and Program 0207134F Project 676020.					
Accomplishments/Planned Programs Subtotals	-	0.000	159.761	0.000	159.761

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• APAF 01 F015E0: F-15EX	-	621.100	-	-	-	-	-	-	-	0.000	621.100
• APAF 01 F015EX: F-15EX	-	-	1,403.347	-	1,403.347	1,346.652	1,502.155	2,217.670	2,226.026	Continuing	Continuing
• RDTE 07 0207134F: F-15E Squadrons	196.035	684.229	458.669	-	458.669	243.462	199.320	73.884	2.098	Continuing	Continuing

Remarks

D. Acquisition Strategy

The F-15EX design will be based on the F-15QA (Qatar) configuration upgraded with USAF-only capabilities like the Eagle Passive Active Warning and Survivability System (EPAWSS) and the Suite 9.1 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 plans to focus engineering activities on integrating existing systems and ramping up the production line capacity. Test activities will likewise be tailored to focus on integration of F-15QA, EPAWSS, and the Suite 9.1 OFP, taking appropriate credit for previous USAF and FMS testing. Finally, logistics, maintenance, and training activities will heavily leverage existing the F-15 infrastructure.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207146F / F-15EX	Project (Number/Name) 670131 / F-15EX
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Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
F-15EX	Various	Various : Various	-	-		-		146.761	Jan 2021	-		146.761	Continuing	Continuing	-
Subtotal			-	-		-		146.761		-		146.761	Continuing	Continuing	N/A

Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
Government Flight Test	Various	Eglin: : Various	-	-		-		4.600	Jan 2021	-		4.600	Continuing	Continuing	-
Subtotal			-	-		-		4.600		-		4.600	Continuing	Continuing	N/A

Management Services (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
AFLCMC Civ Pay	Various	AFLCMC CIV PAY: : WPAFB & Robins AFBs	-	-		-		6.800	Oct 2020	-		6.800	Continuing	Continuing	-
Program Management Administration	Various	Various: : Various	-	-		-		1.600	Oct 2020	-		1.600	Continuing	Continuing	-
Subtotal			-	-		-		8.400		-		8.400	Continuing	Continuing	N/A

			Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	-	0.000	159.761	-	159.761	Continuing	Continuing	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207146F / F-15EX	Project (Number/Name) 670131 / F-15EX
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FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025			
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

F-15EX	
F-15EX NRE and Integration	[REDACTED]

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207146F / <i>F-15EX</i>	Project (Number/Name) 670131 / <i>F-15EX</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>F-15EX</i>				
F-15EX NRE and Integration	2	2021	4	2023