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Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Air Force **Date:** May 2021

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force / BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0401219F / KC-10s
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COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
Total Program Element	-	0.019	0.000	0.000	0.000	0.000	-	-	-	-	-	-
675195: <i>Aircraft Modernization Program (AMP)</i>	-	0.019	0.000	0.000	0.000	0.000	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

The KC-10 is an aerial refueling asset built on the commercial DC-10 airframe. This aircraft creates an air bridge enabling rapid global mobility and global strike missions. There are 59 KC-10 aircraft in the USAF tanker fleet. KC-10 has a divestiture strategy that will follow Fiscal Year 2019 National Defense Authorization Act and Air Force requirements.

Mode 5 program is a Department of Defense mandated upgrade to the Identification Friend or Foe (IFF) system, the primary means of command and control aircraft identification. Mode 5 increases anti-spoofing capabilities and lowers the possibility of aircraft/aircrew loss due to misidentification of friendly aircraft. The KC-10 modification program includes a Mode 5 capable APX-119 transponder, a new KIV-77 crypto applique and integration/control through the CDU-7000F flight management computer.

A Federal Aviation Administration (FAA) mandated Automatic Dependent Surveillance-Broadcast (ADS-B) Out upgrade to the KC-10 is also included as part of Mode 5 to meet DO-260B requirements set by the FAA. Both IFF Mode 5 and ADS-B Out are mandated programs (Joint Requirements Oversight Council Memorandum 047-07 and FAA Advisory Circular 20-165B) that have a required incorporation no later than 1 January 2020 (ADS-B) and 1 July 2020 (Mode 5). Both modifications are accomplished by modification of the APX-119 Line Replaceable Unit (LRU) and can easily be accomplished at the same time and at a significant cost savings to the Air Force.

The program completed formal Engineering and Manufacturing Development (EMD) and will procure kits for installation on all KC-10 aircraft.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver KC-10 weapon system capabilities. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605831F. In FY20 \$0.0M was expended and in FY21 \$0.0M 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. Program Change Summary (\$ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	0.020	0.000	0.000	0.000	0.000
Current President's Budget	0.019	0.000	0.000	0.000	0.000
Total Adjustments	-0.001	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	-0.001	0.000			
• Other Adjustments	0.000	0.000	0.000	0.000	0.000

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2020	FY 2021	FY 2022
Title: KC-10 Mode 5 IFF	0.019	0.000	0.000
Description: FAA mandated upgrade to the IFF system to increase anti-spoofing and exploitation capabilities and lower the possibility of aircraft/aircrew loss due to misidentification of friendly aircraft.			
FY 2021 Plans: N/A			
FY 2022 Plans: N/A, no FY22 RDT&E Requirement			
FY 2021 to FY 2022 Increase/Decrease Statement: N/A			
Accomplishments/Planned Programs Subtotals			
	0.019	0.000	0.000

D. Other Program Funding Summary (\$ in Millions)			FY 2022	FY 2022	FY 2022						Cost To	
Line Item	FY 2020	FY 2021	Base	OCO	Total	FY 2023	FY 2024	FY 2025	FY 2026	Complete	Total Cost	
• APAF 05 C01000: KC-10A (ATCA)	2.108	0.117	1.902	-	1.902	-	-	-	-	-	-	
• APAF 06 C01000: KC-10s	0.000	0.032	0.033	-	0.033	-	-	-	-	-	-	

Remarks

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E. Acquisition Strategy

The acquisition strategy will be a sole source RDT&E effort followed by procurement of kits and modification of KC-10 aircraft.

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Exhibit R-4, RDT&E Schedule Profile: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0401219F / KC-10s	Project (Number/Name) 675195 / Aircraft Modernization Program (AMP)

FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026			
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

KC-10 Mode 5																												
KC-10 Mode 5: EMD																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0401219F / KC-10s	Project (Number/Name) 675195 / Aircraft Modernization Program (AMP)

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
KC-10 Mode 5				
KC-10 Mode 5: EMD	1	2020	1	2020