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| Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Army | Date: May 2021 |
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| Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 3: Advanced Technology Development (ATD)</i> | R-1 Program Element (Number/Name) PE 0603044A / <i>Soldier Advanced Technology</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 | - | - | - | 0.890 | - | 0.890 | - | - | - | - | - | - |
| CN8: <i>Soldier Enabled University Advanced Development</i> | - | - | - | 0.890 | - | 0.890 | - | - | - | - | - | - |

A. Mission Description and Budget Item Justification

This PE matures, optimizes, and validates applied research technologies to demonstrate improved capabilities and systems that advance Soldier and Squad lethality-overmatch and Soldier performance beyond those technologies planned within the Soldier Lethality Cross-Functional Team. Advanced technology research efforts focus on the maturation and integration of broad capabilities and systems that span a range of technical areas to address enduring Soldier needs. These efforts transition outputs to existing and emerging systems in support of continuing enhancement of Soldier capabilities. The PE will fund civilian salaries for in-house researchers/scientists and program managers collaborating with external subject matter experts in academia and industry who are leaders in these technology research areas.

In FY20 the Army restructured Science and Technology resources to align to the Secretary of the Army's six modernization priorities and allow transparent accountability of these priorities. Creation of this PE will facilitate the Soldier Lethality priority identification of technologies that enable multiple Soldier systems and are enduring (e.g. power generation, storage and distribution; protective materials; network integration; human systems integration, personnel research). This PE creation completes the FY20 restructuring process and ensures consistency across the six priority areas PE structures, with each priority area having two PEs per Budget Activity: one aligned to Soldier efforts that support priority systems (e.g. Next Generation Squad Weapons, Integrated Virtual Augmentation System) and the other aligned to enduring enabling technologies projects for future capabilities and/or technology upgrades. The enabling projects will be moved from the Soldier Technologies PE 63311 A to this new PE, improving visibility of Army research efforts that enable the future operating environment.

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy. Work in this Project is performed by the United States (US) Army Futures Command (AFC).

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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 | 0.000 | 0.000 | 0.000 | - | 0.000 |
| Current President's Budget | 0.000 | 0.000 | 0.890 | - | 0.890 |
| Total Adjustments | 0.000 | 0.000 | 0.890 | - | 0.890 |
| • Congressional General Reductions | - | - | | | |
| • Congressional Directed Reductions | - | - | | | |
| • Congressional Rescissions | - | - | | | |
| • Congressional Adds | - | - | | | |
| • Congressional Directed Transfers | - | - | | | |
| • Reprogrammings | - | - | | | |
| • SBIR/STTR Transfer | - | - | | | |
| • Adjustments to Budget Years | - | - | 0.890 | - | 0.890 |

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Exhibit R-2A, RDT&E Project Justification: PB 2022 Army **Date:** May 2021

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|---|--------------------|----------------|----------------|---------------------|--|----------------------|----------------|----------------|--|----------------|-------------------------|-------------------|
| Appropriation/Budget Activity 2040 / 3 | | | | | R-1 Program Element (Number/Name) PE 0603044A / <i>Soldier Advanced Technology</i> | | | | Project (Number/Name) CN8 / <i>Soldier Enabled University Advanced Development</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 |
| CN8: <i>Soldier Enabled University Advanced Development</i> | - | - | - | 0.890 | - | 0.890 | - | - | - | - | - | - |
| Quantity of RDT&E Articles | - | - | - | - | - | - | - | - | - | - | | |

Note

This is a new start in FY 2022.

In Fiscal Year 2022 (FY22), This is a new Start.

A. Mission Description and Budget Item Justification

This Project leverages advanced technological innovations from academia to accelerate the optimization and demonstration of improved capabilities and systems that advance Soldier and Squad lethality-overmatch and Soldier performance and meet mission needs in the future operating environments. This Project funds collaborative, enduring advanced extramural university-based maturation and demonstration of technologies and brings together competitively selected universities with Army research teams into Technical Alliances. This effort will focus efforts on mid- to far-term Army modernization priorities while also maintaining delivery of near-term technologies critical to supporting the modernization priorities. The technical scope of this Project includes the optimization, maturation and demonstration of overarching Soldier-centric technologies including human systems integration, simplified synthetic training environments, advanced protective materials, power and energy, Warfighter endurance, robotics, as well as other innovative Soldier enabled advanced research technologies that will accelerate the Army modernization in Synthetic Training Environment, and Soldier Lethality. This effort conducts advanced research and development leading to potential emerging technologies in areas of strategic importance to the Army in Soldier capabilities related to increased protection, performance, agility, situational awareness, and lethality. This Project will continuously strive to engage and collaborate with entities that might not otherwise collaborate with the DoD to demonstrate and provide novel Soldier-centric technologies for accelerating the adoption of emerging technologies for the Warfighter in the Army Soldier portfolio.

Work in this Project supports the Army Modernization Priority Synthetic Training Environment, and Soldier Lethality and the overall Soldier portfolio.

The cited work is consistent with Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.

Work in this Project is performed by the United States (US) Army Futures Command.

Work in this Project complements and supports transitions from Soldier Enabling University Applied Research in PE 0602184A (Soldier Applied Research).

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

| | | | |
|---|----------------|----------------|----------------|
| | FY 2020 | FY 2021 | FY 2022 |
| Title: Advanced Soldier Performance and Training | - | - | 0.590 |

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| B. Accomplishments/Planned Programs (\$ in Millions) | | FY 2020 | FY 2021 | FY 2022 |
| <p>Description: Mature and demonstrates Soldier capabilities related to increased protection, performance, agility, situational awareness, training, and lethality.</p> <p>FY 2022 Plans: Further mature and integrate reliable monitoring and assessment technologies for the health and readiness of Warfighters through digital/wireless biomarkers and biosensors; comprehensive automated testing framework to guarantee that synthetic training environments are highly trustworthy, reliable, and usable.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: This is a new start. Funding increase reflects realigning of funding to create this New task to support enduring, overarching maturation of Soldier-centric technologies with academic partners for increased situational awareness capabilities.</p> | | | | |
| <p>Title: Soldier Advanced Materials for the Integrated Combat Platform</p> <p>Description: Optimize and mature advanced materials and electronics that are standardized to the Soldier and their equipment through integrated combat platform.</p> <p>FY 2022 Plans: Mature Soldier electronics technology and optimize server processing to enable real-time data/video analytics and faster target detection capabilities. Mature and demonstrate advanced materials, such as flexible, energy storage, self-healing and super materials, for increased protection, power, and wireless technology to further integrate with the Soldier and Squad combat platform.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: This is a new start. Funding increase reflects realigning of funding to create this New task to support university-based, enduring, overarching maturation of advanced materials for increased Soldier protection capabilities.</p> | | - | - | 0.300 |
| Accomplishments/Planned Programs Subtotals | | - | - | 0.890 |
| C. Other Program Funding Summary (\$ in Millions) | | | | |
| N/A | | | | |
| Remarks | | | | |
| D. Acquisition Strategy | | | | |
| N/A | | | | |