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

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| <b>Appropriation/Budget Activity</b><br>0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide / BA 6: RDT&amp;E Management Support</i> | <b>R-1 Program Element (Number/Name)</b><br>PE 0605502S / <i>Small Business Innovative Research (SBIR)</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                         | 68.353      | 11.500  | 0.000   | 0.000        | -           | 0.000         | 0.000   | 0.000   | 0.000   | -       | Continuing       | Continuing |
| 01: <i>Small Business Innovative Research</i> | 68.353      | 11.500  | 0.000   | 0.000        | -           | 0.000         | 0.000   | 0.000   | 0.000   | 0.000   | Continuing       | Continuing |

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

Defense Logistics Agency's (DLA's) ability to deliver Americans the right logistics solution in every transaction requires more than successful management of the Agency's wholesale supplies and suppliers. It requires supply chain excellence. Our military's ability to generate and sustain combat readiness indefinitely, anywhere on the globe requires that DLA-managed materiel flow seamlessly and as needed from the nation's industrial base to where it is ultimately used.

DLA's Small Business Innovative Research (SBIR) program seeks to solicit innovative research and development proposals from the small business community to address DLA's strategic and operational requirements. All selections shall demonstrate and involve some technical risk with yet to be determined technical feasibility. Phase I proposals should demonstrate the feasibility of the proposed technology and provide a strong business case for Phase II investment for a prototype or at least a proof-of-concept demonstration. A favorable return on investment and commercialization potential have a strong influence on Phase II selections.

| <b>B. Program Change Summary (\$ in Millions)</b> | <b><u>FY 2022</u></b> | <b><u>FY 2023</u></b> | <b><u>FY 2024 Base</u></b> | <b><u>FY 2024 OCO</u></b> | <b><u>FY 2024 Total</u></b> |
|---|-----------------------|-----------------------|----------------------------|---------------------------|-----------------------------|
| Previous President's Budget                       | 11.500                | 0.000                 | 0.000                      | -                         | 0.000                       |
| Current President's Budget                        | 11.500                | 0.000                 | 0.000                      | -                         | 0.000                       |
| Total Adjustments                                 | 0.000                 | 0.000                 | 0.000                      | -                         | 0.000                       |
| • Congressional General Reductions                | -                     | -                     |                            |                           |                             |
| • Congressional Directed Reductions               | -                     | -                     |                            |                           |                             |
| • Congressional Rescissions                       | -                     | -                     |                            |                           |                             |
| • Congressional Adds                              | -                     | -                     |                            |                           |                             |
| • Congressional Directed Transfers                | -                     | -                     |                            |                           |                             |
| • Reprogrammings                                  | -                     | -                     |                            |                           |                             |
| • SBIR/STTR Transfer                              | -                     | -                     |                            |                           |                             |

**Change Summary Explanation**

FY 2022:

Defense Logistics Agency (DLA) SBIR/STTR taxes were \$4.879 million and Defense Microelectronics Agency (DMEA) taxes were \$6.621 million.

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|--|--------------------|----------------|----------------|---------------------|--|----------------------|----------------|----------------|--|-------------------------|-------------------------|-------------------|
| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Defense Logistics Agency |                    |                |                |                     |  |                      |                |                |  | <b>Date:</b> March 2023 |                         |                   |
| <b>Appropriation/Budget Activity</b><br>0400 / 6                                       |                    |                |                |                     | <b>R-1 Program Element (Number/Name)</b><br>PE 0605502S / <i>Small Business Innovative Research (SBIR)</i> |                      |                |                | <b>Project (Number/Name)</b><br>01 / <i>Small Business Innovative Research</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> |
| 01: <i>Small Business Innovative Research</i>  | 68.353             | 11.500         | 0.000          | 0.000               | -  | 0.000                | 0.000          | 0.000          | 0.000  | 0.000                   | Continuing              | Continuing        |
| Quantity of RDT&E Articles   | -                  | -              | -              | -                   | -  | -                    | -              | -              | -  | -                       |                         |                   |

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

The Small Business Innovation Program (SBIP) explores innovative concepts pursuant to Public Law 106-554 (Small Business Reauthorization Act of 2000) and Public Law 107-50 (Small Business Technology Transfer Program Reauthorization Act of 2001), which mandates a two-phase competition for small businesses with innovative technologies with a defense application as well as a commercial value. The Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs will develop new dual-use technologies for possible future DLA operational and sustainment requirements. DLA strives to make it fast and easy for customers to work with our Agency by quickly understanding current requirements and anticipating their future needs. In support of the major subordinate commands and military Services, Small Business Innovation Research (SBIR) helps to ensure readiness and lethality across the end-to-end supply chain by optimizing retail and industrial support, which ultimately reduces risk and increases efficiency, and positions solutions for Warfighter requirements.

Dual-use means the technologies will be judged on their potential for future private sector investment both as a vehicle for reducing development time and cost, unit costs of new DLA technologies, and as a route to national economic growth through new commercial products. DLA will conduct the competition as well as award and manage the contracts.

The DLA's SBIR/STTR investments are divided into multiple Research Areas that are aligned with the National Defense Strategy and the DLA Strategic Plan.

**DLA R&D SBIP Strategic Focus Areas**

- Nuclear Enterprise Support: To maintain nuclear weapons systems readiness, SBIP seeks to qualify alternate sources of supply through the reverse engineering of technical data and/or source approval processes to improve availability for consumable parts for weapons systems with limited or diminishing sources of supply.
- Force Readiness and Lethality: To improve life cycle performance through technological advancement, innovation and reengineering, SBIP strives to mitigate single points-of-failure that threaten the readiness of weapons systems used by our Warfighters.
- Supply Chain Innovation: To maintain a secure and resilient supply chain, SBIP provides opportunities for our small business industrial base to engage in technological innovations that enhance supply chain operations, improve procurement lead times, and reduce life cycle costs.
- Supply Chain Assurance: To ensure supply chain readiness, SBIP endeavors to secure the microelectronics supply chain, adopt industrial base best practices associated with counterfeit risk reduction, and develop a domestic supply of rare earth elements essential to maintain the integrity of DLA's complex supply chain.

**DMEA**

- Advanced microelectronics concepts, technologies, and applications
- Continue to seek innovative technical solutions to DOD microelectronics research and development needs and increase private sector commercialization of these innovations.

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| <b>B. Accomplishments/Planned Programs (\$ in Millions)</b>  | <b>FY 2022</b> | <b>FY 2023</b> | <b>FY 2024</b> |
|--|----------------|----------------|----------------|
| <p><b>Title:</b> SBIR Accomplishments/Plans</p> <p><b>Description:</b> DLA FY 2022 SBIR/STTR Accomplishments:</p> <ul style="list-style-type: none"> <li>- Grew Small Business capability to combat repair part sourcing challenges associated with weapon system aging, obsolescence, and DMSMS through innovation, reverse engineering, and advanced manufacturing techniques</li> <li>- Developed domestic suppliers for critical REEs, and derived materials and parts, such as magnets. Successfully developed recycling technologies for rare earth elements/magnets and qualified products for a drop-in replacement for high performance weapons systems (i.e. F-35s/F-16s, JDAMs, turbine engines for various fighter jets, etc.)</li> <li>- Sponsored innovative manufacturing technologies to enhance supply chain operation and improve weapon system lifecycle performance (i.e. Fuel Cells, A/C Canopy Seals, Braking Systems, etc.)</li> <li>- Developed Additive Manufacturing process monitoring and control system for Laser Powder Bed Fusion and Directed Energy Deposition methods - Transition system to OEMs, Army ARL, Air Force, NASA and other research institutions.</li> </ul> <p>DMEA FY 2022 SBIR Accomplishments - The SBIR Program contributed to the advancement of microelectronics concepts, technologies, and applications through the following topics initiated in FY 2022:</p> <ul style="list-style-type: none"> <li>• Synthesizable Register Transfer Logic (RTL) Assertions</li> <li>• Ultra High Voltage Silicon Carbide (SiC) Gated Devices (D2P2)</li> </ul> <p><b>FY 2023 Plans:</b><br/>DLA SBIR/STTR:<br/>Continue execution of all active Phase I and Phase II SBIR/STTR Projects. Work with other R&amp;D Programs and other divisions with DLA to identify requirements that meet DLA's long and short term Strategic Objectives. Provide adequate guidance and mentorship to Phase II to projects to increase the likelihood of transition into government programs of record or commercial ventures. Issue Phase III contracts.</p> <p>DMEA SBIR:<br/>Continue to seek innovative technical solutions to DoD microelectronics research and development needs and increase private sector commercialization of these innovations.</p> <p>Emerging results from these FY 2023 SBIR efforts will be reported in FY 2024:</p> <ul style="list-style-type: none"> <li>• Automated Measurement of Passive Devices in Printed Circuit Assemblies</li> <li>• High Voltage Package Encapsulation using Innovative and Advanced Materials</li> <li>• High-G Accelerometers</li> </ul> | 11.500         | 0.000          | -              |

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| <b>B. Accomplishments/Planned Programs (\$ in Millions)</b>  | <b>FY 2022</b> | <b>FY 2023</b> | <b>FY 2024</b> |
|--|----------------|----------------|----------------|
| <ul style="list-style-type: none"> <li>• High-G Clock Source</li> <li>• Low Cost High Power Opening and Closing Switches (D2P2)</li> <li>• Modular Cryogenic Dewar for Radiation Testing</li> <li>• SiC Stress Tuning</li> <li>• Ultra-High Voltage Insulated Gate Bipolar Transistor on SiC (D2P2)</li> <li>• Ultra Wideband Voltage Controlled Oscillator</li> <li>• Vertical Photoconductive Semiconductor Switch (PCSS) &amp; Triggering Assembly</li> <li>• Radiation Shielding (Sequential Phase II)</li> </ul> <p><b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b><br/>SBIR and STTR tax amounts are based on enacted budgets.</p> |                |                |                |
| <b>Accomplishments/Planned Programs Subtotals</b>  | 11.500         | 0.000          | -              |

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

N/A

**D. Acquisition Strategy**

The SBIR acquisition process seeks to match projects with DLA's Strategic Focus Areas. The goal is to align SBIR/STTR developed technology with current and future DLA requirements. DLA solicits all new project execution work through the DOD SBIR Broad Agency Announcement (BAA). There are three separate solicitation periods throughout each year. (Jan-Feb, May-Jun, and Sep-Oct)