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

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| <b>Appropriation/Budget Activity</b><br>3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i> | <b>R-1 Program Element (Number/Name)</b><br>PE 0804743F / <i>Other Flight Training</i> |
|--|--|

| 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                                     | -           | 1.948   | 2.057   | 1.332        | 0.000       | 1.332         | 2.134   | 2.173   | 2.211   | 2.253   | Continuing       | Continuing |
| 675304: <i>Aviation Resource Management System (ARMS)</i> | -           | 1.948   | 2.057   | 1.332        | 0.000       | 1.332         | 2.134   | 2.173   | 2.211   | 2.253   | Continuing       | Continuing |
| Quantity of RDT&E Articles                                | -           | -       | -       | -            | -           | -             | -       | -       | -       | -       |                  |            |

**A. Mission Description and Budget Item Justification**

The Aviation Resource Management System (ARMS) is the authoritative data source for all aircrew and parachutist management (including flight and jump pay) covering 65,000 Aircrew/Parachutists and used by 2,800 1C0X2 Career Field members with 2.2M transactions per week. The ARMS is a web-based on-line management information system designed to support the base level Director of Operations (DO), aircrew supervisors, and managers. ARMS provides management policies and ensures the status of the Air Force flying programs are available to flying/jump supervisors to make resource allocation decisions. ARMS ensures accurate tracking of flying and ground training programs for each weapon system at each base. ARMS provides accurate and timely aircrew/parachutist information which assists in monitoring, tracking, and scheduling military training required to meet Air Force mission requirements. Additionally, the ARMS manages flying hours for aircrew parachutists world-wide to include USAF, Air Force Reserve Command (AFRC) and the Air National Guard (ANG).

The current ARMS functionality resides at a Defense Information System Agency (DISA) DECC and consists of "5" logical modules to include: Flight and Flying Hours, Individual Training, Jumper Aircrew, Resource Tracking, Reports, and System. The sustainment of these capabilities and the introduction of new capabilities follows an agile development process, but the effectiveness of that process is severely limited by the existing production environment.

A portion of the ARMS Jumper Aircrew module capabilities are being migrated to a mandated government-approved cloud environment. The cloud environment provides the Continuous Integration and Continuous Deployment (CI/CD) pipeline required to constantly deliver software in an agile framework, following the required DevSecOps methodology. The migration to the cloud environment and the DevSecOps methodology will transform ARMS into a scalable and flexible system capable of meeting all information requirements of the Aviation Resource Management community.

Once the initial cloud ARMS Jumper Aircrew capability is established, all remaining legacy program capabilities and new program requirements will be incorporated into the ARMS product backlog and prioritized for migration/stand-up in the cloud program instance. The ARMS DISA legacy program will sunset, once all capabilities are successfully migrated to the cloud environment.

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

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

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| <b>Appropriation/Budget Activity</b><br>3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i> | <b>R-1 Program Element (Number/Name)</b><br>PE 0804743F / <i>Other Flight Training</i> |
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Funds will be used to perform studies and innovative integration efforts for common technology capabilities such as cloud migration, technology development and mobile application.

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.

| <b>B. Program Change Summary (\$ in Millions)</b> | <b>FY 2019</b> | <b>FY 2020</b> | <b>FY 2021 Base</b> | <b>FY 2021 OCO</b> | <b>FY 2021 Total</b> |
|---|----------------|----------------|---------------------|--------------------|----------------------|
| Previous President's Budget                       | 2.022          | 2.057          | 2.093               | 0.000              | 2.093                |
| Current President's Budget                        | 1.948          | 2.057          | 1.332               | 0.000              | 1.332                |
| Total Adjustments                                 | -0.074         | 0.000          | -0.761              | 0.000              | -0.761               |
| • 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                              | -0.074         | 0.000          |                     |                    |                      |
| • Other Adjustments                               | 0.000          | 0.000          | -0.761              | 0.000              | -0.761               |

| <b>C. Accomplishments/Planned Programs (\$ in Millions)</b>   | <b>FY 2019</b> | <b>FY 2020</b> | <b>FY 2021</b> |
|---|----------------|----------------|----------------|
| <b>Title:</b> Aviation Resource Management System (ARMS)  | 1.948          | 2.057          | 1.332          |
| <b>Description:</b> Hardware/software development to update ARMS, adding functionality and system interfaces. |                |                |                |
| <b>FY 2020 Plans:</b>   |                |                |                |
| - Field Flight and Flying Hours modules releases  |                |                |                |
| - Field Training Management module releases   |                |                |                |
| - Establish Cloud One Jump operations via Continuous Integration & Continuous Deployment pipeline             |                |                |                |
| - Obtain Risk Management Framework (RMF) continuous monitoring Authority to Operate (ATO)                     |                |                |                |
| - Field sustainment legacy ARMS releases - patches, vulnerability mitigation, and configuration updates       |                |                |                |
| <b>FY 2021 Plans:</b>   |                |                |                |
| - Will continue migrating legacy ARMS capabilities from DISA platform to Cloud One platform                   |                |                |                |
| - Will deliver patches as needed to correct system deficiencies or apply required upgrades                    |                |                |                |
| - Will continue to make updates to system design, configuration, test, and training                           |                |                |                |

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| <b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2021 Air Force   |  | <b>Date:</b> February 2020   |                |                |
| <b>Appropriation/Budget Activity</b><br>3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>   |  | <b>R-1 Program Element (Number/Name)</b><br>PE 0804743F / <i>Other Flight Training</i> |                |                |
| <b>C. Accomplishments/Planned Programs (\$ in Millions)</b>  |  | <b>FY 2019</b>   | <b>FY 2020</b> | <b>FY 2021</b> |
| - Will continue to satisfy RMF controls needed for continuous ATO  |  |  |                |                |
| <b>FY 2020 to FY 2021 Increase/Decrease Statement:</b><br>Funding decreased due to reduced system updates and requirements.  |  |  |                |                |
| <b>Accomplishments/Planned Programs Subtotals</b>  |  | 1.948  | 2.057          | 1.332          |
| <b>D. Other Program Funding Summary (\$ in Millions)</b><br>N/A  |  |  |                |                |
| <b>Remarks</b>   |  |  |                |                |
| <b>E. Acquisition Strategy</b><br>The ARMS utilizes a hybrid of the Agile and Waterfall development methodologies to incrementally develop and field enhancements to the existing system. The ARMS PMO utilizes military programmers for code development/sustainment and government civilians providing program management, engineering, and information technology support. The ARMS PMO receives development/sustainment support from the 402nd Software Engineering Group (SWEG) at Robins AFB via a Memorandum of Agreement (MOA). Additionally, the ARMS PMO has partnered with the USAF Business Enterprise Systems (BES) Directorate's Business Enterprise Systems Programming INovation (BESPIN) office to acquire contractor resources. BESPIN has acquired current contractor support via Other Transaction Authority (OTA). Follow-on acquisition support will either be accomplished via OTA or Firm-Fixed Price (FFP) contracts awarded under Section 8a as small business set aside.<br><br>The updated ARMS Flight and Flying Hours modules and the Training Management module will be fielded to legacy ARMS in FY20, along with the initial ARMS cloud capability. Once the Jump module capability is established in Cloud One, migration efforts will begin to transition all legacy ARMS capabilities to the Cloud One environment. Changes to the legacy baseline will be limited to patches, vulnerability mitigation, and required capability implementations during the migration. The legacy ARMS will be linked to the Cloud One instance throughout the migration effort, ensuring users a seamless single sign-on application with underlying capabilities existing in both legacy DISA and Cloud One. |  |  |                |                |

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

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| <b>Appropriation/Budget Activity</b><br>3600 / 7 | <b>R-1 Program Element (Number/Name)</b><br>PE 0804743F / Other Flight Training | <b>Project (Number/Name)</b><br>675304 / Aviation Resource Management System (ARMS) |
|--|---|---|

| <b>Product Development (\$ in Millions)</b>    |                                   |   |                    | <b>FY 2019</b> |                   | <b>FY 2020</b> |                   | <b>FY 2021 Base</b> |                   | <b>FY 2021 OCO</b> |                   | <b>FY 2021 Total</b> |                         |                   |                                 |
|--|-----------------------------------|---|--------------------|----------------|-------------------|----------------|-------------------|---------------------|-------------------|--------------------|-------------------|----------------------|-------------------------|-------------------|---------------------------------|
| <b>Cost Category Item</b>                      | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b>       | <b>Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>          | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| ARMS Increment 1, Build 1 and Build 2 contract | SS/FFP                            | 581ST SMXS<br>ROBINS AFB :<br>Warner Robins, GA | -                  | -              |                   | -              |                   | -                   |                   | -                  |                   | -                    | Continuing              | Continuing        | 3.400                           |
| ARMS Increment 2 Development                   | SS/FFP                            | 581ST SMXS<br>ROBINS AFB :<br>Warner Robins, GA | -                  | 0.810          | Mar 2020          | 0.810          | Mar 2020          | 0.050               | Mar 2021          | -                  |                   | 0.050                | Continuing              | Continuing        | 10.000                          |
| <b>Subtotal</b>                                |                                   |   | -                  | 0.810          |                   | 0.810          |                   | 0.050               |                   | -                  |                   | 0.050                | Continuing              | Continuing        | N/A                             |

**Remarks**  
ARMS INCREMENT I INCLUDES BUILDS I AND II. ARMS BUILD I AND II ARE NOW LISTED SEPARATELY.

| <b>Support (\$ in Millions)</b>                    |                                   |  |                    | <b>FY 2019</b> |                   | <b>FY 2020</b> |                   | <b>FY 2021 Base</b> |                   | <b>FY 2021 OCO</b> |                   | <b>FY 2021 Total</b> |                         |                   |                                 |
|--|-----------------------------------|--|--------------------|----------------|-------------------|----------------|-------------------|---------------------|-------------------|--------------------|-------------------|----------------------|-------------------------|-------------------|---------------------------------|
| <b>Cost Category Item</b>                          | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b>                | <b>Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>          | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| ARMS Architecture Contract Support                 | C/FFP                             | Copper River Information Technology, LLC : Anchorage, AK | -                  | 0.065          | Sep 2019          | 0.067          | Sep 2020          | 0.067               | Sep 2021          | -                  |                   | 0.067                | Continuing              | Continuing        | -                               |
| ARMS C&A SUPPORT III                               | C/FFP                             | OASIS : Lexington, MA                                    | -                  | 0.154          | Apr 2019          | 0.159          | Apr 2020          | 0.159               | Apr 2021          | -                  |                   | 0.159                | Continuing              | Continuing        | -                               |
| ARMS CONFIGURATION MANAGER                         | C/FFP                             | OASIS : Lexington, MA                                    | -                  | 0.126          | Apr 2019          | 0.130          | Apr 2020          | 0.130               | Apr 2021          | -                  |                   | 0.130                | Continuing              | Continuing        | -                               |
| ARMS SYSTEM ADMIN III                              | C/FFP                             | OASIS : Lexington, MA                                    | -                  | 0.156          | Apr 2019          | 0.161          | Apr 2020          | 0.161               | Apr 2021          | -                  |                   | 0.161                | Continuing              | Continuing        | -                               |
| ARMS CIE SUPPORT                                   | C/FFP                             | TBD : TBD  | -                  | 0.146          | Mar 2020          | 0.227          | Apr 2020          | 0.227               | Apr 2021          | -                  |                   | 0.227                | Continuing              | Continuing        | -                               |
| ARMS INTEGRATION SUPPORT                           | C/FFP                             | Not specified. : TBD                                     | -                  | 0.158          | Apr 2020          | 0.163          | Apr 2020          | 0.163               | Apr 2021          | -                  |                   | 0.163                | Continuing              | Continuing        | -                               |
| ARMS PLURALSIGHT                                   | C/TBD                             | TBD : TBD  | -                  | -              |                   | -              |                   | -                   |                   | -                  |                   | -                    | Continuing              | Continuing        | -                               |
| ARMS Financial Improvement Audit Readiness Support | SS/FFP                            | TM Capture : Maxwell AFB-Gunter Annex, AL                | -                  | 0.065          | Feb 2020          | 0.065          | Feb 2020          | 0.065               | Feb 2021          | -                  |                   | 0.065                | Continuing              | Continuing        | 0.325                           |

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

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| <b>Appropriation/Budget Activity</b><br>3600 / 7 | <b>R-1 Program Element (Number/Name)</b><br>PE 0804743F / Other Flight Training | <b>Project (Number/Name)</b><br>675304 / Aviation Resource Management System (ARMS) |
|--|---|---|

| <b>Support (\$ in Millions)</b> |                        |                                |             | 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          |                  |            |                          |
| <b>Subtotal</b>                 |                        |                                | -           | 0.870   |            | 0.972   |            | 0.972        |            | -           |            | 0.972         | Continuing       | Continuing | N/A                      |

| <b>Test and Evaluation (\$ in Millions)</b> |                        |                                    |             | 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          |                  |            |                          |
| ARMS Test Support                           | C/FFP                  | GSA : Maxwell AFB-Gunter Annex, AL | -           | 0.054   | Apr 2020   | 0.056   | Apr 2020   | 0.056        | Apr 2021   | -           |            | 0.056         | Continuing       | Continuing | 0.260                    |
| ARMS TEST MANAGER                           | C/CPAF                 | OASIS : Lexington, MA              | -           | 0.154   | Mar 2019   | 0.159   | Apr 2020   | 0.159        | Apr 2021   | -           |            | 0.159         | Continuing       | Continuing | -                        |
| <b>Subtotal</b>                             |                        |                                    | -           | 0.208   |            | 0.215   |            | 0.215        |            | -           |            | 0.215         | Continuing       | Continuing | N/A                      |

| <b>Management Services (\$ in Millions)</b> |                        |                                |             | 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          |                  |            |                          |
| ARMS PMA Other Govt Costs                   | C/TBD                  | TBD : TBD                      | -           | 0.060   | Apr 2019   | 0.060   | Apr 2020   | 0.095        | Apr 2021   | -           |            | 0.095         | Continuing       | Continuing | -                        |
| <b>Subtotal</b>                             |                        |                                | -           | 0.060   |            | 0.060   |            | 0.095        |            | -           |            | 0.095         | 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 |
|----------------------------|--|--|-------------|---------|---------|--------------|-------------|---------------|------------------|------------|--------------------------|
| <b>Project Cost Totals</b> |  |  | -           | 1.948   | 2.057   | 1.332        | -           | 1.332         | Continuing       | Continuing | N/A                      |

**Remarks**

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| <b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2021 Air Force |  | <b>Date:</b> February 2020   |
| <b>Appropriation/Budget Activity</b><br>3600 / 7                  | <b>R-1 Program Element (Number/Name)</b><br>PE 0804743F / <i>Other Flight Training</i> | <b>Project (Number/Name)</b><br>675304 / <i>Aviation Resource Management System (ARMS)</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 |
| <b>ARMS EXHIBIT R-4</b>                             |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Advisory and Assistance Services Contract           |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| ARMS Financial Improvement Audit Readiness Contract |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Increment I Build 1 Contract                        |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Development - Increment I Build 1 Complete          |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Development - Increment I Build 2 Start             |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Architecture Support                                |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Testing - Increment I Build 2                       |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| ARMS 7.0 Increment II Build 1 Contract              |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Development - Increment II Build 1 Start            |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Field - Increment I Build 2                         |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |

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| <b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2021 Air Force |  | <b>Date:</b> February 2020   |
| <b>Appropriation/Budget Activity</b><br>3600 / 7                   | <b>R-1 Program Element (Number/Name)</b><br>PE 0804743F / <i>Other Flight Training</i> | <b>Project (Number/Name)</b><br>675304 / <i>Aviation Resource Management System (ARMS)</i> |

Schedule Details

| Events by Sub Project                               | Start   |      | End     |      |
|---|---------|------|---------|------|
|   | Quarter | Year | Quarter | Year |
| <b>ARMS EXHIBIT R-4</b>                             |         |      |         |      |
| Advisory and Assistance Services Contract           | 1       | 2019 | 4       | 2025 |
| ARMS Financial Improvement Audit Readiness Contract | 1       | 2019 | 4       | 2025 |
| Increment I Build 1 Contract                        | 1       | 2019 | 4       | 2024 |
| Development - Increment I Build 1 Complete          | 1       | 2019 | 4       | 2025 |
| Development - Increment I Build 2 Start             | 2       | 2019 | 3       | 2024 |
| Architecture Support                                | 1       | 2019 | 4       | 2024 |
| Testing - Increment I Build 2                       | 1       | 2020 | 4       | 2020 |
| ARMS 7.0 Increment II Build 1 Contract              | 1       | 2020 | 4       | 2020 |
| Development - Increment II Build 1 Start            | 1       | 2020 | 1       | 2020 |
| Field - Increment I Build 2                         | 4       | 2020 | 1       | 2021 |