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

| | |
|--|---|
| 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 0207247F / AF TENCAP |
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| 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 | - | 22.115 | 18.820 | 23.685 | 0.000 | 23.685 | - | - | - | - | - | - |
| 670001: <i>Air Force TENCAP</i> | - | 22.115 | 18.820 | 23.685 | 0.000 | 23.685 | - | - | - | - | - | - |
| Quantity of RDT&E Articles | - | - | - | - | - | - | - | - | - | - | - | - |

A. Mission Description and Budget Item Justification

Air Force Tactical Exploitation of National Capabilities (TENCAP) increases warfighter effectiveness through the exploitation of national capabilities and promotes cross-domain integration of these capabilities into military operations/training and intelligence, surveillance and reconnaissance (ISR) activities.

AF TENCAP exploits existing air, space, cyber, national and global ISR, and Non-Traditional ISR (NTISR) for operational and tactical applications by rapidly prototyping and providing capability demonstrations. Projects are designed to transition to warfighters or national intelligence agencies for operational use, and to appropriate acquisition Programs of Record for sustainment and further development. AF TENCAP projects influence the design and operation of current and future air, space, cyber, national and global ISR, and NTISR systems while providing situational awareness to warfighters, national intelligence agency organizations, and units. AF TENCAP projects will begin an evolution to demonstrate prototype capabilities to accelerate Joint All-Domain Command and Control prototyping efforts into a single Common Operational Picture.

The program consists of multiple small projects supporting the Air Force Warfighting Integration Capability. Projects are executed to provide continued support to Special Operations Forces and the warfighter, with impacts at the national, operational, and tactical levels. Additionally, BY funding totals include 3M requested for Direct War costs.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver AF TENCAP system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605831F. In FY20 \$0.000M was expended for civilian pay expenses in this program element, and in FY21 \$0.000M is forecasted for civilian pay expenses in this program element.

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.

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| B. Program Change Summary (\$ in Millions) | FY 2020 | FY 2021 | FY 2022 Base | FY 2022 OCO | FY 2022 Total |
|---|----------------|----------------|---------------------|--------------------|----------------------|
| Previous President's Budget | 21.365 | 21.644 | 22.100 | 0.000 | 22.100 |
| Current President's Budget | 22.115 | 18.820 | 23.685 | 0.000 | 23.685 |
| Total Adjustments | 0.750 | -2.824 | 1.585 | 0.000 | 1.585 |
| • Congressional General Reductions | 0.000 | -0.039 | | | |
| • 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 | 0.750 | -2.785 | 1.585 | 0.000 | 1.585 |

Change Summary Explanation

FY20: Talon ARCHER 750K Below Threshold Request (BTR). BTR to support the 12 Talon ARCHER sites for NORAD/NORTHCOM Battlespace Awareness.

FY21: 0.039M Congressional reduction from equal distribution cut across all AF RDT&E programs. The correct amount for FY21 is 21.605M. There was an error in the XML database when data transferred from PRCP to IDECS incorrectly putting the FY21 amount at 18.820. The TENCAP PE has already been distributed the 21.605M based on the approved FY21 PB.

FY22: The FY2022 funding request was reduced by 1.415M to account for the availability of prior year execution balances. Additionally, BY funding totals include 3M requested for Direct War costs. This makes for a total addition of 1.585M.

C. Accomplishments/Planned Programs (\$ in Millions)

| | FY 2020 | FY 2021 | FY 2022 Base | FY 2022 OCO | FY 2022 Total |
|---|----------------|----------------|---------------------|--------------------|----------------------|
| Title: Exploitation Applications | 17.023 | 11.356 | 12.185 | 0.000 | 12.185 |
| Description: Exploiting existing air, space, cyber, national and global ISR, and Non-Traditional ISR (NTISR) for operational and tactical applications by rapidly prototyping and demonstrating capabilities. National capabilities are exploited to deliver rapid, cost-dominant and innovative warfighting solutions. Project activities (Talons) support Intelligence Surveillance and Reconnaissance requirements, the application of combat effects; Battlespace Awareness and Command and Control; and support to Special Operations Forces, Personnel Recovery and Close Air Support. Activities also influence the design and operation of future space, cyber, national and global ISR, and NTISR systems for tactical users. | | | | | |
| FY 2021 Plans: | | | | | |

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| C. Accomplishments/Planned Programs (\$ in Millions) | | | | | | |
| <p>The correct amount for FY21 is \$21.605M. There was an error in the XML database when data transferred from PRCP to IDECS incorrectly putting the FY21 amount at \$18.820. The TENCAP PE has already been distributed the \$21.605M based on the approved FY21 PB.</p> <ul style="list-style-type: none"> - Rapidly prototype projects and focus warfighter support and resource allocation based on AF TENCAP mission/investment areas - Execute projects which provide continued support to Special Operations Forces and the warfighter, with impacts at the national, operational, and tactical levels - Focus effort to increase Air Domain Awareness and Command and Control to Air Force and Joint Warfighters <p>FY 2022 Base Plans:</p> <ul style="list-style-type: none"> - Will continue to rapidly prototype projects and focus warfighter support and resource allocation based on AF TENCAP mission/investment areas - Will continue focused efforts to increase Air Domain Awareness and Command and Control; support to Special Operations Forces; and support to ISR and Combat Applications to meet Air Force and Joint Warfighter requirements. <p>FY 2022 OCO Plans:</p> <ul style="list-style-type: none"> - None. <p>FY 2021 to FY 2022 Increase/Decrease Statement:</p> <ul style="list-style-type: none"> - Funding increase reflects additional funding profile from Direct War costs and additional Air Force TENCAP priorities. | | | | | | |
| Title: Talon CRESTONE | | 0.000 | 1.800 | 2.000 | 0.000 | 2.000 |
| <p>Description: TALON CRESTONE provides C-UAS capability in support of CENTCOM JUONS 558 & 576. Capability will be employed from CENTCOM airborne platforms and payloads will be controlled via a remote central server. This effort leverages existing National & Tactical technology and networks focused on the highest priority threats in CENTCOM. Initial fielding by Fall 2021.</p> <p>FY 2021 Plans:</p> | | | | | | |

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| C. Accomplishments/Planned Programs (\$ in Millions) | FY 2020 | FY 2021 | FY 2022 Base | FY 2022 OCO | FY 2022 Total |
|---|---------|---------|--------------|-------------|---------------|
|---|---------|---------|--------------|-------------|---------------|

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| <p>Talon CRESTONE will complete development in FY21. Integration and test activities will continue as well as transition activities to the program of record. Procurement of additional payloads will supplement critical development and integration.</p> <p>FY 2022 Base Plans: Talon CRESTONE will begin transition activities to support handoff of the C-UAS capability to the program of record in support of CENTCOM JUONS 558 & 576. Funding will bridge transition to PoR, procure additional payloads and support critical integration and test within CENTCOM theater of operations.</p> <p>FY 2022 OCO Plans: N/A.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: - Funding increase reflects funding to support transition of capability from AF TENCAP to Program of Record. - Funding will bridge transition to Program of Record, procure additional payloads for CENTCOM theater, and enable critical continued integration and test.</p> | | | | | |
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|--|-------|-------|-------|-------|-------|
| <p>Title: Talon POWDERHORN</p> <p>Description: - TALON POWDERHORN (previously Talon OMNIA) is a project to incorporate multi-domain Maritime and Air blue force data into the THRESHER common operational picture. TENCAP will develop architectures for blue force location and status data to inform decision makers on the AF JADC2 Awareness and Battle Management operational and tactical pictures. Talon POWDERHORN, will continue to develop methodologies and architectures to ingest blue force location and status data to provide decision makers blue force courses of action during force employment. Includes integration into THRESHER Program of Record (All Domain Awareness tool).</p> <p>FY 2021 Plans: - Focusing previous Talon POWDERHORN efforts into two main areas: - Accelerating existing multi-domain ingestion with the threshold to show THRESHER Maritime/ THRESHER Air in a single common operational picture</p> | 3.600 | 1.964 | 4.500 | 0.000 | 4.500 |
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| C. Accomplishments/Planned Programs (\$ in Millions) | | | | | |
| | | | | | |
| - Developing methodologies and architectures to ingest blue force location and status data to provide decision makers blue force courses of action during force employment through Talon POWDERHORN. | | | | | |
| FY 2022 Base Plans: | | | | | |
| - Talon POWDERHORN will continue to accelerate integration of air and maritime blue force data into a single interface and demonstrate a prototype of Blue Force Air and Maritime Domain Awareness capabilities. | | | | | |
| - Will continue to develop methodologies and architectures to ingest blue force location and status data to provide decision makers blue force courses of action during force employment. | | | | | |
| FY 2022 OCO Plans: | | | | | |
| N/A. | | | | | |
| FY 2021 to FY 2022 Increase/Decrease Statement: | | | | | |
| - Funding increase reflects additional project development and integration tasks with THRESHER Increment 6 deliverables. | | | | | |
| Title: Talon 6A | | | | | |
| 0.516 2.000 3.000 0.000 3.000 | | | | | |
| Description: Talon 6A is a technology prototype to design, build, demonstrate a long-range passive ionospheric modeling research system to examine wide-area operational surveillance and assess airborne platform survivability. Effort will leverage National and Allied technologies. | | | | | |
| FY 2021 Plans: | | | | | |
| - Continue rapid prototype development of ionospheric system to examine wide-area operational surveillance and assess airborne platform survivability in partnership with National and Allied partners. | | | | | |
| FY 2022 Base Plans: | | | | | |
| - Will continue rapid prototype development of ionospheric system to examine wide-area operational surveillance and assess airborne platform survivability in partnership with National and Allied partners. | | | | | |
| FY 2022 OCO Plans: | | | | | |
| N/A | | | | | |
| FY 2021 to FY 2022 Increase/Decrease Statement: | | | | | |
| - Funding increase reflects additional development work required to prepare sites at deployed locations. | | | | | |
| Title: Talon PHOENIX | | | | | |
| 0.976 1.700 2.000 0.000 2.000 | | | | | |

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| C. Accomplishments/Planned Programs (\$ in Millions) | FY 2020 | FY 2021 | FY 2022 Base | FY 2022 OCO | FY 2022 Total |
|---|---------|---------|--------------|-------------|---------------|
| <p>Description: Talon PHOENIX is an effort to develop distributed SAP mission planning for 5th Generation and beyond.</p> <p>FY 2021 Plans: - Through partnership with DARPA, Talon PHOENIX will develop the distributed SAP mission planning for 5th Generation and beyond.</p> <p>- Develop enabler for kill-chains</p> <p>FY 2022 Base Plans: - Will begin prototype testing capability</p> <p>FY 2022 OCO Plans: N/A.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: - Funding increase reflects testing and simulation of Talon PHOENIX</p> | | | | | |
| Accomplishments/Planned Programs Subtotals | 22.115 | 18.820 | 23.685 | 0.000 | 23.685 |

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

Remarks
N/A

E. Acquisition Strategy
Projects are selected based upon needs identified by the program's customers - DOD Departments, Combatant Commands, Components, MAJCOMs, and/or National Intelligence Agencies. Many projects are executed via existing contracts maintained by other agencies; others are executed via AF TENCAP contracts established with vendors responding to annual Broad Agency Announcements. The U.S. Government organization sponsoring a project is responsible for assuming acquisition, deployment, logistics, sustainment and budgetary responsibilities for the developed capability after it has been successfully demonstrated by AF TENCAP.

AF TENCAP projects typically use an incremental acquisition strategy. AF TENCAP utilizes a disciplined systems engineering approach that allows program teams to solve problems through a series of segments. Each increment has to be successful to pursue the following segment which mitigates cost and schedule risk.

Contracts funded in this program element will be awarded using competitive procedures to the maximum extent possible.

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Exhibit R-4, RDT&E Schedule Profile: PB 2022 Air Force **Date:** May 2021

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| Appropriation/Budget Activity 3600 / 7 | R-1 Program Element (Number/Name) PE 0207247F / AF TENCAP | Project (Number/Name) 670001 / Air Force TENCAP |
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| | 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 |
| AF TENCAP Projects | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FY 2020 Exploitation Applications Developed, Evaluated, and Released | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FY 2021 Exploitation Applications Developed, Evaluated, and Released | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FY 2022 Exploitation Applications Developed, Evaluated, and Released | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Talon CRESTONE | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Talon POWEDERHON | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Talon 6A | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Talon PHOENIX | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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Exhibit R-4A, RDT&E Schedule Details: PB 2022 Air Force **Date:** May 2021

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| Appropriation/Budget Activity 3600 / 7 | R-1 Program Element (Number/Name) PE 0207247F / AF TENCAP | Project (Number/Name) 670001 / Air Force TENCAP |
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Schedule Details

| Events by Sub Project | Start | | End | |
|--|---------|------|---------|------|
| | Quarter | Year | Quarter | Year |
| AF TENCAP Projects | | | | |
| FY 2020 Exploitation Applications Developed, Evaluated, and Released | 1 | 2020 | 3 | 2021 |
| FY 2021 Exploitation Applications Developed, Evaluated, and Released | 1 | 2021 | 3 | 2022 |
| FY 2022 Exploitation Applications Developed, Evaluated, and Released | 1 | 2022 | 4 | 2022 |
| Talon CRESTONE | 1 | 2020 | 4 | 2022 |
| Talon POWEDERHON | 1 | 2020 | 4 | 2022 |
| Talon 6A | 1 | 2020 | 4 | 2022 |
| Talon PHOENIX | 1 | 2020 | 4 | 2022 |

Note

Most project selection activities occur approximately per the timelines shown, but some projects are initiated on a rolling basis throughout each year in response to time-sensitive operational requirements.