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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2017 Air Force **Date:** February 2016

<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 0401219F / KC-10s
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COST (\$ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
Total Program Element	-	2.714	1.799	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.513
675195: <i>Aircraft Modernization Program (AMP)</i>	-	2.714	1.799	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.513
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

The KC-10A Extender is an aerial refueling asset built on the commercial DC-10 airframe. The aircraft creates an air bridge enabling rapid global mobility and global strike missions. There are 59 KC-10A aircraft in the USAF tanker fleet.

The Mode 5 modification is a DoD-mandated (JROCOM 047-07, 5 Mar 07 directs KC-10 IOC by 2014, FOC by 2020) upgrade to the KC-10's Identification Friend or Foe (IFF) system (the primary means of aircraft identification, used for command and control, during Air Defense operations). The Mode 5 upgrade increases anti-spoofing capabilities and lowers the possibility of aircraft/aircrew loss due to misidentification of friendly aircraft. The modification includes a APX-119 Mode 5 capable transponder, new KIV-77 Mode 5 crypto applique replacing the KIV-119, integration into the CNS/ATM avionics with control via the Central Display Unit, removal of the existing IFF control panel, and minor wiring changes.

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>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>
Previous President's Budget	2.714	1.799	0.000	0.000	0.000
Current President's Budget	2.714	1.799	0.000	0.000	0.000
Total Adjustments	0.000	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	0.000	0.000			
• Other Adjustments	0.000	0.000	0.000	0.000	0.000

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<b>Title:</b> Mode 5	2.714	1.799	-
<b>Description:</b> DoD-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.			
<b>FY 2015 Accomplishments:</b> Engineering design and analysis effort to include upgrade of APX-119 transponder with Mode 5 capability, integration with CNS/ATM control panel, and replaces KIV-119 with KIV-77.			
<b>FY 2016 Plans:</b> Engineering design and analysis effort to include upgrade of APX-119 transponder with Mode 5 capability, integration with CNS/ATM control panel, and replaces KIV-119 with KIV-77.			
<b>Accomplishments/Planned Programs Subtotals</b>	2.714	1.799	-

<b>D. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u> <u>Base</u>	<u>FY 2017</u> <u>OCO</u>	<u>FY 2017</u> <u>Total</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APAF:BA05:Line Item #C01000: KC-10A (ATCA)	77.513	5.611	4.570	0.000	4.570	3.502	4.704	4.784	3.404	0.000	104.088

**Remarks**

**E. Acquisition Strategy**

The acquisition strategy will be a sole source 18-month RDT&E effort followed by procurement of kits and modification of fleet.

**F. Performance Metrics**

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 2017 Air Force												Date: February 2016				
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)								
3600 / 7				PE 0401219F / KC-10s				675195 / Aircraft Modernization Program (AMP)								
<b>Product Development (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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	
Mode 5 IFF EMD	SS/FFP	Rockwell Collins : Cedar Rapids, IA	-	2.514	Sep 2015	1.311	Jan 2016	0.000		0.000		0.000	0.000	3.825	3.825	
<b>Subtotal</b>			-	2.514		1.311		0.000		0.000		0.000	0.000	3.825	3.825	
<b>Support (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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	
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-	
<b>Test and Evaluation (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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	
Gov Test and Evaluation (Mode 5)	Various	Contract Crew, AMC/TE, FAA : McGuire AFB, NJ	-	0.000		0.288	Jul 2016	0.000		0.000		0.000	0.000	0.288	0.288	
<b>Subtotal</b>			-	0.000		0.288		0.000		0.000		0.000	0.000	0.288	0.288	
<b>Management Services (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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	
Mode 5 Mission Support	C/CPAF	Various : Tinker AFB, OK	-	0.200	Mar 2015	0.200	Mar 2016	0.000		0.000		0.000	0.000	0.400	0.400	
<b>Subtotal</b>			-	0.200		0.200		0.000		0.000		0.000	0.000	0.400	0.400	
<b>Project Cost Totals</b>			-	2.714		1.799		0.000		0.000		0.000	0.000	4.513	4.513	



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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2017 Air Force</b>		<b>Date:</b> February 2016
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401219F / KC-10s	<b>Project (Number/Name)</b> 675195 / Aircraft Modernization Program (AMP)

	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	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
Mode 5 EMD Contract Award				■																								
Mode 5 EMD				■	■	■	■	■	■	■	■	■																
Mode 5 Production of Kits									■	■	■	■	■	■	■	■												
Mode 5 Kit Installation													■	■	■	■												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2017 Air Force		<b>Date:</b> February 2016
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401219F / KC-10s	<b>Project (Number/Name)</b> 675195 / Aircraft Modernization Program (AMP)

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Mode 5 EMD Contract Award	4	2015	4	2015
Mode 5 EMD	4	2015	2	2017
Mode 5 Production of Kits	1	2017	1	2018
Mode 5 Kit Installation	1	2018	4	2018