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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force / 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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	5,566.234	77.852	59.561	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5,703.647
651120: <i>Pegasus Capability Improvements</i>	0.000	0.000	13.868	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	13.868
655271: <i>KC-46 RDT&E</i>	5,566.234	77.852	45.693	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5,689.779

Program MDAP/MAIS Code: 387

A. Mission Description and Budget Item Justification

Replacement of the legacy tanker fleet will take place in several stages. The initial tanker replacement increment of KC-46s will replace roughly a third of the current capability. Future programs will ultimately recapitalize the entire tanker fleet over a period of more than 30 years. 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 (MS B) Defense Acquisition Board (DAB) on 23 Feb 2011, received approval to enter Engineering and Manufacturing Development (EMD) from the Undersecretary of Defense (Acquisition, Technology and Logistics) (USD(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. The program is procuring four RDT&E aircraft for integration and demonstration of capability which will ultimately be operationally fielded. During production, the program plans to procure 175 aircraft throughout 13 lots. The KC-46 program held a MS C DAB on 12 Aug 2016 and received approval to enter Low Rate Initial Production (LRIP). The program awarded LRIP Lots 1 and 2 on 18 Aug 2016, LRIP Lot 3 on 27 Jan 2017, LRIP Lot 4 on 10 Sep 2018, and LRIP Lot 5 on 27 Sep 2019. Lot 6 award is planned for May 2020 totaling 79 aircraft to date. The Air Force delivered the first KC-46 to McConnell Air Force Base on 25 Jan 2019. As of 10 Jan 2020, 30 aircraft have been delivered to the Air Force. KC-46 funding also supports Training Systems, Direct Mission Support, Program Management Administration (PMA) activities, government developmental and operational test support, mission planning capability development, various studies and analyses, KC-46 requirements definition and demonstrations in support of Air Force Advanced Battle Management System (ABMS) initiative, engineering changes, and future tanker replacement 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 worldwide operations; the capability to perform missions in chemical and biological environments; the ability to operate in up to medium threat environments with self-defense/protection (both active and passive) capabilities; and the necessary battlespace awareness to mitigate survivability threats.

The Aircrew Training System (ATS) and the Maintenance Training System (MTS) are being developed and procured using KC-46 funding. The ATS contract was awarded on 1 May 2013 to FlightSafety Services Corporation. The ATS contract will provide Aircrew Training Devices (ATDs), to include Weapon System Trainers (WSTs), Boom Operator Trainers (BOTs), Fuselage Trainers (FuTs), and Part-Task Trainers (PTTs) at each Main Operating Base (MOB) and the Formal Training Unit

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Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force / BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0605221F / KC-46
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(FTU). The ATS contract will also support Distributed Mission Operations (DMO), provide aircrew instruction, develop courseware, provide logistics support, acquire a technical data package to support future competition efforts, and manage training device concurrency with the aircraft.

The MTS contract was awarded 6 Jul 2016 to The Boeing Company. The 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 Maintenance Training Devices (MTDs) into a "blended" solution. This blended solution includes the appropriate mix of hardware and software, "high-fidelity" Augmented Hardware Training Devices (AHTDs), PTTs, Interactive Multimedia Instruction (IMI), and emerging technologies to meet validated Air Mobility Command (AMC) maintenance training requirements.

In FY2021, PE 0605221F KC-46, Project 655271 KC-46 RDT&E, and Project 651120 Pegasus Capability Improvements efforts were transferred to PE 401221F, Project 655271 KC-46 RDT&E, and Project 651120 Pegasus Capability Improvements in order to consolidate all KC-46 activity under a single PE. PE 0401221F also has historical Tanker Replacement costs from FY 2005-2008.

This requirement supports performance of a full financial audit as required by title 10 U.S.C. Chapter 9A, Sec 240-D.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver KC-46 weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605831F.

This program is in Budget Activity 5, 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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	80.170	59.561	78.948	0.000	78.948
Current President's Budget	77.852	59.561	0.000	0.000	0.000
Total Adjustments	-2.318	0.000	-78.948	0.000	-78.948
• 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	-2.318	0.000			
• Other Adjustments	0.000	0.000	-78.948	0.000	-78.948

Change Summary Explanation

FY 2019 was reduced by \$2.318M for Small Business Innovation Research (SBIR).
 FY 2021 funding transferred to PE 0401221F.

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0605221F / KC-46	Project (Number/Name) 651120 / Pegasus Capability Improvements
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
651120: <i>Pegasus Capability Improvements</i>	0.000	0.000	13.868	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	13.868
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

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 worldwide operations; the capability to perform missions in chemical and biological environments; the ability to operate in up to medium threat environments with self-defense/protection (both active and passive) capabilities; and the necessary battlespace awareness to mitigate survivability threats.

The dynamics and mission urgency of the post-production (post-DD-250) environment requires the program to maintain a flexible and responsive posture to support a broad range of mission support needs. The KC-46 will continue to identify, design, develop, integrate, verify, certify, produce, install, field, and sustain a comprehensive range of non-recurring and recurring post-production, air vehicle enhancements and field support needs. These needs may originate from programmed Mobility Air Force (MAF) requirements, Combatant Commander Joint or Urgent Operational Needs (JUON/UON), non-programmed Federal Aviation Administration (FAA) directives, requirements identified and supported by Higher Headquarters (HHQ) Enterprise Capability Collaboration Teams (i.e., High Value Airborne Asset [HVAA], Air Superiority 2030, and Multi-Domain Command and Control [MDC2]), or correction of field deficiencies.

The KC-46 will continue to develop, field, and sustain warfighter capabilities to meet evolving threats and mission support requirements through Block or discrete modification or modernization programs depending on mission urgency, available funding, and programmatic and technical risks. Post-production requirements can include, but will not be limited to: avionics and structural systems/ architecture and subsystem updates, general mission equipment updates and procurement, general sustainment support, studies and analyses, future Tanker requirements simulation and training, and correction of field deficiencies.

BPAC 651120 funding will also support Program Management Administration (PMA) activities, test support, mission planning capability development and various studies and analyses.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver KC-46 weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605831F.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2019	FY 2020	FY 2021
Title: KC-46A Block 1 Pegasus Advanced Communications Suite (PACS)	-	13.868	0.000
Description: The KC-46A Block 1 Pegasus Advanced Communications Suite (PACS) program will satisfy Department of Defense (DoD), National Security Agency (NSA), Department of Transportation (DoT), and USAF mandates by upgrading legacy Tactical			

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force		Date: February 2020
Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0605221F / KC-46	Project (Number/Name) 651120 / Pegasus Capability Improvements

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021
Data Link 16, Beyond Line-of-Sight (BLOS) Ultra High Frequency (UHF) Line-of-Sight (LOS) capabilities with next-generation Link 16 terminals and UHF secure, global, BLOS and anti-jam LOS satellite voice communications capabilities for the KC-46 weapon system. PACS enables compatibility and interoperability with current and planned future joint and allied forces while simultaneously increasing the survivability of secure global voice and data communications capabilities between Mobility Air Force (MAF) Command and Control (C2) agencies and MAF aircraft operating worldwide in or near contested environments.			
FY 2020 Plans: Funding moved to Project 655271 to support KC-46 baseline efforts.			
FY 2021 Plans: N/A			
FY 2020 to FY 2021 Increase/Decrease Statement: Funding transferred to PE 0401221F in FY2021.			
Accomplishments/Planned Programs Subtotals	-	13.868	0.000

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u> <u>Base</u>	<u>FY 2021</u> <u>OCO</u>	<u>FY 2021</u> <u>Total</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APAF 05 KC046A: KC-46A MDAP	8.547	5.213	-	-	-	-	-	-	-	-	Continuing Continuing

Remarks

D. Acquisition Strategy
 The KC-46 Post-Production Change Management (PPCM) construct is comprised of processes and tools specifically tailored to a broad spectrum of post-production requirements to support the KC-46 enterprise (e.g. weapon system, sustainability, training devices). PPCM is designed to leverage competition when applicable and emphasize configuration management and discrete cost accounting methodologies. KC-46 PPCM oversight will promote competition throughout the life cycle of the KC-46A fleet. All KC-46 post-production requirements and associated acquisition strategies will be carefully managed, reviewed, and approved at the appropriate levels by the KC-46 Division and/or Tanker Directorate senior functional leaders. PPCM requirements will employ multiple contract-types, tailored to the requirement and documented in discrete Acquisition Strategy Panel briefings, to minimize cost, technical, and schedule execution risks and ensure on-time deliverables. In addition, all ACAT-level programs, deriving from the PPCM process, will follow Department of Defense (DoD) Directive 5000.01 and DoD Instruction 5000.02 guidelines and directives, as applicable, to ensure management controls--commensurate with the scope and cost of the supported requirement.

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 Air Force		Date: February 2020
Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0605221F / KC-46	Project (Number/Name) 651120 / Pegasus Capability Improvements

FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025			
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-46A Block I PACS

Project Planning prior to award in FY21 with funding in new PE 0401221F



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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Air Force		Date: February 2020
Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0605221F / KC-46	Project (Number/Name) 651120 / <i>Pegasus Capability Improvements</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
KC-46A Block I PACS				
Project Planning prior to award in FY21 with funding in new PE 0401221F	1	2020	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force										Date: February 2020		
Appropriation/Budget Activity 3600 / 5					R-1 Program Element (Number/Name) PE 0605221F / KC-46				Project (Number/Name) 655271 / KC-46 RDT&E			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
655271: KC-46 RDT&E	5,566.234	77.852	45.693	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5,689.779
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Replacement of the legacy tanker fleet will take place in several stages. The initial tanker replacement increment of KC-46s will replace roughly a third of the current capability. Future programs will ultimately recapitalize the entire tanker fleet over a period of more than 30 years. 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 (MS B) Defense Acquisition Board (DAB) on 23 Feb 2011, received approval to enter Engineering and Manufacturing Development (EMD) from the Undersecretary of Defense (Acquisition, Technology and Logistics) (USD(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. The program is procuring four RDT&E aircraft for integration and demonstration of capability which will ultimately be operationally fielded. During production, the program plans to procure 175 aircraft throughout 13 lots. The KC-46 program held a MS C DAB on 12 Aug 2016 and received approval to enter Low Rate Initial Production (LRIP). The program awarded LRIP Lots 1 and 2 on 18 Aug 2016, LRIP Lot 3 on 27 Jan 2017, LRIP Lot 4 on 10 Sep 2018, and LRIP Lot 5 on 27 Sep 2019. Lot 6 award is planned for May 2020, and will bring the total number of aircraft on contract to 79. The Air Force delivered the first KC-46 to McConnell Air Force Base on 25 Jan 2019. As of 10 Jan 2020, 30 aircraft have been delivered to the Air Force. KC-46 funding also supports Training Systems, Direct Mission Support, Program Management Administration (PMA) activities, government developmental and operational test support, mission planning capability development, various studies and analyses, engineering changes, and future tanker replacement 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 worldwide operations; the capability to perform missions in chemical and biological environments; the ability to operate in up to medium threat environments with self-defense/protection (both active and passive) capabilities; and the necessary battlespace awareness to mitigate survivability threats.

The Aircrew Training System (ATS) and the Maintenance Training System (MTS) are being developed and procured using KC-46 funding. The ATS contract was awarded on 1 May 2013 to FlightSafety Services Corporation. The ATS contract will provide Aircrew Training Devices (ATDs), to include Weapon System Trainers (WSTs), Boom Operator Trainers (BOTs), Fuselage Trainers (FuTs), and Part-Task Trainers (PTTs) at each Main Operating Base (MOB) and the Formal Training Unit (FTU). The ATS contract will also support Distributed Mission Operations (DMO), provide aircrew instruction, develop courseware, provide logistics support, acquire a technical data package to support future competition efforts, and manage training device concurrency with the aircraft.

The MTS contract was awarded 6 Jul 2016 to The Boeing Company. The 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 Maintenance Training Devices (MTDs) into a "blended" solution. This

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force	Date: February 2020
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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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blended solution includes the appropriate mix of hardware and software, "high-fidelity" Augmented Hardware Training Devices (AHTDs), PTTs, Interactive Multimedia Instruction (IMI), and emerging technologies to meet validated Air Mobility Command (AMC) maintenance training requirements.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver KC-46 weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605831F.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2019	FY 2020	FY 2021
<p>Title: KC-46 Aircraft Product Development</p> <p>Description: 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 four EMD aircraft; procure live fire assets; procure required Government Furnished Equipment (GFE); procure simulator and maintenance data; develop technical manuals and Type 1 training; and conduct development and operational testing.</p> <p>FY 2020 Plans: Continue product refinement, studies, ground, and flight testing in support of the KC-46 weapon system to include receiver certifications, simulator data collection, and completion of IOT&E events/reporting. Continue execution of boom telescope actuator redesign (BTAR) Engineering Change Proposal (ECP) and support other government costs associated with solution for Remote Vision System (RVS). Study, analyze, test and update documentation in order to certify and increase KC-46 capability for aerial refueling onload.</p> <p>FY 2021 Plans: N/A</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: Funding transferred to PE 0401221F in FY2021.</p>	31.918	30.054	0.000
<p>Title: KC-46 Trainer Product Development - Maintenance Training System (MTS)</p> <p>Description: Trainer development activities will be conducted to include the following types of activities: development and procurement of MTDs, courseware, and associated support equipment.</p> <p>FY 2020 Plans: N/A</p> <p>FY 2021 Plans: N/A</p>	0.327	0.000	0.000
<p>Title: KC-46 Support</p> <p>Description: Development, integration, and demonstration of the KC-46 mission planning capability. In addition, studies and analysis to support planning activities for future efficiency initiatives, business case analyses, future tanker replacement planning,</p>	7.182	4.799	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force	Date: February 2020
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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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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021
and miscellaneous Program Office support and planning. Also includes requirements such as travel, office supplies, training courses, and service contracts. FY 2020 Plans: Continue Program Office Support and Planning. FY 2021 Plans: N/A FY 2020 to FY 2021 Increase/Decrease Statement: Funding transferred to PE 0401221F in FY2021.			
Title: KC-46 Test & Evaluation Description: Test & Evaluation (T&E) activities will be conducted to include the following types of activities: Development Test & Evaluation, Operational Test & Evaluation, Tanker Qualification, Receiver Certifications, Live Fire Test & Evaluation (LFT&E), Federal Aviation Administration (FAA) support, and other test planning and organizational support. FY 2020 Plans: Continue using EMD, pre-delivery production, and/or LRIP aircraft to support Aerial Refueling (AR) tanker-receiver certification testing, Aerial Refueling Simulator Qualifications data collection, correction of deficiencies, and other T&E activities for the KC-46. Complete IOT&E events/reporting in support of the Full Rate Production decision. FY 2021 Plans: N/A FY 2020 to FY 2021 Increase/Decrease Statement: Funding transferred to PE 0401221F in FY2021.	38.425	10.840	0.000
Accomplishments/Planned Programs Subtotals	77.852	45.693	0.000

C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2019	FY 2020	FY 2021 <u>Base</u>	FY 2021 <u>OCO</u>	FY 2021 <u>Total</u>	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost	
• APAF 02 Line Item KC046A: KC-46A Tanker	2,238.932	2,139.705	-	-	-	-	-	-	-	-	Continuing	Continuing
• APAF 06 Line Item 000999: Initial Spares	231.457	0.000	-	-	-	-	-	-	-	-	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force	Date: February 2020
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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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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u> <u>Base</u>	<u>FY 2021</u> <u>OCO</u>	<u>FY 2021</u> <u>Total</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
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Remarks

D. Acquisition Strategy

The KC-46 Program acquisition strategy is to procure an existing commercial, FAA certified aircraft modified to meet USAF requirements. The KC-46 program released a final RFP on 24 Feb 2010, and entered source selection on 9 Jul 2010. The KC-46 program held a MS B DAB on 23 Feb 2011, received approval to enter EMD from the USD(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.

The MS B acquisition strategy planned for two LRIP lots followed by 11 Full Rate Production (FRP) lots for a total aircraft procurement of 175 production aircraft. Updates to the acquisition strategy occurred in support of Milestone C (MS C) that increased LRIP from two to five lots and the remaining eight to be FRP lots with the total aircraft buy remaining at 175 Production aircraft (+4 EMD aircraft for a grand total of 179 aircraft).

LRIP consists of two Firm Fixed Price (FFP) and three FFP Not to Exceed (NTE) options (LRIP-1 Qty 7, LRIP-2 Qty 12, LRIP-3 Qty 15, LRIP-4 Qty 18, and LRIP-5 Qty 15). This will be followed by eight (Lots 6-13) FFP production options [via NTE values + Economic Price Adjustment (EPA)]. LRIP Lots 1 and 2 were awarded on 18 Aug 2016, LRIP Lot 3 was awarded on 27 Jan 2017, LRIP Lot 4 was awarded on 10 Sep 2018, and LRIP Lot 5 was awarded on 27 Sep 2019.

The ATS acquisition strategy is to provide ATDs, and associated support structure, to each MOB and the FTU. The ATS EMD FPIF contract with production options was conducted via a full and open competition per FAR Part 15, and awarded to FlightSafety Services Corporation in FY 2013. The ATS EMD phase will develop and procure ATDs; and will be supported with courseware, Training System Support Center, the technical data package, and support equipment to ensure system availability and concurrency with the aircraft. The first four ATS production options were exercised on 19 Aug 2015, 31 May 2017, 30 Apr 2018, and 31 Mar 2019.

The MTS acquisition strategy is to acquire MTDs, and associated support structure, for two AMC active duty Regional Maintenance Training Facilities. The MTS EMD FFP contract with production options was conducted via a full and open competition per FAR Part 15, and awarded to The Boeing Company in FY 2016. The MTS EMD phase will develop and procure MTDs; and will be supported with courseware, Training System Support Center, the technical data package, and support equipment to ensure system availability and concurrency with the aircraft.

The KC-46 Program is responsible for the development, testing, and production of a drogue-equipped, wing-mounted refueling system to meet Capability Production Document (CPD) 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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Appropriation/Budget Activity	R-1 Program Element (Number/Name)	Project (Number/Name)
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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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Air Force **Date:** February 2020

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 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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-46A aircraft non-recurring development, integration, and testing; 4 RDT&E tanker aircraft; and support	C/FPIF	The Boeing Company : Seattle, WA	5,028.985	31.918	Jan 2020	30.054	Apr 2020	-		-		-	0.000	5,090.957	5,053.500
KC-46A Aircrew Training System	C/FPIF	FlightSafety Services Corp. : Centennial, CO	86.863	0.000		-		-		-		-	0.000	86.863	87.499
KC-46A Maintenance Training System	C/FFP	The Boeing Company : St. Louis, MO	46.090	0.327	Mar 2020	-		-		-		-	0.000	46.417	45.840
Subtotal			5,161.938	32.245		30.054		-		-		-	0.000	5,224.237	N/A

Remarks
The KC-46 EMD contract was awarded 24 Feb 2011. The total cost represents the current Program Office Estimate (POE) which accounts for the ceiling price of the contract plus the financial and schedule risk of potential design changes for the KC-46 aircraft.

FINANCIAL PERFORMANCE: The KC-46 is evaluated against traditional Research and Development (R&D) program expenditure benchmarks. Unlike many traditional R&D programs, the KC-46 EMD contract is a FPIF contract with progress payments. Twenty percent of incurred costs are withheld until the end of the contract, when they are liquidated. Mandatory funding obligations and progress payment withholds will cause the program to lag traditional expenditure benchmarks, painting an inaccurate portrait of overall program health.

Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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-46A studies and analysis associated with the development, integration, and demonstration of KC-46 capability & future planning	C/CPAF	Various : Various	94.201	0.198	Apr 2019	-		-		-		-	0.000	94.399	-
Subtotal			94.201	0.198		-		-		-		-	0.000	94.399	N/A

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 2021 Air Force **Date:** February 2020

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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Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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-46A testing and planning support of development & operational test, FAA & military certification, and aircraft qualification activities	Various	Various : Various	190.870	38.425	Mar 2019	10.840	Mar 2020	-		-		-	0.000	240.135	-
Subtotal			190.870	38.425		10.840		-		-		-	0.000	240.135	N/A

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 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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-46A Program Management Administration - Program A&AS Support	C/FFP	US Falcon : Dayton, OH	64.657	4.847	Jul 2019	-		-		-		-	0.000	69.504	67.040
KC-46A Program Management Administration - Trainer A&AS Support	C/CPFF	HX5 : Fort Walton Beach, FL	11.575	0.000		-		-		-		-	0.000	11.575	11.520
KC-46A Program Management Administration - Other	Various	KC-46 Program Office : Dayton, W-P AFB, OH	42.993	2.137	Jun 2019	4.799	Mar 2020	-		-		-	0.000	49.929	-
Subtotal			119.225	6.984		4.799		-		-		-	0.000	131.008	N/A

Remarks
Two Direct Mission Support contracts in FY20 over \$1M.

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Air Force **Date:** February 2020

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 by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
KC-46				
EMD: KC-46 Aircraft	1	2019	4	2020
Developmental Test and Evaluation to support aircraft delivery	1	2019	1	2020
Receiver Certification	2	2019	3	2020
Initial Operational Test and Evaluation	4	2019	4	2020
Government Testing for Correction of Deficiencies	4	2019	4	2020
Boom Telescope Actuator Redesign ECP	4	2019	4	2020
Mission Planning Support	1	2019	4	2020
Depot Maintenance Inter-Servicing (DMI), Source of Repair Assignment Process (SORAP), Activation Planning & FAA Certifications	1	2019	4	2019
Aircrew Training System Development and Updates	1	2019	4	2020
Maintenance Training System Development & Updates	1	2019	3	2020

Note

Funding transferred to PE 040221F in FY 2021.