

UNCLASSIFIED

| | | | | | | | | | | | | |
|--|-------------|---------|---------|--------------|--|---------------|---------|---------|---------|----------------|------------------|------------|
| Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Air Force | | | | | | | | | | Date: May 2017 | | |
| Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development | | | | | R-1 Program Element (Number/Name) PE 0606018F / NC3 Integration | | | | | | | |
| COST (\$ in Millions) | Prior Years | FY 2016 | FY 2017 | FY 2018 Base | FY 2018 OCO | FY 2018 Total | FY 2019 | FY 2020 | FY 2021 | FY 2022 | Cost To Complete | Total Cost |
| Total Program Element | - | 0.000 | 0.000 | 12.636 | 0.000 | 12.636 | 19.308 | 26.112 | 26.603 | 27.168 | Continuing | Continuing |
| 674877: NC3 Integration, Assessment, and Improvement | - | 0.000 | 0.000 | 12.636 | 0.000 | 12.636 | 19.308 | 26.112 | 26.603 | 27.168 | Continuing | Continuing |
| Quantity of RDT&E Articles | - | - | - | - | - | - | - | - | - | - | | |
| Note In FY2018, PE 0303131F, Minimum Essential Emergency Communications Network (MEECN), Project 672832 MEECN System Improvements (MSI) efforts were transferred to PE 0606018F, NC3 Integration, Project 674877, NC3 Integration, Assessment, and Improvement in order to provide greater transparency. A. Mission Description and Budget Item Justification Nuclear Deterrence Operations (NDO) is an Air Force Core Function. Within this core function, Nuclear Command and Control (NC2) is the exercise of authority and direction by the President, as Commander in Chief, through established command lines, over nuclear weapon operations of military forces. The President's authority and direction are exercised through the Nuclear Command and Control System (NCCS). The NCCS is the designated combination of flexible and enduring elements including facilities, equipment, communications, procedures, personnel, and the structure in which these elements are integrated, all of which are essential for planning, directing, and controlling nuclear weapon operations. These functions are accomplished through the Nuclear Command, Control, and Communications (NC3) system of systems. The NC3 system of systems provides connectivity from the President or Secretary of Defense through the National Military Command System (NMCS) to nuclear execution forces worldwide. To enhance NC3 mission success, the AF formalized AF NC3 elements as a specified AF Weapon System (WS). Activities funded in this PE integrate legacy systems, ongoing NC3 programs, and future capabilities for the overall AF NC3 WS. The AF Nuclear Weapon Center NC3 Integration Directorate (AFNWC/NC) will ensure current, new, and future NC3 capabilities are fully integrated as part of the Air Force's overall effort to sustain, modernize, and recapitalize the nuclear enterprise. AFNWC/NC will be responsible for integrating NC3 materiel management across Air Force Materiel Command (AFMC) to include authority and responsibility for weapon system architecture, weapon system configuration management, overall integration, system test, verification, and certification. AFNWC/NC is responsible for defining, building, and sustaining current and future NC3 WS system of systems configuration baselines, and marshaling necessary Supporting Centers in AFMC and other units/agencies in the Air Force and the Department of Defense (DoD) to support and/or accomplish these tasks. AFNWC/NC will collaborate with AFMC Supporting Centers to champion the full spectrum of doctrine, organization, training, materiel, leadership and education, personnel, facilities, and policy (DOTMLPF-P) efforts, in support of Air Force Global Strike Command as the Lead Command championing NDO requirements for all Combatant Commands. This program funds activities for integrating AF NC3 WS materiel, authority, and responsibility for the AF NC3 WS architecture, configuration management, and overall AF NC3 WS integration, system test, verification, and certification. | | | | | | | | | | | | |

UNCLASSIFIED

| | | | | | | |
|---|--|--|---------|----------------|-------------|---------------|
| Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Air Force | | | | Date: May 2017 | | |
| Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development | | R-1 Program Element (Number/Name) PE 0606018F / NC3 Integration | | | | |
| 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 years. | | | | | | |
| B. Program Change Summary (\$ in Millions) | | FY 2016 | FY 2017 | FY 2018 Base | FY 2018 OCO | FY 2018 Total |
| Previous President's Budget | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Current President's Budget | | 0.000 | 0.000 | 12.636 | 0.000 | 12.636 |
| Total Adjustments | | 0.000 | 0.000 | 12.636 | 0.000 | 12.636 |
| • 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 | 12.636 | 0.000 | 12.636 |
| Change Summary Explanation | | | | | | |
| FY18 increase of \$12.6M for NC3 Integration | | | | | | |
| C. Accomplishments/Planned Programs (\$ in Millions) | | | | FY 2016 | FY 2017 | FY 2018 |
| Title: NC3 Integration, Assessment, and Improvement | | | | 0.000 | 0.000 | 12.636 |
| Description: To include but not limited to: Modeling and simulation of the NC3 WS current and future capabilities, conducting capability gap analysis, and establishing NC3 capability recapitalization and modernization plans. Developing and conducting the NC3 WS test and certification program as well as expanding existing HF testbed utilizing a phased approach. Conducting NC3 system component verification. Implementing and employing program and material management controls for the NC3 WS including configuration management, risk management, issue tracking and resolution, assessments and analysis, and governance. Providing data-driven system of system solutions, and shaping NC3 component program acquisition strategies for AF NC3 sustainment and performance capability improvements. Initiating and implementing new capability programs/systems and changes to existing programs to align with NC3 WS requirements, test and certification, and future capabilities. | | | | | | |
| FY 2016 Accomplishments: | | | | | | |
| Funded in PE 0303131F: | | | | | | |
| - Established AFNWC NC3 Integration Directorate | | | | | | |
| - Assessed AF NC3 WS integration status | | | | | | |
| - Identified, planned and developed AF NC3 WS analysis, integration, and testing activities | | | | | | |

UNCLASSIFIED

| | | | | | | | | | | | |
|---|----------------|----------------|-------------------------------|---|--------------------------------|----------------|-----------------------|----------------|----------------|-----------------------------------|-------------------|
| Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Air Force | | | | | | | Date: May 2017 | | | | |
| Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development</i> | | | | R-1 Program Element (Number/Name) PE 0606018F / NC3 Integration | | | | | | | |
| C. Accomplishments/Planned Programs (\$ in Millions) | | | | | | | FY 2016 | FY 2017 | FY 2018 | | |
| - Consolidated and expanded upon previously stove-piped management of the weapon system FY 2017 Plans: Funded in PE 0303131F: - Continue planning and initiate integration, analysis, and testing activities for NC3 WS - Continue assessment of NC3 WS - Develop AF NC3 WS test plans FY 2018 Plans: NC3 weapon system integration efforts including, but not limited to: - Implement test and certification program for NC3 WS and expand existing HF testbed utilizing a phased approach - Perform NC3 physics, communication and networking analysis - Develop and evolve technical framework of the NC3 WS to meet mission threats of 2030 and beyond - Conduct WS analysis, develop WS capability model, plan WS updates, and implement WS updates - Evaluate options for pacing system-of-system performance improvements within constraints of WS - Analyze, model, and prototype emerging NC3 technologies - Develop and implement NC3 WS program and materiel management control processes including risk management, configuration control, integrated scheduling, budgeting and cost controls, etc. - Conduct NC3 WS health assessments, reporting, and issue resolution | | | | | | | | | | | |
| Accomplishments/Planned Programs Subtotals | | | | | | | 0.000 | 0.000 | 12.636 | | |
| D. Other Program Funding Summary (\$ in Millions) | | | | | | | | | | | |
| <u>Line Item</u> | <u>FY 2016</u> | <u>FY 2017</u> | <u>FY 2018</u> <u>Base</u> | <u>FY 2018</u> <u>OCO</u> | <u>FY 2018</u> <u>Total</u> | <u>FY 2019</u> | <u>FY 2020</u> | <u>FY 2021</u> | <u>FY 2022</u> | <u>Cost To</u> <u>Complete</u> | <u>Total Cost</u> |
| • RDTE: BA07 Line Item # 672832: MSI | 19.339 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | Continuing | Continuing |
| Remarks | | | | | | | | | | | |
| E. Acquisition Strategy The NC3 Integration acquisition strategy applies WS acquisition lifecycle principles across the system of systems AF NC3 WS. Key elements include configuration management, integration, test, verification, and certification, as well as modeling, simulation, gap analysis, and architecture development for capabilities in sustainment, development, and for future capabilities. To conduct these essential activities a combination of competitively awarded contracts, as well as sole source contracts, will be used to augment AF organic capabilities with technical skill sets from Federally Funded Research and Development Centers (FFRDCs), University Affiliated Research Centers (UARCs), and industry Advisory and Assistance Services (A&AS) providers. | | | | | | | | | | | |

UNCLASSIFIED

| | | |
|---|--|-----------------------|
| Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Air Force | | Date: May 2017 |
| Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development</i> | R-1 Program Element (Number/Name) PE 0606018F / <i>NC3 Integration</i> | |
| <u>F. Performance Metrics</u> <p>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.</p> | | |

UNCLASSIFIED

| | | | | | | | | | | | | | | | |
|--|-----------------------------------|---|--------------------|----------------|-------------------|---|-------------------|---------------------|-------------------|---|-------------------|----------------------|-------------------------|-------------------|---------------------------------|
| Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Air Force | | | | | | | | | | | | | Date: May 2017 | | |
| Appropriation/Budget Activity 3600 / 7 | | | | | | R-1 Program Element (Number/Name) PE 0606018F / NC3 Integration | | | | Project (Number/Name) 674877 / NC3 Integration, Assessment, and Improvement | | | | | |
| Product Development (\$ in Millions) | | | | FY 2016 | | FY 2017 | | FY 2018 Base | | FY 2018 OCO | | FY 2018 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 |
| DMS FFRDC/A&AS | TBD | TBD : TBD | - | 0.000 | | 0.000 | | 10.000 | Oct 2017 | 0.000 | | 10.000 | Continuing | Continuing | - |
| Subtotal | | | - | 0.000 | | 0.000 | | 10.000 | | 0.000 | | 10.000 | - | - | - |
| Support (\$ in Millions) | | | | FY 2016 | | FY 2017 | | FY 2018 Base | | FY 2018 OCO | | FY 2018 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 |
| Subtotal | | | - | - | | - | | - | | - | | - | - | - | - |
| Test and Evaluation (\$ in Millions) | | | | FY 2016 | | FY 2017 | | FY 2018 Base | | FY 2018 OCO | | FY 2018 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 |
| Integration Studies /Test Support | TBD | TBD : TBD | - | 0.000 | | 0.000 | | 1.036 | Oct 2017 | 0.000 | | 1.036 | Continuing | Continuing | - |
| Subtotal | | | - | 0.000 | | 0.000 | | 1.036 | | 0.000 | | 1.036 | - | - | - |
| Management Services (\$ in Millions) | | | | FY 2016 | | FY 2017 | | FY 2018 Base | | FY 2018 OCO | | FY 2018 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 |
| PMA (Eng/Acq Spt/Travel/Supplies) | TBD | TBD : TBD | - | 0.000 | | 0.000 | | 1.600 | Oct 2017 | 0.000 | | 1.600 | Continuing | Continuing | - |
| Subtotal | | | - | 0.000 | | 0.000 | | 1.600 | | 0.000 | | 1.600 | - | - | - |
| | | | Prior Years | FY 2016 | | FY 2017 | | FY 2018 Base | | FY 2018 OCO | | FY 2018 Total | Cost To Complete | Total Cost | Target Value of Contract |
| Project Cost Totals | | | - | 0.000 | | 0.000 | | 12.636 | | 0.000 | | 12.636 | - | - | - |
| Remarks | | | | | | | | | | | | | | | |

UNCLASSIFIED

| | | | | | |
|---|--|--|---|--|--|
| Exhibit R-4, RDT&E Schedule Profile: FY 2018 Air Force | | | Date: May 2017 | | |
| Appropriation/Budget Activity 3600 / 7 | | | R-1 Program Element (Number/Name) PE 0606018F / NC3 Integration | | |
| | | | Project (Number/Name) 674877 / NC3 Integration, Assessment, and Improvement | | |

| | FY 2016 | | | | FY 2017 | | | | FY 2018 | | | | FY 2019 | | | | FY 2020 | | | | FY 2021 | | | | FY 2022 | | | |
|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|
| | 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 |
| NC3 WS Test and Certification Program | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NC3 Assessment and Analysis | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Enhance Target Architecture through Development of NC3 Technologies | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Implement NC3 WS Program and Materiel Management Control Process | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

UNCLASSIFIED

| | | |
|--|---|---|
| Exhibit R-4A, RDT&E Schedule Details: FY 2018 Air Force | | Date: May 2017 |
| Appropriation/Budget Activity 3600 / 7 | R-1 Program Element (Number/Name) PE 0606018F / NC3 Integration | Project (Number/Name) 674877 / NC3 Integration, Assessment, and Improvement |

Schedule Details

| Events | Start | | End | |
|---|---------|------|---------|------|
| | Quarter | Year | Quarter | Year |
| NC3 WS Test and Certification Program | 1 | 2018 | 4 | 2022 |
| NC3 Assessment and Analysis | 1 | 2018 | 4 | 2022 |
| Enhance Target Architecture through Development of NC3 Technologies | 1 | 2018 | 4 | 2022 |
| Implement NC3 WS Program and Materiel Management Control Process | 1 | 2018 | 4 | 2022 |