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**Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army** **Date:** March 2023

| <b>Appropriation/Budget Activity</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army / BA 2: Applied Research</i> |             |         |         |              | <b>R-1 Program Element (Number/Name)</b><br>PE 0602134A / <i>Counter Improvised-Threat Advanced Studies</i> |               |         |         |         |         |                  |            |
|--|-------------|---------|---------|--------------|---|---------------|---------|---------|---------|---------|------------------|------------|
| COST (\$ in Millions)  | Prior Years | FY 2022 | FY 2023 | FY 2024 Base | FY 2024 OCO   | FY 2024 Total | FY 2025 | FY 2026 | FY 2027 | FY 2028 | Cost To Complete | Total Cost |
| Total Program Element  | -           | 1.904   | 6.192   | 6.242        | -   | 6.242         | 6.245   | 6.273   | 6.276   | 6.344   | 0.000            | 39.476     |
| CD2: <i>Counter Improvised-Threat Advanced Studies</i>   | -           | 1.904   | 6.192   | 6.242        | -   | 6.242         | 6.245   | 6.273   | 6.276   | 6.344   | 0.000            | 39.476     |

**A. Mission Description and Budget Item Justification**

This Program Element (PE) executes applied research into novel methods for detecting and defeating Improvised Explosive Devices (IED) through the application of emerging technologies as well as research into emerging IED threats to evaluate potential methods of defeat. The goal of this research is to increase the ability of deployed forces to positively identify IEDs with minimal false alarms and positively neutralize or mitigate the effects of IEDs with minimal collateral damage through the systematic identification and maturation of technologies capable of defeating IEDs.

This PE is executed by the Army Futures Command (AFC) in coordination with the Under Secretary of Defense for Research and Engineering (USD/R&E) and the Defense Threat Reduction Agency (DTRA).

Work in this PE was previously conducted under PE 0602134BR, Improvised Threat Reduction Applied Research.

| <b>B. Program Change Summary (\$ in Millions)</b> | <b>FY 2022</b> | <b>FY 2023</b> | <b>FY 2024 Base</b> | <b>FY 2024 OCO</b> | <b>FY 2024 Total</b> |
|---|----------------|----------------|---------------------|--------------------|----------------------|
| Previous President's Budget                       | 1.976          | 6.192          | 6.215               | -                  | 6.215                |
| Current President's Budget                        | 1.904          | 6.192          | 6.242               | -                  | 6.242                |
| Total Adjustments                                 | -0.072         | 0.000          | 0.027               | -                  | 0.027                |
| • Congressional General Reductions                | -              | -              |                     |                    |                      |
| • Congressional Directed Reductions               | -              | -              |                     |                    |                      |
| • Congressional Rescissions                       | -              | -              |                     |                    |                      |
| • Congressional Adds                              | -              | -              |                     |                    |                      |
| • Congressional Directed Transfers                | -              | -              |                     |                    |                      |
| • Reprogrammings                                  | -0.072         | -              |                     |                    |                      |
| • SBIR/STTR Transfer                              | -              | -              |                     |                    |                      |
| • Adjustments to Budget Years                     | -              | -              | 0.027               | -                  | 0.027                |

**Change Summary Explanation**

Increased funding due to revised economic assumptions.

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|  |                    |                |                |                     |   |                      |                |                |   |                         |                         |                   |
|--|--------------------|----------------|----------------|---------------------|---|----------------------|----------------|----------------|---|-------------------------|-------------------------|-------------------|
| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Army |                    |                |                |                     |   |                      |                |                |   | <b>Date:</b> March 2023 |                         |                   |
| <b>Appropriation/Budget Activity</b><br>2040 / 2                   |                    |                |                |                     | <b>R-1 Program Element (Number/Name)</b><br>PE 0602134A / <i>Counter Improvised-Threat Advanced Studies</i> |                      |                |                | <b>Project (Number/Name)</b><br>CD2 / <i>Counter Improvised-Threat Advanced Studies</i> |                         |                         |                   |
| <b>COST (\$ in Millions)</b>                                       | <b>Prior Years</b> | <b>FY 2022</b> | <b>FY 2023</b> | <b>FY 2024 Base</b> | <b>FY 2024 OCO</b>  | <b>FY 2024 Total</b> | <b>FY 2025</b> | <b>FY 2026</b> | <b>FY 2027</b>  | <b>FY 2028</b>          | <b>Cost To Complete</b> | <b>Total Cost</b> |
| CD2: <i>Counter Improvised-Threat Advanced Studies</i>             | -                  | 1.904          | 6.192          | 6.242               | -   | 6.242                | 6.245          | 6.273          | 6.276   | 6.344                   | 0.000                   | 39.476            |

**A. Mission Description and Budget Item Justification**

This Project investigates novel methods for detecting and defeating improvised explosive devices (IED) as well as research into emerging IED threats to evaluate potential methods of defeat of the same.

This Project is executed by the Army Futures Command (AFC) in coordination with the Under Secretary of Defense for Research and Engineering (USD/R&E) and the Defense Threat Reduction Agency (DTRA).

Work in this Project was previously conducted under PE 0602134, Improvised Threat Reduction Applied Research.

Work in this Project is related to, and fully coordinated with, PE 0603134A Counter Improvised-Threat Simulation.

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

|  | <b>FY 2022</b> | <b>FY 2023</b> | <b>FY 2024</b> |
|--|----------------|----------------|----------------|
| <b>Title:</b> Counter IED Emerging Technologies  | 1.904          | 5.966          | 6.242          |
| <b>Description:</b> This effort investigates emerging technologies to include physics, chemistry, biology and computer science to identify applications to detect current and emerging IED threats and defeat their critical components. This effort investigates novel methods and technology solutions for the detection and defeat of IEDs through the systematic identification and maturation of technologies capable of defeating these threats. The goals include increasing the distance for standoff detection, improving the probability of positive identification and reducing the rate of false indications. This effort is informed by technology trends across the Department of Defense and by analysis of IED threats encountered in operational scenarios. |                |                |                |
| <b>FY 2023 Plans:</b><br>Investigate, research and validate emerging RF, EM, EO/IR and other novel IED detection technologies and technology components. Investigate advanced neutralization techniques and components that can be applied to predicting threat emplacements. Evaluate multiple technologies in a laboratory environment for their ability to counter IED threats.   |                |                |                |
| <b>FY 2024 Plans:</b><br>Will investigate and mature optical and RF components and techniques to mitigate electromagnetic interference and increase detectability of physically obscured targets. Will reduce time needed for neutralization and expand effectiveness against various  |                |                |                |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Army   |   | <b>Date:</b> March 2023   |                |                |
| <b>Appropriation/Budget Activity</b><br>2040 / 2   | <b>R-1 Program Element (Number/Name)</b><br>PE 0602134A / <i>Counter Improvised-Threat Advanced Studies</i> | <b>Project (Number/Name)</b><br>CD2 / <i>Counter Improvised-Threat Advanced Studies</i> |                |                |
| <b>B. Accomplishments/Planned Programs (\$ in Millions)</b>  |   | <b>FY 2022</b>  | <b>FY 2023</b> | <b>FY 2024</b> |
| IED trigger types. Will continue to investigate and develop emerging technologies to assess their ability to counter IED threats. Will investigate sensor effectiveness in multiple locations and in varied environments.<br><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b><br>Funding increase reflects planned lifecycle of this effort. |   |   |                |                |
| <b>Title:</b> SBIR/STTR Transfer<br><b>FY 2023 Plans:</b><br>Funding transferred in accordance with Title 15 USC §638<br><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b><br>Funding transferred in accordance with Title 15 USC §638  |   | -   | 0.226          | -              |
| <b>Accomplishments/Planned Programs Subtotals</b>  |   | 1.904   | 6.192          | 6.242          |
| <b>C. Other Program Funding Summary (\$ in Millions)</b><br>N/A  |   |   |                |                |
| <b>Remarks</b>   |   |   |                |                |
| <b>D. Acquisition Strategy</b><br>N/A  |   |   |                |                |