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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 0401221F / <i>KC-46A Tanker Squadrons</i>
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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	132.231	0.000	0.000	106.262	0.000	106.262	108.598	66.553	39.830	0.000	0.000	453.474
651120: <i>Pegasus Capability Improvements</i>	0.000	0.000	0.000	18.060	0.000	18.060	22.435	25.216	19.077	0.000	0.000	84.788
655271: <i>KC-46 RDT&E</i>	132.231	0.000	0.000	88.202	0.000	88.202	86.163	41.337	20.753	0.000	0.000	368.686

Program MDAP/MAIS Code: 387

Note

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 reflected in prior years. PE 0605221F has costs from FY2009 to FY2020.

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, KC-46 requirements definition and demonstrations in support of Air Force Advanced Battle Management (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

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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 0401221F / <i>KC-46A Tanker Squadrons</i>
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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 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 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	0.000	0.000	0.000	0.000	0.000
Current President's Budget	0.000	0.000	106.262	0.000	106.262
Total Adjustments	0.000	0.000	106.262	0.000	106.262
• 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	106.262	0.000	106.262

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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 0401221F / KC-46A Tanker Squadrons	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	0.000	18.060	0.000	18.060	22.435	25.216	19.077	0.000	0.000	84.788
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

In FY 2021, PE 0605221F, KC-46, efforts were transferred to PE 0401221F, KC-46, in order to consolidate all KC-46 activity under a single PE. PE 0401221F also has historical Tanker Replacement costs from FY 2005-2008. PE 0605221F has costs from FY2009 to FY2020.

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 require 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 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.

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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 0401221F / KC-46A Tanker Squadrons	Project (Number/Name) 651120 / Pegasus Capability Improvements		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2019	FY 2020	FY 2021
<p>Title: KC-46A Block 1 Pegasus Advanced Communications Suite (PACS)</p> <p>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 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) C2 agencies and MAF aircraft operating worldwide in or near contested environments.</p> <p>FY 2020 Plans: N/A</p> <p>FY 2021 Plans: Planned Contract Award of Block 1 PACS EMD program for first 12 months of effort.</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: Funding increased in FY21 due to transfer of efforts from PE 0605221F, KC-46 to PE 0401221F, KC-46 in order to consolidate all KC-46 activity under a single PE.</p>		0.000	0.000	16.474
<p>Title: KC-46 Mod Test & Evaluation</p> <p>Description: Test & Evaluation (T&E) activities will be conducted for Receiver Certification as a follow on to the ACAT I program.</p> <p>FY 2020 Plans: N/A</p> <p>FY 2021 Plans: Planned funding for Receiver Certifications follow-on to ACAT I program.</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: Funding increased in FY21 due to transfer of efforts from PE 0605221F, KC-46 to PE 0401221F, KC-46 in order to consolidate all KC-46 activity under a single PE.</p>		0.000	0.000	1.000
<p>Title: Support</p> <p>Description: Studies and analysis to support planning activities for future initiatives for upgrades, future tanker replacement planning, and miscellaneous Program Office support and planning. Also includes requirements such as travel and training.</p> <p>FY 2020 Plans:</p>		0.000	0.000	0.586

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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 0401221F / KC-46A Tanker Squadrons	Project (Number/Name) 651120 / Pegasus Capability Improvements

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021
N/A			
FY 2021 Plans: Planned funding for Program Office Support and planning.			
FY 2020 to FY 2021 Increase/Decrease Statement: Funding increased in FY21 due to transfer of efforts from PE 0605221F, KC-46 to PE 0401221F, KC-46 in order to consolidate all KC-46 activity under a single PE.			
Accomplishments/Planned Programs Subtotals	0.000	0.000	18.060

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 41221F/ KC046A: KC-46A Tanker	-	-	24.085	-	24.085	70.189	56.652	-	-	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-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 0401221F / KC-46A Tanker Squadrons	Project (Number/Name) 651120 / Pegasus Capability Improvements
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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 Capability Upgrades (to include modification and modernization)	SS/CPFF	The Boeing Company : Seattle, WA	0.000	-		-		16.474	Dec 2020	-		16.474	Continuing	Continuing	-
Subtotal			0.000	-		-		16.474		-		16.474	Continuing	Continuing	N/A

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			
Test and Evaluation	Various	Various : Various	0.000	-		-		1.000	Jan 2021	-		1.000	Continuing	Continuing	-
Subtotal			0.000	-		-		1.000		-		1.000	Continuing	Continuing	N/A

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			
Program Management Administration Activities	Various	KC-46 Program Office : Dayton, W-P AFB, OH	0.000	-		-		0.586	Oct 2020	-		0.586	Continuing	Continuing	-
Subtotal			0.000	-		-		0.586		-		0.586	Continuing	Continuing	N/A

	Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract									
Project Cost Totals											0.000	-		0.000		18.060	-		18.060	Continuing	Continuing	N/A

Remarks
In FY21, all KC-46 costs were transferred to PE 0401221F in order to consolidate all KC-46 activity under a single PE. For all costs in FY19 and FY20, refer to PE 0605221F.

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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 0401221F / <i>KC-46A Tanker Squadrons</i>	Project (Number/Name) 651120 / <i>Pegasus Capability Improvements</i>	

	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

<i>Pegasus Capability Improvements</i>																												
KC-46A Block I PACS																												

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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 0401221F / <i>KC-46A Tanker Squadrons</i>	Project (Number/Name) 651120 / <i>Pegasus Capability Improvements</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Pegasus Capability Improvements</i>				
KC-46A Block I PACS	1	2021	2	2025

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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 0401221F / KC-46A Tanker Squadrons				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	132.231	0.000	0.000	88.202	0.000	88.202	86.163	41.337	20.753	0.000	0.000	368.686
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

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 reflected in prior years. PE 0605221F has costs from FY2009 to FY2020.

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.

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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 / 5	R-1 Program Element (Number/Name) PE 0401221F / <i>KC-46A Tanker Squadrons</i>	Project (Number/Name) 655271 / <i>KC-46 RDT&E</i>
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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.

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: N/A</p> <p>FY 2021 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 (AR) onload.</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: Funding increased from FY20 to FY21 by \$46M for BTAR effort. First year of funding in this PE, previous funding in PE 0605221F.</p>	-	0.000	76.005
<p>Title: KC-46 Test & Evaluation</p> <p>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.</p> <p>FY 2020 Plans:</p>	-	0.000	10.997

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Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0401221F / KC-46A Tanker Squadrons	Project (Number/Name) 655271 / KC-46 RDT&E
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021
N/A			
<p>FY 2021 Plans: Continue using EMD, pre-delivery production, and/or LRIP aircraft to support AR tanker-receiver certification testing, Aerial Refueling Simulator Qualifications data collection, correction of deficiencies, and other T&E activities for the KC-46. Continue RVS Government Test/Wing Aerial Refueling Pod (WARP) testing.</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: Funding increased from FY20 to FY21 by \$.1M as Receiver Certification and RVS testing efforts continue. First year of funding in this PE, previous funding in PE 0605221F.</p>			
<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, and miscellaneous Program Office support and planning. Also includes requirements such as travel, office supplies, training courses, and service contracts.</p> <p>FY 2020 Plans: N/A</p> <p>FY 2021 Plans: Continue Program Office Support and Planning.</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: Funding decreased from FY20 to FY21 by \$3.6M as majority of KC-46 support efforts have shifted to Production funding. First year of funding in this PE, previous funding in PE 0605221F.</p>	-	0.000	1.200
Accomplishments/Planned Programs Subtotals	-	0.000	88.202

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 02 Line Item	-	-	2,850.151	-	2,850.151	2,249.778	2,401.584	2,962.308	2,837.685	Continuing	Continuing
KC046A: KC-46A Tanker											
• APAF 06 Line Item	-	-	194.189	-	194.189	230.095	216.312	239.170	243.542	Continuing	Continuing
000999: Initial Spares											

Remarks

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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 0401221F / KC-46A Tanker Squadrons	Project (Number/Name) 655271 / KC-46 RDT&E
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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 is developing, building, and testing 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 three ATS production options were exercised on 19 Aug 2015, 31 May 2017, and 30 Apr 2018.

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 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 0401221F / KC-46A Tanker Squadrons	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	0.000	-		-		76.005	Apr 2021	-		76.005	Continuing	Continuing	5,053.500
Subtotal			0.000	-		-		76.005		-		76.005	Continuing	Continuing	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.

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	0.000	-		-		10.997	Mar 2021	-		10.997	Continuing	Continuing	-
Subtotal			0.000	-		-		10.997		-		10.997	Continuing	Continuing	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.

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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 0401221F / KC-46A Tanker Squadrons	Project (Number/Name) 655271 / KC-46 RDT&E
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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 - Other	Various	KC-46 Program Office : Dayton, W-P AFB, OH	132.231	-		-		1.200	Oct 2020	-		1.200	0.000	133.431	-
Subtotal			132.231	-		-		1.200		-		1.200	0.000	133.431	N/A

Remarks
Other PMA funding includes, but is not limited to, travel, supplies, and training.

	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	132.231	-	0.000	88.202	-	88.202	Continuing	Continuing	N/A

Remarks
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 reflected in prior years. PE 0605221F has costs from FY2009 to FY2020.

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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 0401221F / <i>KC-46A Tanker Squadrons</i>	Project (Number/Name) 655271 / <i>KC-46 RDT&E</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
KC-46				
Initial Operational Test & Evaluation (WARPs)	1	2021	2	2021
Government Testing for Correction of Deficiencies	1	2021	4	2024
Boom Telescope Actuator Redesign ECP	1	2021	4	2023
Aircrew Training System Development & Updates	1	2021	4	2023