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Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Air Force										Date: February 2019		
Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development					R-1 Program Element (Number/Name) PE 0401219F / KC-10s							
COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
Total Program Element	-	9.181	6.569	0.020	0.000	0.020	0.000	0.000	0.000	0.000	0.000	15.770
675195: Aircraft Modernization Program (AMP)	-	9.181	6.569	0.020	0.000	0.020	0.000	0.000	0.000	0.000	0.000	15.770
Quantity of RDT&E Articles	-	1	1	-	-	-	-	-	-	-		

**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 completes 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 capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605826F, 0605827F, 0605828F, 0605829F, 0605830F, 0605831F, 0605832F, 0605898F, and 0605833F.

As directed in the FY 2018 NDAA, Sec 825, amendment to PL 114-92 FY 2016 NDAA, Sec 828 Penalty for Cost Overruns, the FY 2018 Air Force penalty total is \$14.373M. The calculated percentage reduction to each research, development, test and evaluation and procurement account will be allocated proportionally from all programs, projects, or activities under such account.

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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.											
B. Program Change Summary (\$ in Millions)				FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total			
Previous President's Budget				7.933	6.569	0.020	0.000	0.020			
Current President's Budget				9.181	6.569	0.020	0.000	0.020			
Total Adjustments				1.248	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				1.528	0.000						
• SBIR/STTR Transfer				-0.280	0.000						
• Other Adjustments				0.000	0.000	0.000	0.000	0.000			
C. Accomplishments/Planned Programs (\$ in Millions)							FY 2018	FY 2019	FY 2020		
Title: KC-10 Mode 5 IFF							9.181	6.569	0.020		
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 2019 Plans: Continuation of engineering design and analysis effort (EMD).											
FY 2020 Plans: Continuation of engineering design and analysis effort (EMD).											
FY 2019 to FY 2020 Increase/Decrease Statement: Transition from RDT&E Engineering and Manufacturing Development efforts to procurement and installation.											
Accomplishments/Planned Programs Subtotals							9.181	6.569	0.020		
D. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
• APAF 05 Line Item C01000: KC-10A (ATCA) - All Programs	4.243	11.104	2.108	-	2.108	3.959	3.443	3.505	-	0.000	28.362

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<b>D. Other Program Funding Summary (\$ in Millions)</b>											
			<u>FY 2020</u>	<u>FY 2020</u>	<u>FY 2020</u>					<u>Cost To</u>	
<u>Line Item</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>Base</u>	<u>OCO</u>	<u>Total</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>Complete</u>	<u>Total Cost</u>
<b>Remarks</b>											
<b>E. Acquisition Strategy</b>											
The acquisition strategy will be a sole source RDT&E effort followed by procurement of kits and modification of KC-10 aircraft.											
<b>F. Performance Metrics</b>											
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Air Force												Date: February 2019			
Appropriation/Budget Activity 3600 / 7						R-1 Program Element (Number/Name) PE 0401219F / KC-10s				Project (Number/Name) 675195 / Aircraft Modernization Program (AMP)					
Product Development (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 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
KC-10 Mode 5: EMD	SS/CPFF	Rockwell Collins : Cedar Rapids, IA	-	8.359	Nov 2017	3.000	Oct 2018	-		-		-	0.000	11.359	-
Subtotal			-	8.359		3.000		-		-		-	0.000	11.359	N/A
Remarks 11 Nov 17: EMD Contract awarded to Rockwell Collins Inc.															
Test and Evaluation (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 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
KC-10 Mode 5: Test and Eval	SS/FPIF	Rockwell Collins : Cedar Rapids, IA	-	-		0.150	Oct 2018	-		-		-	0.000	0.150	0.740
KC-10 Mode 5: NAVAIR Range Support	MIPR	NAVAIR 5.1 : TBD	-	0.048	Sep 2018	-		-		-		-	0.000	0.048	-
KC-10 Mode 5: LCMP Document Support	MIPR	VC-25, GSA Contract - BAH : TBD	-	0.251	Jul 2018	2.669	Oct 2018	-		-		-	0.000	2.920	-
Subtotal			-	0.299		2.819		-		-		-	0.000	3.118	N/A
Remarks Funds ground, AIMS and flight testing, test range support, post test reports.															
Management Services (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 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
KC-10 Mode 5: Mgmt Support	C/FFP	EPASS : Dayton, OH	-	0.408	Apr 2018	0.650	Apr 2019	-		-		-	0.000	1.058	0.630
KC-10 Mode 5: Govt Travel	Reqn	Not specified. : TBD	-	0.115	Oct 2017	0.100	Oct 2018	0.020	Oct 2019	-		0.020	0.000	0.235	-
Subtotal			-	0.523		0.750		0.020		-		0.020	0.000	1.293	N/A

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Management Services (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 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
Remarks Funding for A&AS support contractors.															
			Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	9.181		6.569		0.020		-		0.020	0.000	15.770	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Air Force			Date: February 2019		
Appropriation/Budget Activity 3600 / 7		R-1 Program Element (Number/Name) PE 0401219F / KC-10s		Project (Number/Name) 675195 / Aircraft Modernization Program (AMP)	

	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024			
	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 (contract awarded 16 Nov 17)																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Air Force		Date: February 2019
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 (contract awarded 16 Nov 17)	1	2018	1	2020