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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Air Force **Date:** February 2015

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0605221F / KC-46
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	3,231.025	1,505.476	786.437	602.364	-	602.364	314.333	21.380	4.363	-	-	6,465.378
655271: <i>KC-46 RDT&E</i>	3,231.025	1,505.476	786.437	602.364	-	602.364	314.333	21.380	4.363	-	-	6,465.378
Quantity of RDT&E Articles	4	-	-	-	-	-	-	-	-	-	-	-

MDAP/MAIS Code: 387

A. Mission Description and Budget Item Justification

Replacement of the legacy tanker fleet will take place in three stages, known as the KC-X (now the KC-46), KC-Y, and the KC-Z. The initial KC-46 increment will replace roughly a third of the current capability with the purchase of 179 aircraft. The Air Force completed an Analysis of Alternatives (AoA) in Apr 2006 to determine the most appropriate strategy to recapitalize the aging fleet of aerial refueling aircraft. Based on this analysis, the Air Force concluded a strategy of full and open competition to select a commercial derivative replacement tanker aircraft would result in a best value tanker contract. To initiate the first phase of the tanker replacement, the KC-46 program released a final Request for Proposal (RFP) on 24 Feb 2010, and entered source selection on 9 Jul 2010. The KC-46 program held a Milestone B Defense Acquisition Board (DAB) on 23 Feb 2011, received approval to enter Engineering and Manufacturing Development (EMD) from OUSD(AT&L) on 24 Feb 2011, and awarded the KC-46 EMD contract to Boeing on 24 Feb 2011 to develop and procure 179 KC-46 aircraft. Initial sustainment efforts will be provided via Interim Contractor Support (ICS). KC-46 funding will also support a follow-on sustainment planning Business Case Analysis (BCA), various studies/analyses and KC-Y/KC-Z planning activities.

The KC-46 will provide the capability to fuel joint and coalition receivers via a boom or drogue system on every mission and will also augment the airlift fleet with cargo, passenger and aeromedical evacuation capabilities. The KC-46 will operate in day/night and adverse weather conditions to enable deployment, employment, sustainment and redeployment of U.S. joint, allied, and coalition forces. The KC-46 will have communication, navigation and surveillance equipment for world-wide operations; will have the capability to perform missions in chemical and biological environments; will have the ability to operate in up to medium threat environments with self-defense/protection (both active and passive) capabilities; and will have necessary battle space awareness to mitigate survivability threats.

The KC-46 development effort will also procure the necessary ground and flight test assets to support development/operational test. The program has procured four RDT&E aircraft for integration and demonstration of capability which will be operationally fielded after a successful operational test phase. In addition, aircrew and maintenance training systems will be developed and procured using KC-46 funding. The Aircrew Training System (ATS) entered source selection on 31 May 2012 and a contract was awarded on 1 May 2013 to FlightSafety Services Corp. The ATS contract will provide Aircrew Training Devices (ATDs), to include Weapon System Trainers (WST), Boom Operator Trainers (BOT), Fuselage Trainers (FuT) and Part-Task Trainers (PTT) at each Main Operating Base (MOB) and the Formal Training Unit (FTU). The ATS will also support Distributed Mission Operations (DMO), provide aircrew instruction, develop courseware, provide logistics support, acquire Technical Data Packages (TDP) to support future competition efforts, and manage training device concurrency with the aircraft. The Maintenance Training System (MTS) is scheduled to enter source selection in FY2015.

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This program is in Budget Activity 05, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

B. Program Change Summary (\$ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	1,558.590	776.937	606.368	-	606.368
Current President's Budget	1,505.476	786.437	602.364	-	602.364
Total Adjustments	-53.114	9.500	-4.004	-	-4.004
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	9.500			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-53.114	-			
• Other Adjustments	-	-	-4.004	-	-4.004

Change Summary Explanation

FY2015: Increase of \$9.5M RDT&E due to Congressional add for Air Force requested transfer from APAF line 3

FY2016: Decrease of \$4.004M RDT&E due to deflation adjustment.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2014	FY 2015	FY 2016
Title: KC-46 Aircraft Product Development	1,408.894	681.811	341.552
Description: To begin re-capitalizing the aging tanker fleet, EMD activities will be conducted to include the following types of activities: Develop a commercial 767-2C aircraft upon which the KC-46 is based; develop the KC-46 military capability and integrate it into the aircraft; build 4 EMD aircraft; procure live fire assets; procure any required Government Furnished Equipment; procure simulator and maintenance data; develop technical manuals and Type 1 training; conduct development and operational testing.			
FY 2014 Accomplishments: Continued aircraft manufacturing and certification/qualification testing.			
FY 2015 Plans: Continue aircraft manufacturing and certification/qualification testing.			
FY 2016 Plans:			

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Continue aircraft manufacturing and certification/qualification testing.				
Title: KC-46 Trainer Product Development - Aircrew Training System		41.561	37.671	7.606
Description: To begin re-capitalizing the aging tanker fleet, Trainer Development activities will be conducted to include the following types of activities: Development and procurement of Aircrew Training Devices (ATDs), courseware, and associated support equipment.				
FY 2014 Accomplishments: Continued activities associated with Aircrew Training System development, to include: ATDs, Courseware Preliminary Design Reviews (PDRs), and sub-system Critical Design Reviews (CDRs).				
FY 2015 Plans: Continue activities associated with Aircrew Training System development. Anticipate completion of Courseware and ATD CDRs, and initiate Contractor Evaluation & Verification Testing for the ATDs.				
FY 2016 Plans: Delivery of Courseware and ATDs, and conduct Government Acceptance Testing, commencing in second quarter FY2016.				
Title: KC-46 Trainer Product Development - Maintenance Training System		-	1.200	186.349
Description: The KC-46 MTS acquisition focuses on designing, developing, testing, producing, and fielding an optimized training system for KC-46 Maintainers, by integrating various forms of training media and devices into a "blended" solution. This blended solution includes the appropriate mix of hardware and software, "high-fidelity" Augmented Hardware Training Devices (AHTDs), Part Task Trainers (PTTs), Interactive Multimedia Instruction (IMI), and emerging technologies to meet validated AMC Maintenance training requirements.				
FY 2014 Accomplishments: N/A				
FY 2015 Plans: Award KC-46 Maintenance Training System Engineering and Manufacturing Development contract.				
FY 2016 Plans: Continue activities associated with Maintenance Training System development.				
Title: KC-46 Support		29.704	27.273	24.657

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2014	FY 2015	FY 2016
<p>Description: Development, integration and demonstration of the KC-46 mission planning capability. In addition, studies and analysis supporting planning activities for future efficiency initiatives, business case analyses, KC-Y & KC-Z planning, and misc. program office support & planning. Also includes requirements such as travel, office supplies, training courses, and service contracts.</p> <p>FY 2014 Accomplishments: Completed the design of the Mission Planning Environment (MPE). Continued MPE Phase I Development and began Full Qualification Testing (FQT). Continued program support activities</p> <p>FY 2015 Plans: Develop Phase II of the Mission Planning Environment (MPE), continue FQT and begin Development Testing (DT). Continue program support activities</p> <p>FY 2016 Plans: Complete FQT on the Mission Planning System for use in KC-46 Initial Operational Test & Evaluation (IOT&E). Continue program support activities</p>			
<p>Title: KC-46 Test & Evaluation</p> <p>Description: To begin re-capitalizing the aging tanker fleet, Test & Evaluation activities will be conducted to include the following types of activities: Development Test & Evaluation support, Operational Test & Evaluation, Tanker Qualification, Receiver Certifications, Live Fire Test & Evaluation, Federal Aviation Administration (FAA) support, and other test planning and organizational support.</p> <p>FY 2014 Accomplishments: Continued KC-46 Integrated Test & Evaluation planning and began Live Fire Testing</p> <p>FY 2015 Plans: Conduct 767-2C and KC-46 First Flights and begin Ground and Flight Integrated Test & Evaluation. Continue Live Fire Testing and other Test & Evaluation planning activities. Conduct Operational Assessment #2 supporting MS-C.</p> <p>FY 2016 Plans: Complete Ground and Flight Integrated Test & Evaluation and Live Fire Testing; continue other Test & Evaluation planning activities including preparing for IOT&E. The KC-46 program plans to utilize a combination of EMD and Low Rate Initial Production (LRIP) aircraft for IOT&E.</p>	25.317	38.482	42.200
Accomplishments/Planned Programs Subtotals	1,505.476	786.437	602.364

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D. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• APAF: BA02: Line Item #: <i>KC046A</i>	-	1,573.185	2,426.792	-	2,426.792	3,116.887	3,207.227	3,275.563	3,294.863	22,264.839	39,159.357

Remarks

E. Acquisition Strategy

The KC-46 program acquisition strategy is to procure an existing commercial, Federal Aviation Administration (FAA) certified aircraft modified to meet USAF requirements. The KC-46 program released a final Request for Proposal (RFP) on 24 Feb 2010, and entered source selection on 9 Jul 2010. The KC-46 program held a Milestone B Defense Acquisition Board (DAB) on 23 Feb 2011, received approval to enter Engineering and Manufacturing Development (EMD) from OUSD(AT&L) on 24 Feb 2011, and awarded the KC-46 contract to Boeing on 24 Feb 2011 to develop and procure 179 KC-46 aircraft. The KC-46 contract procurement was conducted via a full and open competition per Federal Acquisition Regulation (FAR) Part 15, and resulted in a FY 2011 EMD Fixed Price Incentive Firm (FPIF) contract. The EMD phase will develop, build, and test four KC-46 aircraft, and will qualify the KC-46 as a tanker and certify pairings with receiver aircraft.

Production will begin in FY2015 with the first of two Low-Rate Initial Production (LRIP) lots (Firm Fixed Priced (FFP)) and then Full-Rate Production (FRP) options (FFP with Not to Exceed (NTE) + Economic Price Adjustment (EPA)). The LRIP and FRP options will be exercised following a successful Milestone C for the LRIP decision, and a successful completion of Initial Operational Test and Evaluation (IOT&E) for the FRP decision.

The Aircrew Training System (ATS) acquisition strategy is to provide Aircrew Training Devices (ATDs), and associated support structure, to each Main Operating Base (MOB) and the Formal Training Unit (FTU). The ATS entered source selection on 31 May 2012, and a contract was awarded on 1 May 2013 to FlightSafety Services Corp. The ATS contract procurement was conducted via a full and open competition per Federal Acquisition Regulation (FAR) Part 15, and resulted in a FY 2013 EMD FPIF contract. The EMD phase will develop and procure aircrew training devices. All ATDs will be supported with courseware, Training System Support Center, technical data package and support equipment to ensure system availability and concurrency with the aircraft. Production devices will commence in FY2015 as FFP options. The government plans to compete the development, deployment, and sustainment of a Maintenance Training System, separately.

Based on the market research and a cost effectiveness analysis, the engines will be procured as contractor furnished equipment (CFE) for EMD. Following EMD, the government will assess the potential of breaking out the engines as a separate procurement based on an updated market analysis.

The KC-46 program is responsible for the development, testing, and production of a drogue-equipped, wing-mounted refueling system to meet Capability Development Document (CDD) thresholds and objectives, for simultaneous refueling of two probe-equipped receivers. The system can be installed or removed from the KC-46 as mission needs dictate.

The long-term support concept for the KC-46 is organic two-level maintenance (2LM): organization level (O-level) and depot level (D-level). For the purposes of this program, all maintenance other than O-level shall be referred to as D-level. The product support strategy will initially employ Interim Contractor Support (ICS) before

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3600: <i>Research, Development, Test & Evaluation, Air Force / BA 5: System Development & Demonstration (SDD)</i>	PE 0605221F / KC-46

transitioning to a 100% organically managed maintenance and supply support capability. Performance Based Logistics (PBL) solutions will be evaluated during EMD as viable approaches to facilitate the transition.

This acquisition strategy requires sufficient aircraft to be designed, tested, and delivered to meet a Required Assets Available (RAA) date of 78 months after contract award. RAA is defined as 18 aircraft meeting final production configuration with all required training and support in place. Initial Operational Capability (IOC) will be attained when the Commander, Air Mobility Command (AMC/CC) determines the unit is operationally war ready. AMC has not yet determined an IOC date. Full Operational Capability (FOC) is expected approximately 24 months after IOC.

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 2016 Air Force **Date:** February 2015

Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0605221F / KC-46	Project (Number/Name) 655271 / KC-46 RDT&E
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Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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			
KC-46 aircraft non-recurring development, integration, and testing, 4 RDT&E tanker aircraft and support	C/FPIF	The Boeing Company : Seattle, WA	3,113.894	1,408.895	Oct 2013	681.811	Mar 2015	341.552	Mar 2016	-		341.552	261.784	5,807.936	4,393.857
Aircrew Training System	C/FPIF	FlightSafety Services Corp. : Centennial, CO	16.500	41.561	Jan 2014	37.671	Feb 2015	7.606	Dec 2015	-		7.606	11.449	114.787	78.370
Develop a Maintenance Training System	TBD	TBD : TBD,	0.000	-		1.200	Nov 2015	186.349	Dec 2015	-		186.349	39.626	227.175	-
Subtotal			3,130.394	1,450.456		720.682		535.507		-		535.507	312.859	6,149.898	-

Remarks
 The KC-46 EMD contract was awarded 24 Feb 2011. The contract ceiling price of \$4.9B is the government's maximum financial liability on the prime contract. The "Total Cost" value represents the Milestone B Service Cost Position (SCP), which accounts for the ceiling price of the contract plus the financial risk of potential design changes for the KC-46 Aircraft.

 The MTS contract award is an estimated date.

Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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			
Studies and Analysis associated with the development, integration, and demonstration of KC-46 capability & future planning	Various	Various : Various,	16.193	18.185	Oct 2013	11.596	Oct 2014	13.525	Oct 2015	-		13.525	6.282	65.781	-
Subtotal			16.193	18.185		11.596		13.525		-		13.525	6.282	65.781	-

Remarks
 These contracts are on an as needed basis, with various contract types and performing activities.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force											Date: February 2015				
Appropriation/Budget Activity 3600 / 5						R-1 Program Element (Number/Name) PE 0605221F / KC-46					Project (Number/Name) 655271 / KC-46 RDT&E				

Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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			
Testing and Planning support of development & operational test, FAA & military certification, and aircraft qualification activities	Various	Various : Various,	34.800	25.317	Oct 2013	38.482	Oct 2014	42.200	Oct 2015	-		42.200	16.600	157.399	-
Subtotal			34.800	25.317		38.482		42.200		-		42.200	16.600	157.399	-

Remarks
Integrated Testing and planning activities are performed by government organizations, with some contractor technical subject matter experts and teaming with the Prime Contractor.

Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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			
Program Management Administration - KC-46 A&AS Support	C/FFP	PESystems Inc. : Dayton, OH	27.411	7.479	Feb 2014	7.663	Jan 2015	5.006	Jan 2016	-		5.006	0.066	47.625	-
Program Management Administration - Trainer A&AS Support	C/FFP	National Technologies Assoc. Inc. : Dayton, OH	0.000	1.800	Dec 2013	2.387	Dec 2014	2.387	Dec 2015	-		2.387	3.042	9.616	-
Program Management Administration - Other	Various	KC-46 Program Office : Dayton, W-P AFB, OH	22.227	2.239	Oct 2013	5.627	Oct 2014	3.739	Oct 2015	-		3.739	1.227	35.059	-
Subtotal			49.638	11.518		15.677		11.132		-		11.132	4.335	92.300	-

Remarks
2 A&AS contracts over \$1M. Other PMA funding includes but is not limited to: A&AS contracts less than \$1M, travel, supplies and training.

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	3,231.025	1,505.476	786.437	602.364	-	602.364	340.076	6,465.378	-

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Air Force **Date:** February 2015

Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0605221F / KC-46	Project (Number/Name) 655271 / KC-46 RDT&E
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
EMD: KC-46 Aircraft	1	2014	2	2018
Test & Evaluation	1	2014	2	2017
767-2C First Flight	1	2015	1	2015
Tanker First Flight	3	2015	3	2015
Operational Assessment #2	1	2015	3	2015
Initial Operational Test & Evaluation	1	2017	2	2017
Low Rate Initial Production - Lot 1	1	2016	1	2017
Low Rate Initial Production - Lot 2	3	2016	4	2017
Full Rate Production - Lot 3	1	2018	1	2019
Full Rate Production - Lot 4	3	2018	1	2020
Maintenance Tech Order Development	1	2014	2	2017
100% Tech Order In Process Review	1	2016	1	2016
Deliver Formal Tech Orders	2	2017	2	2017
Support Equipment Analysis	1	2014	3	2016
Provisioning	1	2014	2	2018
Depot Maintenance Inter-servicing (DMI), Source of Repair Assignment Process (SORAP), Activation Planning & FAA Certifications	1	2014	2	2020
First C-Check	3	2018	3	2018
Aircrew Training System Development & Updates	1	2014	4	2019
Maintenance Training System Development & Updates	1	2016	3	2018