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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2022 Air Force **Date:** May 2021

| <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 1203620F / <i>National Space Defense Center</i> |               |         |         |         |         |                  |            |
|--|-------------|---------|---------|--------------|--|---------------|---------|---------|---------|---------|------------------|------------|
| COST (\$ in Millions)  | Prior Years | FY 2020 | FY 2021 | FY 2022 Base | FY 2022 OCO  | FY 2022 Total | FY 2023 | FY 2024 | FY 2025 | FY 2026 | Cost To Complete | Total Cost |
| Total Program Element  | -           | 2.649   | 0.000   | 0.000        | 0.000  | 0.000         | -       | -       | -       | -       | -                | -          |
| 670004: <i>OTHER STRATCOM ACTIVITIES</i>   | -           | 2.649   | 0.000   | 0.000        | 0.000  | 0.000         | -       | -       | -       | -       | -                | -          |

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

The Department of the Air Force has determined this National Space Defense Center (NSDC) budget request will not transfer to the Research, Development, Test & Evaluation, Space Force appropriation as previously stated in the FY21 budget request.

This program will provide systems engineering and architecture support for the NSDC's operational infrastructure integrating mission partner networks, data and other hardware and software solutions into NSDC's technical baseline. Additionally, this program will provide for agile requirements development, operational and developmental test activities, and technical support between program offices and the operations center, supporting software Development in Operations (DevOps). The NSDC allows the national security space community to effectively respond to potential future space threat events and will have the capability to develop, test, and integrate new space system tactics, techniques and procedures (TTPs) in support of both DoD and Intelligence Community operations.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver NSDC capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 1206392F and 1206398F.

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 2020</b> | <b>FY 2021</b> | <b>FY 2022 Base</b> | <b>FY 2022 OCO</b> | <b>FY 2022 Total</b> |
|---|----------------|----------------|---------------------|--------------------|----------------------|
| Previous President's Budget                       | 2.653          | 2.687          | 2.751               | 0.000              | 2.751                |
| Current President's Budget                        | 2.649          | 0.000          | 0.000               | 0.000              | 0.000                |
| Total Adjustments                                 | -0.004         | -2.687         | -2.751              | 0.000              | -2.751               |
| • 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                              | -0.004         | 0.000          |                     |                    |                      |
| • Other Adjustments                               | 0.000          | -2.687         | -2.751              | 0.000              | -2.751               |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Air Force |                    |                |                |                     |  |                      |                |                |   | <b>Date:</b> May 2021 |                         |                   |
| <b>Appropriation/Budget Activity</b><br>3600 / 7                        |                    |                |                |                     | <b>R-1 Program Element (Number/Name)</b><br>PE 1203620F / <i>National Space Defense Center</i> |                      |                |                | <b>Project (Number/Name)</b><br>670004 / <i>OTHER STRATCOM ACTIVITIES</i> |                       |                         |                   |
| <b>COST (\$ in Millions)</b>  | <b>Prior Years</b> | <b>FY 2020</b> | <b>FY 2021</b> | <b>FY 2022 Base</b> | <b>FY 2022 OCO</b>   | <b>FY 2022 Total</b> | <b>FY 2023</b> | <b>FY 2024</b> | <b>FY 2025</b>  | <b>FY 2026</b>        | <b>Cost To Complete</b> | <b>Total Cost</b> |
| 670004: <i>OTHER STRATCOM ACTIVITIES</i>                                | -                  | 2.649          | 0.000          | 0.000               | 0.000  | 0.000                | -              | -              | -   | -                     | -                       | -                 |
| Quantity of RDT&E Articles  | -                  | -              | -              | -                   | -  | -                    | -              | -              | -   | -                     |                         |                   |

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

This program develops and integrates Battle Management and Command and Control (BMC2) applications for the Joint Task Force - Space Defense (JTF-SD) (component for the National Space Defense Center (NSDC)). This includes integrating hardware and software prototypes to support various networks developed by mission partners and integrating applications developed by the Space C2 program to ensure relevant and accurate situational awareness to mission partners. The JTF-SD (and NSDC) allows the national security space community to effectively respond to space threat events and will have the capability to develop, test, and integrate new space system tactics, techniques and procedures (TTPs) in support of both DoD and Intelligence Community operations.

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

|   | <b>FY 2020</b> | <b>FY 2021</b> | <b>FY 2022</b> |
|---|----------------|----------------|----------------|
| <b>Title:</b> Application Development   | 2.649          | 0.000          | 0.000          |
| <b>Description:</b> Develop and field Space Battle Management Command and Control capabilities.   |                |                |                |
| <b>FY 2021 Plans:</b><br>FY2021 Plans: Continue to analyze and assess mission partner and Intelligence Community networks and achieve authorization to connect to JTF-SD infrastructure. Partner with test agency to support developmental and operational test activities and shadow operations for agile DevOps environment. Rapidly respond to be able to implement system resiliency and situational awareness capability necessary to operate in the contested space domain. Activities include program office support, studies, technical analysis, experimentation, prototyping, and technical feedback to developers.   |                |                |                |
| <b>FY 2022 Plans:</b><br>FY2022 Plans: Continue to analyze, assess, and provide operations center support for mission partner and Intelligence Community networks and achieve authorization to connect to JTF-SD infrastructure. Partner with test agency to perform developmental and operational test activities and shadow operations for agile DevOps environment. Increase integration efforts for Space C2 applications. Rapidly respond to be able to implement system resiliency and situational awareness capability necessary to operate in the contested space domain. Activities may include, but are not limited to program office support, studies, technical analysis, experimentation, and prototyping. |                |                |                |
| <b>FY 2021 to FY 2022 Increase/Decrease Statement:</b><br>FY 2022 increased compared to FY 2021. Justification for this increase is described in the plans above.   |                |                |                |
| <b>Accomplishments/Planned Programs Subtotals</b>   | 2.649          | 0.000          | 0.000          |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Air Force |  | <b>Date:</b> May 2021   |
| <b>Appropriation/Budget Activity</b><br>3600 / 7                        | <b>R-1 Program Element (Number/Name)</b><br>PE 1203620F / <i>National Space Defense Center</i> | <b>Project (Number/Name)</b><br>670004 / <i>OTHER STRATCOM ACTIVITIES</i> |

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**D. Acquisition Strategy**

NSDC provides funds to other AF/DoD organizations to execute on their contracts in support of NSDC requirements. Additionally, NSDC provides contract support to develop and document the technical baseline through systems engineering and technical assistance support.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Air Force** **Date:** May 2021

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| <b>Appropriation/Budget Activity</b><br>3600 / 7 | <b>R-1 Program Element (Number/Name)</b><br>PE 1203620F / National Space Defense Center | <b>Project (Number/Name)</b><br>670004 / OTHER STRATCOM ACTIVITIES |
|--|---|--|

| <b>Product Development (\$ in Millions)</b>  |                                   |   |                    | <b>FY 2020</b> |                   | <b>FY 2021</b> |                   | <b>FY 2022 Base</b> |                   | <b>FY 2022 OCO</b> |                   | <b>FY 2022 Total</b> | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</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>          |                         |                   |                                 |
| SHADOW OPERATIONS CENTER DEVELOPMENT         | Various                           | Various : Colorado Springs, CO            | -                  | 0.000          |                   | -              |                   | -                   |                   | -                  |                   | -                    | -                       | -                 | -                               |
| BMC2 APPLICATION DEVELOPMENT AND INTEGRATION | Various                           | Various: : Colorado Springs, CO           | -                  | 1.000          | Jan 2020          | -              |                   | -                   |                   | -                  |                   | -                    | -                       | -                 | -                               |
| SYSTEM ENGINEERING                           | Various                           | Various: : Colorado Springs, CO           | -                  | 0.000          |                   | -              |                   | -                   |                   | -                  |                   | -                    | -                       | -                 | -                               |
| <b>Subtotal</b>                              |                                   |   | -                  | 1.000          |                   | -              |                   | -                   |                   | -                  |                   | -                    | -                       | -                 | N/A                             |

| <b>Management Services (\$ in Millions)</b> |                                   |   |                    | <b>FY 2020</b> |                   | <b>FY 2021</b> |                   | <b>FY 2022 Base</b> |                   | <b>FY 2022 OCO</b> |                   | <b>FY 2022 Total</b> | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</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>          |                         |                   |                                 |
| A&AS  | Various                           | Various: : Colorado Springs, CO           | -                  | 0.500          | Jan 2020          | -              |                   | -                   |                   | -                  |                   | -                    | -                       | -                 | -                               |
| FFRDC                                       | Various                           | Various: : Colorado Springs, CO           | -                  | 1.149          | Dec 2019          | -              |                   | -                   |                   | -                  |                   | -                    | -                       | -                 | -                               |
| <b>Subtotal</b>                             |                                   |   | -                  | 1.649          |                   | -              |                   | -                   |                   | -                  |                   | -                    | -                       | -                 | N/A                             |

| <b>Project Cost Totals</b> | <b>Prior Years</b> | <b>FY 2020</b> | <b>FY 2021</b> | <b>FY 2022 Base</b> | <b>FY 2022 OCO</b> | <b>FY 2022 Total</b> | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
|----------------------------|--------------------|----------------|----------------|---------------------|--------------------|----------------------|-------------------------|-------------------|---------------------------------|
|                            | -                  | 2.649          | 0.000          | -                   | -                  | -                    | -                       | -                 | N/A                             |

**Remarks**

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| <b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2022 Air Force |  | <b>Date:</b> May 2021   |
| <b>Appropriation/Budget Activity</b><br>3600 / 7                  | <b>R-1 Program Element (Number/Name)</b><br>PE 1203620F / <i>National Space Defense Center</i> | <b>Project (Number/Name)</b><br>670004 / <i>OTHER STRATCOM ACTIVITIES</i> |

| FY 2020 |   |   |   | FY 2021 |   |   |   | FY 2022 |   |   |   | FY 2023 |   |   |   | FY 2024 |   |   |   | FY 2025 |   |   |   | FY 2026 |   |   |   |
|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|
| 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>NSDC INFRASTRUCTURE</b>                          |            |
| SUSTAINMENT/SUPPORT                                 | [REDACTED] |
| <b>BMC2 APPLICATION DEVELOPMENT AND INTEGRATION</b> |            |
| APPLICATION DEVELOPMENT AND INTEGRATION             | [REDACTED] |
| <b>SHADOW OPERATIONS CENTER</b>                     |            |
| SHADOW OPERATIONS APPS                              | [REDACTED] |

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| <b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2022 Air Force |  | <b>Date:</b> May 2021   |
| <b>Appropriation/Budget Activity</b><br>3600 / 7                   | <b>R-1 Program Element (Number/Name)</b><br>PE 1203620F / <i>National Space Defense Center</i> | <b>Project (Number/Name)</b><br>670004 / <i>OTHER STRATCOM ACTIVITIES</i> |

Schedule Details

| Events by Sub Project                                      | Start   |      | End     |      |
|--|---------|------|---------|------|
|  | Quarter | Year | Quarter | Year |
| <b><i>NSDC INFRASTRUCTURE</i></b>                          |         |      |         |      |
| SUSTAINMENT/SUPPORT  | 1       | 2021 | 4       | 2023 |
| <b><i>BMC2 APPLICATION DEVELOPMENT AND INTEGRATION</i></b> |         |      |         |      |
| APPLICATION DEVELOPMENT AND INTEGRATION                    | 1       | 2021 | 4       | 2023 |
| <b><i>SHADOW OPERATIONS CENTER</i></b>                     |         |      |         |      |
| SHADOW OPERATIONS APPS                                     | 1       | 2021 | 2       | 2021 |