

UNCLASSIFIED

| Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Air Force | | | | | | | | | | Date: February 2018 | | |
|--|-------------|---------|---------|--------------|--|---------------|---------|---------|---------|---------------------|------------------|------------|
| Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development | | | | | R-1 Program Element (Number/Name) PE 1203620F I National Space Defense Center | | | | | | | |
| COST (\$ in Millions) | Prior Years | FY 2017 | FY 2018 | FY 2019 Base | FY 2019 OCO | FY 2019 Total | FY 2020 | FY 2021 | FY 2022 | FY 2023 | Cost To Complete | Total Cost |
| Total Program Element | - | 0.000 | 18.052 | 42.209 | 0.000 | 42.209 | 2.653 | 2.692 | 2.755 | 2.805 | Continuing | Continuing |
| 670004: OTHER STRATCOM ACTIVITIES | - | 0.000 | 0.000 | 42.209 | 0.000 | 42.209 | 2.653 | 2.692 | 2.755 | 2.805 | Continuing | Continuing |
| 67A035: Enterprise Space BMC2 | - | 0.000 | 18.052 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | Continuing | Continuing |

Note

Prior year funding for the National Space Defense Center was in PE 1203940F, Space Situational Awareness Operations, Project 670004, Other STRATCOM Activities

In FY2019, PE 1203620F, National Space Defense Center, Project 67A035, Enterprise Space BMC2 efforts were transferred to PE 1203620F, National Space Defense Center, Project 670004, Other STRATCOM activities to provide program transparency.

A. Mission Description and Budget Item Justification

This program element will develop Battle Management and Command and Control (BMC2) applications for the National Space Defense Center (NSDC) (formerly Joint Interagency Combined Space Operations Center (JICSpOC)). In addition, this element will develop hardware and software prototypes to support US Strategic Command Joint Emergent Operational Need (ST-0006) for an Accelerated BMC2 capability. 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.

The current and future space domain demands that space systems be responsive to new and changing threats, and can rapidly integrate new capabilities to make our warfighting force more resilient in a contested battlespace. This agility, survivability, and rapid reconstitution must extend through the entire space warfighting enterprise, to include how we learn about the threat; develop solutions; acquire, test, deploy, train, operate and integrate new systems into the greater system of systems; and ensure our space mission force is ready to defeat a thinking adversary in a complex, multi-domain battlespace. The enterprise will use all of its elements to accelerate decision-making, prototype potential solutions, rapidly integrate decision-making tools and sustain a war-winning capability by delivering multi-domain effects in, from, and through space and cyberspace enabling battle management and resilience options to "fight through."

This program is Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrades systems and transition them to operations.

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| Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Air Force | | | | Date: February 2018 | |
| Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development | | R-1 Program Element (Number/Name) PE 1203620F I National Space Defense Center | | | |
| B. Program Change Summary (\$ in Millions) | FY 2017 | FY 2018 | FY 2019 Base | FY 2019 OCO | FY 2019 Total |
| Previous President's Budget | 0.000 | 18.052 | 12.005 | 0.000 | 12.005 |
| Current President's Budget | 0.000 | 18.052 | 42.209 | 0.000 | 42.209 |
| Total Adjustments | 0.000 | 0.000 | 30.204 | 0.000 | 30.204 |
| • 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 | 30.204 | 0.000 | 30.204 |
| Change Summary Explanation | | | | | |
| FY2019: Increased by \$30.2M from funds transfer from PE 1203940F. | | | | | |

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| Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force | | | | | | | | | | Date: February 2018 | | |
| Appropriation/Budget Activity 3600 / 7 | | | | | R-1 Program Element (Number/Name) PE 1203620F / <i>National Space Defense Center</i> | | | | Project (Number/Name) 670004 / <i>OTHER STRATCOM ACTIVITIES</i> | | | |
| COST (\$ in Millions) | Prior Years | FY 2017 | FY 2018 | FY 2019 Base | FY 2019 OCO | FY 2019 Total | FY 2020 | FY 2021 | FY 2022 | FY 2023 | Cost To Complete | Total Cost |
| 670004: <i>OTHER STRATCOM ACTIVITIES</i> | - | 0.000 | 0.000 | 42.209 | 0.000 | 42.209 | 2.653 | 2.692 | 2.755 | 2.805 | Continuing | Continuing |
| Quantity of RDT&E Articles | - | - | - | - | - | - | - | - | - | - | | |
| A. Mission Description and Budget Item Justification <p>This program element will develop Battle Management and Command and Control (BMC2) applications for the National Space Defense Center (NSDC) (formerly Joint Interagency Combined Space Operations Center (JICSpOC)). In addition, this element will develop hardware and software prototypes to support US Strategic Command Joint Emergent Operational Need (ST-0006) for an Accelerated BMC2 capability. 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.</p> | | | | | | | | | | | | |
| B. Accomplishments/Planned Programs (\$ in Millions) | | | | | | | | | FY 2017 | FY 2018 | FY 2019 | |
| Title: Application Development Description: Develop and field Space Battle Management Command and Control capabilities. FY 2018 Plans: In FY2018, this effort is in project 67A035, Enterprise Space BMC2 FY 2019 Plans: Complete delivery of the second spiral of capabilities to NSDC operators. Rapidly respond to implement system resiliency and situational awareness necessary to operate in the contested space domain. These activities include studies, technical analysis, prototyping, etc. FY 2018 to FY 2019 Increase/Decrease Statement: FY2019 funds are realigned from Project 67A035, Enterprise Space BMC2 | | | | | | | | | - | 0.000 | 42.209 | |
| Accomplishments/Planned Programs Subtotals | | | | | | | | | - | 0.000 | 42.209 | |
| C. Other Program Funding Summary (\$ in Millions) N/A Remarks | | | | | | | | | | | | |

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| Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force | | Date: February 2018 |
| Appropriation/Budget Activity 3600 / 7 | R-1 Program Element (Number/Name) PE 1203620F / <i>National Space Defense Center</i> | Project (Number/Name) 670004 / <i>OTHER STRATCOM ACTIVITIES</i> |

D. Acquisition Strategy

The Accelerated Space BMC2 JEON (ST-0006) is led by AFRL and will utilize existing contracts e.g. Space Security and Defense Program (SSDP), and provide funds to other AF/DoD organizations to execute on their contracts. Additionally AFRL will initiate and utilize commercial consortiums to develop capabilities.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

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|--|-----------------------------------|---|--------------------|----------------|-------------------|--|-------------------|---------------------|-------------------|--------------------|-------------------|---|-------------------------|-------------------|---------------------------------|
| Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Air Force | | | | | | | | | | | | Date: February 2018 | | | |
| Appropriation/Budget Activity 3600 / 7 | | | | | | R-1 Program Element (Number/Name) PE 1203620F / <i>National Space Defense Center</i> | | | | | | Project (Number/Name) 670004 / <i>OTHER STRATCOM ACTIVITIES</i> | | | |
| Product Development (\$ in Millions) | | | | FY 2017 | | FY 2018 | | FY 2019 Base | | FY 2019 OCO | | FY 2019 Total | | | |
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Cost To Complete | Total Cost | Target Value of Contract |
| SHADOW OPERATIONS CENTER DEVELOPMENT | Various | Various : Colorado Springs, CO | - | - | | - | | 19.027 | | - | | 19.027 | Continuing | Continuing | - |
| BMC2 APPLICATION DEVELOPMENT | Various | Various: : Colorado Springs, CO | - | - | | - | | 15.000 | Oct 2018 | - | | 15.000 | Continuing | Continuing | - |
| SYSTEM ENGINEERING | Various | Various: : Colorado Springs, CO | - | - | | - | | 6.000 | Oct 2018 | - | | 6.000 | Continuing | Continuing | - |
| Subtotal | | | - | - | | - | | 40.027 | | - | | 40.027 | Continuing | Continuing | N/A |
| Management Services (\$ in Millions) | | | | FY 2017 | | FY 2018 | | FY 2019 Base | | FY 2019 OCO | | FY 2019 Total | | | |
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Cost To Complete | Total Cost | Target Value of Contract |
| A&AS | Various | Various: : Colorado Springs, CO | - | - | | - | | 0.500 | Oct 2018 | - | | 0.500 | Continuing | Continuing | - |
| FFRDC | Various | Various: : Colorado Springs, CO | - | - | | - | | 1.682 | Oct 2018 | - | | 1.682 | Continuing | Continuing | - |
| Subtotal | | | - | - | | - | | 2.182 | | - | | 2.182 | Continuing | Continuing | N/A |
| | | | Prior Years | FY 2017 | | FY 2018 | | FY 2019 Base | | FY 2019 OCO | | FY 2019 Total | Cost To Complete | Total Cost | Target Value of Contract |
| Project Cost Totals | | | - | - | | 0.000 | | 42.209 | | - | | 42.209 | Continuing | Continuing | N/A |
| Remarks | | | | | | | | | | | | | | | |

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| Exhibit R-4, RDT&E Schedule Profile: PB 2019 Air Force | | | Date: February 2018 | | |
| Appropriation/Budget Activity 3600 / 7 | | R-1 Program Element (Number/Name) PE 1203620F / <i>National Space Defense Center</i> | | | Project (Number/Name) 670004 / <i>OTHER STRATCOM ACTIVITIES</i> |

| | FY 2017 | | | | FY 2018 | | | | FY 2019 | | | | FY 2020 | | | | FY 2021 | | | | FY 2022 | | | | FY 2023 | | | |
|--|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|
| | 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 |
| NSDC INFRASTRUCTURE | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MULTI OPERATIONS CENTER NETWORK | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SUSTAINMENT/SUPPORT | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BMC2 APPLICATION DEVELOPMENT | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SPIRAL 2 APPLICATION DEVELOPMENT | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EAGLE EXERCISE | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SHADOW OPERATIONS CENTER | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SOFTWARE INNOVATION LAB ESTABLISHMENT | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SHADOW OPERATIONS CENTER DEV/ACCREDITATION | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SHADOW OPERATIONS CENTER IOC | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| Exhibit R-4A, RDT&E Schedule Details: PB 2019 Air Force | | | Date: February 2018 |
| Appropriation/Budget Activity 3600 / 7 | R-1 Program Element (Number/Name) PE 1203620F / <i>National Space Defense Center</i> | Project (Number/Name) 670004 / <i>OTHER STRATCOM ACTIVITIES</i> | |

Schedule Details

| Events by Sub Project | Start | | End | |
|--|---------|------|---------|------|
| | Quarter | Year | Quarter | Year |
| <i>NSDC INFRASTRUCTURE</i> | | | | |
| MULTI OPERATIONS CENTER NETWORK | 1 | 2018 | 2 | 2019 |
| SUSTAINMENT/SUPPORT | 2 | 2019 | 4 | 2023 |
| <i>BMC2 APPLICATION DEVELOPMENT</i> | | | | |
| SPIRAL 2 APPLICATION DEVELOPMENT | 4 | 2017 | 2 | 2019 |
| EAGLE EXERCISE | 3 | 2018 | 3 | 2019 |
| <i>SHADOW OPERATIONS CENTER</i> | | | | |
| SOFTWARE INNOVATION LAB ESTABLISHMENT | 1 | 2017 | 1 | 2019 |
| SHADOW OPERATIONS CENTER DEV/ACCREDITATION | 1 | 2017 | 1 | 2019 |
| SHADOW OPERATIONS CENTER IOC | 3 | 2019 | 3 | 2019 |

Note

FY2018 activities are funded in Project 67A035 in this PE.

Prior Year activities are funded in PE 1203940F, Project 670004.

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| Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force | | | | | | | | | | Date: February 2018 | | |
| Appropriation/Budget Activity 3600 / 7 | | | | | R-1 Program Element (Number/Name) PE 1203620F / <i>National Space Defense Center</i> | | | | Project (Number/Name) 67A035 / <i>Enterprise Space BMC2</i> | | | |
| COST (\$ in Millions) | Prior Years | FY 2017 | FY 2018 | FY 2019 Base | FY 2019 OCO | FY 2019 Total | FY 2020 | FY 2021 | FY 2022 | FY 2023 | Cost To Complete | Total Cost |
| 67A035: <i>Enterprise Space BMC2</i> | - | 0.000 | 18.052 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | Continuing | Continuing |
| Quantity of RDT&E Articles | - | - | - | - | - | - | - | - | - | - | | |

A. Mission Description and Budget Item Justification

This program element will develop Battle Management and Command and Control (BMC2) applications for the National Space Defense Center (NSDC) (formerly Joint Interagency Combined Space Operations Center (JICSpOC)). In addition, this element will develop hardware and software prototypes to support US Strategic Command Joint Emergent Operational Need (ST-0006) for an Accelerated BMC2 capability. 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.

| | | | |
|---|----------------|----------------|----------------|
| B. Accomplishments/Planned Programs (\$ in Millions) | FY 2017 | FY 2018 | FY 2019 |
| <p>Title: BMC2 Applications</p> <p>Description: Develop and field Space Battlement Management and Command and Control capabilities.</p> <p>FY 2018 Plans: Continue prototyping efforts to develop tools to fill capability gaps uncovered in experimentation.</p> <p>FY 2019 Plans: In FY19 the work in this Project was transferred to Project 670004, Other STRATCOM Activities</p> <p>FY 2018 to FY 2019 Increase/Decrease Statement: No FY19 work in this project.</p> | 0.000 | 18.052 | 0.000 |
| Accomplishments/Planned Programs Subtotals | 0.000 | 18.052 | 0.000 |

C. Other Program Funding Summary (\$ in Millions)
N/A

Remarks

D. Acquisition Strategy

The Accelerated Space BMC2 JEON (ST-0006) is led by AFRL and will utilize existing contracts e.g. Space Security and Defense Program (SSDP), and provide funds to other AF/DoD organizations to execute on their contracts. Additionally AFRL will initiate and utilize commercial consortiums to develop capabilities.

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| Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force | | Date: February 2018 |
| Appropriation/Budget Activity 3600 / 7 | R-1 Program Element (Number/Name) PE 1203620F / <i>National Space Defense Center</i> | Project (Number/Name) 67A035 / <i>Enterprise Space BMC2</i> |
| E. Performance Metrics Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission. | | |

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| Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Air Force | | | | | | | | | | | | Date: February 2018 | | | |
|---|------------------------|--------------------------------|-------------|---------|------------|--|------------|--------------|------------|---|------------|---------------------|------------------|------------|--------------------------|
| Appropriation/Budget Activity 3600 / 7 | | | | | | R-1 Program Element (Number/Name) PE 1203620F / National Space Defense Center | | | | Project (Number/Name) 67A035 / Enterprise Space BMC2 | | | | | |
| Product Development (\$ in Millions) | | | | FY 2017 | | FY 2018 | | FY 2019 Base | | FY 2019 OCO | | FY 2019 Total | | | |
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Cost To Complete | Total Cost | Target Value of Contract |
| SYSTEM ENGINEERING | Various | Various : Colorado Springs, CO | - | - | | 2.000 | Oct 2017 | - | | - | | - | Continuing | Continuing | - |
| BMC2 APPLICATION DEVELOPMENT | Various | Various : Colorado Springs, CO | - | - | | 14.000 | Oct 2017 | - | | - | | - | Continuing | Continuing | - |
| Subtotal | | | - | - | | 16.000 | | - | | - | | - | Continuing | Continuing | N/A |
| Management Services (\$ in Millions) | | | | FY 2017 | | FY 2018 | | FY 2019 Base | | FY 2019 OCO | | FY 2019 Total | | | |
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Cost To Complete | Total Cost | Target Value of Contract |
| A&AS | Various | Various : Colorado Springs, CO | - | - | | 0.500 | Oct 2017 | - | | - | | - | Continuing | Continuing | - |
| FFRDC | SS/FP | Various : Colorado Springs, CO | - | - | | 1.552 | Oct 2017 | - | | - | | - | Continuing | Continuing | - |
| Subtotal | | | - | - | | 2.052 | | - | | - | | - | Continuing | Continuing | N/A |
| | | | Prior Years | FY 2017 | | FY 2018 | | FY 2019 Base | | FY 2019 OCO | | FY 2019 Total | Cost To Complete | Total Cost | Target Value of Contract |
| Project Cost Totals | | | - | - | | 18.052 | | - | | - | | - | Continuing | Continuing | N/A |
| Remarks | | | | | | | | | | | | | | | |

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| Exhibit R-4, RDT&E Schedule Profile: PB 2019 Air Force | | | Date: February 2018 | | |
| Appropriation/Budget Activity 3600 / 7 | | R-1 Program Element (Number/Name) PE 1203620F / National Space Defense Center | | | Project (Number/Name) 67A035 / Enterprise Space BMC2 |

| | FY 2017 | | | | FY 2018 | | | | FY 2019 | | | | FY 2020 | | | | FY 2021 | | | | FY 2022 | | | | FY 2023 | | | |
|-------------------------|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|
| | 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 |
| NSDC | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| APPLICATION DEVELOPMENT | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| Exhibit R-4A, RDT&E Schedule Details: PB 2019 Air Force | | Date: February 2018 |
| Appropriation/Budget Activity 3600 / 7 | R-1 Program Element (Number/Name) PE 1203620F / <i>National Space Defense Center</i> | Project (Number/Name) 67A035 / <i>Enterprise Space BMC2</i> |

Schedule Details

| Events by Sub Project | Start | | End | |
|-------------------------|---------|------|---------|------|
| | Quarter | Year | Quarter | Year |
| NSDC | | | | |
| APPLICATION DEVELOPMENT | 1 | 2017 | 4 | 2018 |

Note
FY2019-FY2023 activities are funded in Project 670004, Other STRATCOM Activities in this PE.