

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Air Force										Date: May 2017		
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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
Total Program Element	-	1.597	0.000	7.933	0.000	7.933	6.618	0.020	0.000	0.000	0.000	16.168
675195: Aircraft Modernization Program (AMP)	-	1.597	0.000	7.933	0.000	7.933	6.618	0.020	0.000	0.000	0.000	16.168
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-10A aircraft in the USAF tanker fleet.

Mode 5 is a FAA mandated upgrade program to the USAF 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.

An FAA mandated Automatic Dependent Surveillance-Broadcast (ADS-B) upgrade to the KC-10 is also included as part of Mode 5 to meet DO-260B requirements set by the FAA. Both Identification Friend or Foe (IFF) Mode 5 and Automatic Dependent Surveillance - Broadcast (ADS-B) Out are mandated programs (JROCM 047-07 and FAA Advisory Circular 20-165A) that have a required incorporation NLT 1 Jan 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 USAF.

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.

The program will include a Technology Maturation Risk Reduction Study (TMRR), Formal EMD, Procurement and Installation on KC-10 aircraft.

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Air Force				Date: May 2017		
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				
B. Program Change Summary (\$ in Millions)		FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Previous President's Budget		1.799	0.000	0.000	0.000	0.000
Current President's Budget		1.597	0.000	7.933	0.000	7.933
Total Adjustments		-0.202	0.000	7.933	0.000	7.933
• 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		-0.149	0.000			
• SBIR/STTR Transfer		-0.053	0.000			
• Other Adjustments		0.000	0.000	7.933	0.000	7.933
Change Summary Explanation Change in FY18 funding profile is based on accelerating the program schedule to meet FAA mandate (1 Jan 2020).						
C. Accomplishments/Planned Programs (\$ in Millions)				FY 2016	FY 2017	FY 2018
Title: KC-10 Mode 5 IFF				1.597	-	7.933
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 2016 Accomplishments: The Mode 5 program has completed the following pre-system development efforts to support an FY18 PDR. - Updated ADM approved (30 Sep 16) to proceed with a TMRR Study. - TMRR effort on contract (22 Mar 17).						
FY 2018 Plans: Engineering design and analysis effort (EMD) will include upgrading the APX-119 transponder with Mode 5 capability, replacing the KIV-119 with a KIV-77 and integration/control through the CDU-7000B.						
Accomplishments/Planned Programs Subtotals				1.597	-	7.933

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Air Force										Date: May 2017	
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 0401219F / KC-10s						
D. Other Program Funding Summary (\$ in Millions)											
			<u>FY 2018</u>	<u>FY 2018</u>	<u>FY 2018</u>					<u>Cost To</u>	
<u>Line Item</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Base</u>	<u>OCO</u>	<u>Total</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>Complete</u>	<u>Total Cost</u>
• APAF: BA05: Line Item # C01000: KC-10A (ATCA)	5.611	4.570	4.243	0.000	4.243	6.095	5.149	3.992	3.472	0.000	33.132
Remarks											
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.											
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.											