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

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| Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force / BA 7: Operational Systems Development</i> | R-1 Program Element (Number/Name) PE 0401219F / KC-10s |
|--|--|

| 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 | - | 5.084 | 0.020 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 5.104 |
| 675195: <i>Aircraft Modernization Program (AMP)</i> | - | 5.084 | 0.020 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 5.104 |
| Quantity of RDT&E Articles | - | 1 | - | - | - | - | - | - | - | - | - | - |

A. Mission Description and Budget Item Justification

The KC-10 is an aerial refueling asset built on the commercial DC-10 airframe. This aircraft creates an air bridge enabling rapid global mobility and global strike missions. There are 59 KC-10 aircraft in the USAF tanker fleet. KC-10 has a divestiture strategy that will follow Fiscal Year 2019 National Defense Authorization Act and Air Force requirements.

Mode 5 program is a Department of Defense mandated upgrade to the Identification Friend or Foe (IFF) system, the primary means of command and control aircraft identification. Mode 5 increases anti-spoofing capabilities and lowers the possibility of aircraft/aircrew loss due to misidentification of friendly aircraft. The KC-10 modification program includes a Mode 5 capable APX-119 transponder, a new KIV-77 crypto applique and integration/control through the CDU-7000F flight management computer.

A Federal Aviation Administration (FAA) mandated Automatic Dependent Surveillance-Broadcast (ADS-B) Out upgrade to the KC-10 is also included as part of Mode 5 to meet DO-260B requirements set by the FAA. Both IFF Mode 5 and ADS-B Out are mandated programs (Joint Requirements Oversight Council Memorandum 047-07 and FAA Advisory Circular 20-165B) that have a required incorporation no later than 1 January 2020 (ADS-B) and 1 July 2020 (Mode 5). Both modifications are accomplished by modification of the APX-119 Line Replaceable Unit (LRU) and can easily be accomplished at the same time and at a significant cost savings to the Air Force.

The program completed formal Engineering and Manufacturing Development (EMD) and will procure kits for installation on all KC-10 aircraft.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver KC-10 weapon system capabilities. 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 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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| B. Program Change Summary (\$ in Millions) | <u>FY 2019</u> | <u>FY 2020</u> | <u>FY 2021 Base</u> | <u>FY 2021 OCO</u> | <u>FY 2021 Total</u> |
|---|----------------|----------------|---------------------|--------------------|----------------------|
| Previous President's Budget | 6.569 | 0.020 | 0.000 | 0.000 | 0.000 |
| Current President's Budget | 5.084 | 0.020 | 0.000 | 0.000 | 0.000 |
| Total Adjustments | -1.485 | 0.000 | 0.000 | 0.000 | 0.000 |
| • Congressional General Reductions | 0.000 | 0.000 | | | |
| • Congressional Directed Reductions | 0.000 | 0.000 | | | |
| • Congressional Rescissions | 0.000 | 0.000 | | | |
| • Congressional Adds | 0.000 | 0.000 | | | |
| • Congressional Directed Transfers | 0.000 | 0.000 | | | |
| • Reprogrammings | -1.271 | 0.000 | | | |
| • SBIR/STTR Transfer | -0.214 | 0.000 | | | |
| • Other Adjustments | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

Change Summary Explanation

FY 2019 Funding decreased by \$1.271M for below threshold reprogramming action.

| C. Accomplishments/Planned Programs (\$ in Millions) | <u>FY 2019</u> | <u>FY 2020</u> | <u>FY 2021</u> |
|--|----------------|----------------|----------------|
| Title: KC-10 Mode 5 IFF | 5.084 | 0.020 | 0.000 |
| Description: FAA mandated upgrade to the IFF system to increase anti-spoofing and exploitation capabilities and lower the possibility of aircraft/aircrew loss due to misidentification of friendly aircraft. | | | |
| FY 2020 Plans: Continuation of engineering design and analysis effort (EMD). | | | |
| FY 2021 Plans: N/A | | | |
| FY 2020 to FY 2021 Increase/Decrease Statement: Effort complete in FY20, no FY21 funding required. | | | |
| Accomplishments/Planned Programs Subtotals | | | |
| | 5.084 | 0.020 | 0.000 |

| D. Other Program Funding Summary (\$ in Millions) | | | | | | | | | | | |
|--|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|-------------------|
| <u>Line Item</u> | <u>FY 2019</u> | <u>FY 2020</u> | <u>FY 2021</u> | <u>FY 2021</u> | <u>FY 2021</u> | <u>FY 2022</u> | <u>FY 2023</u> | <u>FY 2024</u> | <u>FY 2025</u> | <u>Cost To</u> | <u>Total Cost</u> |
| | | | <u>Base</u> | <u>OCO</u> | <u>Total</u> | | | | | <u>Complete</u> | |
| • APAF 05 C01000: KC-10A (ATCA) | 11.004 | 0.000 | 0.000 | - | 0.000 | 0.000 | 0.000 | - | - | 0.000 | 11.004 |

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|--|--|

D. 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> |
|------------------|----------------|----------------|-------------------------------|------------------------------|--------------------------------|----------------|----------------|----------------|----------------|-----------------------------------|-------------------|
|------------------|----------------|----------------|-------------------------------|------------------------------|--------------------------------|----------------|----------------|----------------|----------------|-----------------------------------|-------------------|

Remarks

E. Acquisition Strategy

The acquisition strategy will be a sole source RDT&E effort followed by procurement of kits and modification of KC-10 aircraft.

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

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| Appropriation/Budget Activity 3600 / 7 | R-1 Program Element (Number/Name) PE 0401219F / KC-10s | Project (Number/Name) 675195 / Aircraft Modernization Program (AMP) |
|--|--|---|

| 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-10 Mode 5: EMD | SS/CPFF | Rockwell Collins : Cedar Rapids, IA | - | 4.805 | Oct 2018 | - | | - | | - | | - | 0.000 | 4.805 | - |
| Subtotal | | | - | 4.805 | | - | | - | | - | | - | 0.000 | 4.805 | N/A |

Remarks
11 Nov 17: EMD Contract awarded to Rockwell Collins Inc.

| 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-10 Mode 5: LCMP Document Support | MIPR | VC-25, GSA Contract - BAH : TBD | - | 0.053 | Oct 2018 | - | | - | | - | | - | 0.000 | 0.053 | - |
| Subtotal | | | - | 0.053 | | - | | - | | - | | - | 0.000 | 0.053 | N/A |

Remarks
Funds ground, AIMS and flight testing, test range support, post test reports.

| 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-10 Mode 5: Mgmt Support | C/FFP | EPASS : Dayton, OH | - | 0.143 | Apr 2019 | - | | - | | - | | - | 0.000 | 0.143 | - |
| KC-10 Mode 5: Govt Travel | Reqn | Not specified. : TBD | - | 0.083 | Oct 2018 | 0.020 | Oct 2019 | - | | - | | - | 0.000 | 0.103 | - |
| Subtotal | | | - | 0.226 | | 0.020 | | - | | - | | - | 0.000 | 0.246 | N/A |

Remarks
Funding for A&AS support contractors.

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|--|--------------------|----------------|----------------|--|--------------------|----------------------|-------------------------|---|---------------------------------|--|--|
| Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Air Force | | | | | | | | Date: February 2020 | | | |
| Appropriation/Budget Activity 3600 / 7 | | | | R-1 Program Element (Number/Name) PE 0401219F / KC-10s | | | | Project (Number/Name) 675195 / Aircraft Modernization Program (AMP) | | | |
| | 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 | - | 5.084 | 0.020 | - | - | - | 0.000 | 5.104 | N/A | | |

Remarks

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| | | |
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| Exhibit R-4, RDT&E Schedule Profile: PB 2021 Air Force | | Date: February 2020 |
| Appropriation/Budget Activity 3600 / 7 | R-1 Program Element (Number/Name) PE 0401219F / KC-10s | Project (Number/Name) 675195 / Aircraft Modernization Program (AMP) |

| 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-10 Mode 5 | |
| KC-10 Mode 5: EMD | |

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| Exhibit R-4A, RDT&E Schedule Details: PB 2021 Air Force | | Date: February 2020 |
| Appropriation/Budget Activity 3600 / 7 | R-1 Program Element (Number/Name) PE 0401219F / KC-10s | Project (Number/Name) 675195 / Aircraft Modernization Program (AMP) |

Schedule Details

| Events by Sub Project | Start | | End | |
|-----------------------|---------|------|---------|------|
| | Quarter | Year | Quarter | Year |
| KC-10 Mode 5 | | | | |
| KC-10 Mode 5: EMD | 1 | 2019 | 1 | 2020 |