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Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Air Force **Date:** April 2022

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|--|---|
| Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 4: Advanced Component Development & Prototypes (ACD&P)</i> | R-1 Program Element (Number/Name) PE 0604001F / NC3 Advanced Concepts |
|--|---|

| COST (\$ in Millions) | Prior Years | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total | FY 2024 | FY 2025 | FY 2026 | FY 2027 | Cost To Complete | Total Cost |
|--------------------------------------|-------------|---------|---------|--------------|-------------|---------------|---------|---------|---------|---------|------------------|------------|
| Total Program Element | - | 0.000 | 6.900 | 5.098 | 0.000 | 5.098 | 0.000 | 0.000 | 0.000 | 0.000 | Continuing | Continuing |
| 646020: <i>NC3 Advanced Concepts</i> | - | 0.000 | 6.900 | 5.098 | 0.000 | 5.098 | 0.000 | 0.000 | 0.000 | 0.000 | Continuing | Continuing |
| Quantity of RDT&E Articles | - | - | - | - | - | - | - | - | - | - | | |

Note

NC3 Advanced Concepts previously executed from PE 0303131F /BPAC 672832, MEECN System Improvements (MSI), funded in FY19 only.

A. Mission Description and Budget Item Justification

Nuclear Command, Control, and Communications (NC3) Advanced Concepts is required for development and prototyping of next generation NC3 systems and sub-systems. This program ensures a responsive design and development engineering infrastructure to address evolving Nuclear Deterrence Operations (NDO) mission requirements; emerging issues and technology insertion/technology application on the NC3 Weapon System (WS), future strategic systems/capability, and other common strategic areas where appropriate; and develop enhanced multi-use capabilities. The NC3 Advanced Concepts Program will provide technology maturation and risk reduction activities to support the AF NC3 Weapon System (AN/USQ-225). Activity will reduce life cycle costs, inform technology maturation & risk reduction efforts, improve system performance, mitigate evolving threats, and ensure both viability and durability of the AF NC3 Weapon System.

Additional details can be provided at a higher classification.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605831F and 0605833F. In FY21 \$0.0M was expended for civilian pay expenses in this program element, in FY22 \$0.0M is forecasted for civilian pay expenses in this program element.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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| B. Program Change Summary (\$ in Millions) | FY 2021 | FY 2022 | FY 2023 Base | FY 2023 OCO | FY 2023 Total |
|---|----------------|----------------|---------------------|--------------------|----------------------|
| Previous President's Budget | 0.000 | 6.900 | 0.000 | 0.000 | 0.000 |
| Current President's Budget | 0.000 | 6.900 | 5.098 | 0.000 | 5.098 |
| Total Adjustments | 0.000 | 0.000 | 5.098 | 0.000 | 5.098 |
| • 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 | 5.098 | 0.000 | 5.098 |

Change Summary Explanation

The FY 2022 President's Budget submittal did not reflect FY 2023 through FY 2026 funding. Therefore, an explanation of the change between the two budget positions for FY 2023 cannot be made in a relevant manner.

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|---|----------------|----------------|----------------|
| C. Accomplishments/Planned Programs (\$ in Millions) | FY 2021 | FY 2022 | FY 2023 |
|---|----------------|----------------|----------------|

| | | | |
|--|-------|-------|-------|
| Title: NC3 Advanced Concepts | 0.000 | 6.900 | 5.098 |
| Description: NC3 Advanced Concepts activities will include, but are not limited to: conducting studies, analysis, and prototyping; test bed activities; exercise participation; developing modeling and simulation of identified NC3 WS architecture; integrated NC3 WS testing, validation, and certification; and direct mission support contracts in support of next generation NC3 systems and sub-systems. NC3 Advanced Concepts ensures a responsive design and development engineering infrastructure to address evolving NDO. | | | |
| FY 2022 Plans: Initiate studies, analysis, and prototyping; test bed activities; exercise participation; develop modeling and simulation of identified NC3 WS architecture; integrate NC3 WS testing, validation, and certification; and direct mission support contracts in support of next generation NC3 systems and sub-systems. | | | |
| FY 2023 Plans: Continue studies, analysis, and prototyping; test bed activities; exercise participation; develop modeling and simulation of identified NC3 WS architecture; integrated NC3 WS testing, validation, and certification; direct mission support contracts in | | | |

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| Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Air Force | | Date: April 2022 | | |
| Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 4: Advanced Component Development & Prototypes (ACD&P)</i> | | R-1 Program Element (Number/Name) PE 0604001F / NC3 Advanced Concepts | | |
| C. Accomplishments/Planned Programs (\$ in Millions) | | FY 2021 | FY 2022 | FY 2023 |
| support of next generation NC3 systems and sub-systems; rapidly respond to evolving warfighter priorities and warfighter requirements. FY 2022 to FY 2023 Increase/Decrease Statement: Decrease from FY22 to FY23 reflects reduction to Direct Mission Support contracts. | | | | |
| Accomplishments/Planned Programs Subtotals | | 0.000 | 6.900 | 5.098 |
| D. Other Program Funding Summary (\$ in Millions) N/A | | | | |
| Remarks | | | | |
| E. Acquisition Strategy To conduct NC3 Advanced Concepts essential activities, a combination of competitively awarded contracts, sole source contracts, and/or other transaction authority, may be used to augment Air Force organic capabilities with technical skill sets from Federally Funded Research and Development Centers (FFRDCs), research laboratories, University-Affiliated Research Centers (UARCs), and industry Advisory and Assistance Services (A&AS) providers. All NC3 Advanced Concepts activities will be evaluated for promising technologies and considered for tech transition into the Air Force NC3 Weapon System. | | | | |

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Exhibit R-4, RDT&E Schedule Profile: PB 2023 Air Force **Date:** April 2022

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| Appropriation/Budget Activity 3600 / 4 | R-1 Program Element (Number/Name) PE 0604001F / <i>NC3 Advanced Concepts</i> | Project (Number/Name) 646020 / <i>NC3 Advanced Concepts</i> |
|--|--|---|

| | FY 2021 | | | | FY 2022 | | | | FY 2023 | | | | FY 2024 | | | | FY 2025 | | | | FY 2026 | | | | FY 2027 | | | |
|--|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|
| | 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 |

| | |
|---|--|
| <i>NC3 Advanced Concepts</i> | |
| Studies, analysis, and prototyping | |
| Test bed activities and exercise participation | |
| Develop modeling and simulation of identified NC3 WS architecture | |

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| Exhibit R-4A, RDT&E Schedule Details: PB 2023 Air Force | | Date: April 2022 |
| Appropriation/Budget Activity 3600 / 4 | R-1 Program Element (Number/Name) PE 0604001F / <i>NC3 Advanced Concepts</i> | Project (Number/Name) 646020 / <i>NC3 Advanced Concepts</i> |

Schedule Details

| Events by Sub Project | Start | | End | |
|---|---------|------|---------|------|
| | Quarter | Year | Quarter | Year |
| <i>NC3 Advanced Concepts</i> | | | | |
| Studies, analysis, and prototyping | 1 | 2022 | 4 | 2023 |
| Test bed activities and exercise participation | 1 | 2022 | 4 | 2023 |
| Develop modeling and simulation of identified NC3 WS architecture | 1 | 2022 | 4 | 2023 |

Note
NC3 Advanced Concepts (Level of Effort)