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

|  |   |
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| <b>Appropriation/Budget Activity</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army / BA 5: System Development &amp; Demonstration (SDD)</i> | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</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                                   | -           | 86.154  | 88.552  | 67.873       | -           | 67.873        | -       | -       | -       | -       | -                | -          |
| CF3: <i>Integrated Soldier Systems (SL CFT)</i>         | -           | 6.818   | 4.429   | 4.371        | -           | 4.371         | -       | -       | -       | -       | -                | -          |
| ES9: <i>Advanced Tactical Parachute System</i>          | -           | 6.345   | 1.761   | 2.705        | -           | 2.705         | -       | -       | -       | -       | -                | -          |
| EW4: <i>Crew Served Weapons Engineering Development</i> | -           | 3.982   | 9.608   | 2.443        | -           | 2.443         | -       | -       | -       | -       | -                | -          |
| FF2: <i>Small Arms Fire Control</i>                     | -           | 14.095  | 9.782   | 11.107       | -           | 11.107        | -       | -       | -       | -       | -                | -          |
| FI2: <i>Lightweight 30mm Cannon</i>                     | -           | 1.327   | -       | -            | -           | -             | -       | -       | -       | -       | -                | -          |
| FL8: <i>84mm MAAWS Ammunition</i>                       | -           | 3.874   | 3.017   | 6.117        | -           | 6.117         | -       | -       | -       | -       | -                | -          |
| FM4: <i>Next Generation Squad Weapons</i>               | -           | 31.719  | 32.001  | 13.599       | -           | 13.599        | -       | -       | -       | -       | -                | -          |
| S58: <i>Soldier Enhancement Program</i>                 | -           | -       | 9.000   | 3.655        | -           | 3.655         | -       | -       | -       | -       | -                | -          |
| S60: <i>Clothing &amp; Equipment</i>                    | -           | 6.188   | 6.472   | 5.393        | -           | 5.393         | -       | -       | -       | -       | -                | -          |
| S61: <i>Acis Engineering Development</i>                | -           | 2.865   | 1.790   | 2.528        | -           | 2.528         | -       | -       | -       | -       | -                | -          |
| S63: <i>Individual Weapons Engineering Development</i>  | -           | 2.586   | 4.214   | 3.651        | -           | 3.651         | -       | -       | -       | -       | -                | -          |
| S70: <i>Personnel Recovery Support System (PRSS)</i>    | -           | -       | -       | 3.132        | -           | 3.132         | -       | -       | -       | -       | -                | -          |
| VS5: <i>Soldier Protective Equipment</i>                | -           | 6.355   | 6.478   | 9.172        | -           | 9.172         | -       | -       | -       | -       | -                | -          |

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

This Program Element (PE) Engineering and Manufacturing Development (EMD) manages the Soldier as a system, with the goal of increasing Soldiers' combat effectiveness, increasing survivability, and improving the Soldiers' quality of life. It develops and tests prototypes of weapons, clothing, equipment, and other items useful to support the Soldier.

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| <b>Appropriation/Budget Activity</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army / BA 5: System Development &amp; Demonstration (SDD)</i>  | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> |                       |
| <p>Project CF3 (Integrated Soldier Systems (SL CFT)) supports the Adaptive Soldier Architecture (ASA) effort that will develop a full system architecture for the Soldier and the Squad. The focus will be full integration of all mission-specific equipment into the ASA as well as full configuration management of the Configuration Database, Architecture Assessment Tool and Squad Performance Model.</p> <p>Project ES9 (Advanced Tactical Parachute System) improves personnel parachute systems and associated equipment for low and high altitude operations to include canopy improvements based on integration of new technology with the goal of enhancing the insertion capability and safety of the airborne Soldier and increasing the performance, reliability, and durability of personnel airdrop equipment.</p> <p>Project EW4 (Crew Served Weapons Engineering Development) supports efforts to transition components or prototypes from Small Arms Improvement, Project S54, Program Element 0603827A, (Budget Activity 4) and other domestic and foreign sources of small arms weapons to demonstrate, test and evaluate capability near or at planned operational requirements.</p> <p>Project FF2 (Small Arms Fire Control) supports the development of an advanced fire control for the Next Generation Automatic Rifle (NGSW-AR) and Rifle (NGSW-R). The Next Generation Fire Control will increase the probability of hit and decrease the time to engage through a variable powered direct view optic with integrated range finder, ballistic calculator, and digital display capable of providing an adjusted aim point.</p> <p>Project FI2 (Lightweight 30mm Cannon) provides increased lethality modification to Product Directorate Counter-Rocket Artillery Mortars (PD C-RAM) under a JUONS. An upgraded medium caliber weapon will be developed, tested and evaluated for integration into a modified remote weapon station under an Urgent Materiel Release (UMR).</p> <p>Project FL8 (84mm MAAWS Ammunition) supports test, evaluation and quality up to seven types of 84 millimeter (mm) munitions for the U.S. Army use with the M3/M3A1 Multi-Role Anti-Personnel Weapon Systems (MAAWS).</p> <p>Project FM4 (Next Generation Squad Weapons) supports the rapid prototyping and development of a NGSW-AR, NGSW-R and common cartridge to provide capability improvements in accuracy, range and lethality, in order to maintain overmatch and meet future warfighter requirements.</p> <p>Project S58 (Soldier Enhancement Program) supports accelerated integration, modernization, and enhancement efforts of lighter, more lethal weapons, and improved Soldier items including lighter, more comfortable load-bearing equipment, field gear, survivability items, communications equipment, and navigational aids.</p> <p>Project S60 (Clothing &amp; Equipment) supports pre-production development of state-of-the-art individual clothing and equipment to improve the survivability, mobility and sustainment affecting the quality of life of the individual Soldier.</p> <p>Project S61 (Acis Engineering Development) provides System Development programs with improved aviator safety, survivability, and human performance that amplify the warfighting effectiveness and facilitates full-spectrum dominance of the Army aircraft including the AH-64 Apache/Longbow, CH-47 Chinook, UH/HH-60 Blackhawk, Light Utility Helicopter, and Armed Reconnaissance Helicopter.</p> |   |                       |

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| <b>Appropriation/Budget Activity</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army / BA 5: System Development &amp; Demonstration (SDD)</i> | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> |
|--|---|

Project S63 (Individual Weapons Engineering Development) demonstrates engineering development models or integrated commercial items designed to enhance lethality, target acquisition, fire control, training effectiveness, and reliability for small arms weapon systems and ammunition. Programs include Improved Weapons Coatings, Personal Defense Weapon, 30 Round 5.56mm Magazine, Modular Handgun System (MHS), Precision Sniper Rifle (PSR), Sub Compact, and Interim Combat Service Rifle (ICR).

Project S70 (Personnel Recovery Support System (PRSS)) provides system research, development and testing of the Personal Recovery Support System/Personnel Recovery Support Equipment supporting operations to report and locate isolated, missing, detained or captured Soldiers.

Project VS5 (Soldier Protective Equipment) supports engineering and manufacturing development of Individual Soldier Ballistic Protection equipment. It will leverage advancements in technology to continue incremental improvements to body armor (to include improved outer tactical vests, plate carriers, and helmets) and other personal protective equipment.

| <b>B. Program Change Summary (\$ in Millions)</b> | <b>FY 2020</b> | <b>FY 2021</b> | <b>FY 2022 Base</b> | <b>FY 2022 OCO</b> | <b>FY 2022 Total</b> |
|---|----------------|----------------|---------------------|--------------------|----------------------|
| Previous President's Budget                       | 87.179         | 91.574         | 61.328              | -                  | 61.328               |
| Current President's Budget                        | 86.154         | 88.552         | 67.873              | -                  | 67.873               |
| Total Adjustments                                 | -1.025         | -3.022         | 6.545               | -                  | 6.545                |
| • Congressional General Reductions                | -              | -              |                     |                    |                      |
| • Congressional Directed Reductions               | -              | -14.236        |                     |                    |                      |
| • Congressional Rescissions                       | -              | -              |                     |                    |                      |
| • Congressional Adds                              | -              | 14.500         |                     |                    |                      |
| • Congressional Directed Transfers                | -              | -              |                     |                    |                      |
| • Reprogrammings                                  | 2.500          | -              |                     |                    |                      |
| • SBIR/STTR Transfer                              | -3.525         | -3.286         |                     |                    |                      |
| • Adjustments to Budget Years                     | -              | -              | 6.545               | -                  | 6.545                |

**Congressional Add Details (\$ in Millions, and Includes General Reductions)**

**Project:** EW4: *Crew Served Weapons Engineering Development*

Congressional Add: *FY 2020 Congressional Add: Cannon Life Extension Program*

Congressional Add: *Program increase - turret gunner survivability and simulation environment*

Congressional Add Subtotals for Project: EW4

**Project:** S58: *Soldier Enhancement Program*

Congressional Add: *Program increase - soldier enhancement program*

|  | <b>FY 2020</b> | <b>FY 2021</b> |
|--|----------------|----------------|
|  | 1.500          | 1.500          |
|  | -              | 4.000          |
| Congressional Add Subtotals for Project: EW4 | 1.500          | 5.500          |
|  | -              | 9.000          |

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| <b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2022 Army | <b>Date:</b> May 2021 |
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| <b>Appropriation/Budget Activity</b><br>2040: <i>Research, Development, Test &amp; Evaluation, Army / BA 5: System Development &amp; Demonstration (SDD)</i> | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> |
|--|---|

**Congressional Add Details (\$ in Millions, and Includes General Reductions)**

|  | FY 2020 | FY 2021 |
|--|---------|---------|
| Congressional Add Subtotals for Project: S58 | -       | 9.000   |
| Congressional Add Totals for all Projects    | 1.500   | 14.500  |

**Change Summary Explanation**

\$3.700 million of FY22 will be realigned to APE 654601S58, Soldier Enhancement Program due to subsequent to the DD1 decision to defund SEP, the AFC Commander has directed that SEP funding be restored in order to carry out both the CSA's as well as Congressional intent - reversing the DD1 defunding decision. The total increase of \$6.970 million, is cumulated across several projects. The increase will support re-phasing to accelerate development and test of new waveforms and hardware for the PRSE system, project S70. Also, the increase supports anticipated FY22 requirements changes in project ES9. Finally, the increase will allow project FL8 to complete delayed delta testing of existing rounds, and complete production qualification testing.

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|--|--------------------|----------------|----------------|---------------------|---|----------------------|----------------|----------------|--|-----------------------|-------------------------|-------------------|
| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Army |                    |                |                |                     |   |                      |                |                |  | <b>Date:</b> May 2021 |                         |                   |
| <b>Appropriation/Budget Activity</b><br>2040 / 5                   |                    |                |                |                     | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> |                      |                |                | <b>Project (Number/Name)</b><br>CF3 / <i>Integrated Soldier Systems (SL CFT)</i> |                       |                         |                   |
| <b>COST (\$ in Millions)</b>                                       | <b>Prior Years</b> | <b>FY 2020</b> | <b>FY 2021</b> | <b>FY 2022 Base</b> | <b>FY 2022 OCO</b>  | <b>FY 2022 Total</b> | <b>FY 2023</b> | <b>FY 2024</b> | <b>FY 2025</b>   | <b>FY 2026</b>        | <b>Cost To Complete</b> | <b>Total Cost</b> |
| CF3: <i>Integrated Soldier Systems (SL CFT)</i>                    | -                  | 6.818          | 4.429          | 4.371               | -   | 4.371                | -              | -              | -  | -                     | -                       | -                 |
| Quantity of RDT&E Articles   | -                  | -              | -              | -                   | -   | -                    | -              | -              | -  | -                     |                         |                   |

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

The Adaptive Squad Architecture (ASA), Squad Performance Metrics (SPM) and Soldier Integration Facility (SIF) are Program Executive Office-Soldier (PEO-S) led efforts which will allow optimization of "Soldiers as Integrated Weapons Systems" and "Squad as an Integrated Combat Platform". The CF3 ASA focus will be the system-of-systems full virtual integration of all mission-specific equipment as well as full configuration management of the Configuration Database (CD), Architecture Assessment Tool (AAT) (ASA/SPM/SIF CF2 focuses on system level virtual, constructive and live prototyping integration). The SPM SF3 focus is adapting mature technologies and metrics at the Soldier and Squad levels to enhance human performance during training and operational events. The SIF CF3 focus is both team and squad level constructive and live experimentation to support ongoing PEO-S and Soldier Lethality Cross Functional Team optimization priorities. The ASA/SPM/SIF will develop a metric-based approach that will include virtual, constructive and live evaluations and tools across the Department of Defense (DoD), academia and industry which will be used for senior leaders to make deliberate decisions based on the analysis of Soldier/Squad performance. Funding for this project aligns with the Army's priorities in support of the National Defense Strategy and is a priority of the Soldier Lethality Cross Functional Team.

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

|   | <b>FY 2020</b> | <b>FY 2021</b> | <b>FY 2022</b> |
|---|----------------|----------------|----------------|
| <b>Title:</b> Integrated Soldier Systems  | 6.818          | 4.429          | 4.371          |
| <b>Description:</b> Test, maintain and evolve a Soldier/squad equipment configuration baseline and conduct configuration management at the system level. Physically integrate components, improve compatibility and interoperability across programs. Establish and maintain tools that provide Systems Engineering, Configuration Management and Evaluation in a virtual and physical environment. Conduct Squad Performance Metric (SPM) evaluations and integrate mission-specific equipment into the Adaptive Squad Architecture (ASA) with continued emphasis on development of ICDs, evaluations, and improved fidelity of the SPM. |                |                |                |
| <b>FY 2021 Plans:</b><br>Continue the integration of mission-specific equipment with other combat platforms into initial version of ASA. Continue evaluations in support of the SPM.  |                |                |                |
| <b>FY 2022 Plans:</b><br>Continue to develop and integrate mission-specific equipment with other combat platforms into initial version of ASA.  |                |                |                |
| <b>FY 2021 to FY 2022 Increase/Decrease Statement:</b><br>FY22 Decrease due to reduction in overall funding.  |                |                |                |
| <b>Accomplishments/Planned Programs Subtotals</b>   | 6.818          | 4.429          | 4.371          |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Army | <b>Date:</b> May 2021 |
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| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>CF3 / <i>Integrated Soldier Systems (SL CFT)</i> |
|--|---|--|

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

| <u>Line Item</u>  | <u>FY 2020</u> | <u>FY 2021</u> | <u>FY 2022</u><br><u>Base</u> | <u>FY 2022</u><br><u>OCO</u> | <u>FY 2022</u><br><u>Total</u> | <u>FY 2023</u> | <u>FY 2024</u> | <u>FY 2025</u> | <u>FY 2026</u> | <u>Cost To</u><br><u>Complete</u> | <u>Total Cost</u> |
|---|----------------|----------------|-------------------------------|------------------------------|--------------------------------|----------------|----------------|----------------|----------------|-----------------------------------|-------------------|
| • CF2: <i>Integrated Soldier Systems Prototyping (SL CFT)</i> | 1.878          | 2.449          | 3.111                         | -                            | 3.111                          | -              | -              | -              | -              | -                                 | -                 |

**Remarks**

**D. Acquisition Strategy**

PEO Soldier will utilize available Adaptive Squad Architecture (ASA) and Squad Performance Metrics (SPM) tools plus exercise the SIF with Team level and Squad level experimentation to assess system-of-systems capabilities for evaluation and integration, using current Systems Engineering and Technical Assistance (SETA) contracts, Federally Funded Research and Development Center personnel (FFRDCs) as necessary, plus tools/deliverables built under project CF2. The ASA/SPM/SIF will develop a metric-based approach that will include virtual, constructive and live evaluations and tools across the Department of Defense (DoD), academia and industry which will be used for senior leaders to make deliberate decisions based on the analysis of Soldier/Squad performance. The PEO will utilize project CF3 to leverage any data, architectural products or designs from the IVAS program and other PEO-S and Soldier Lethality Cross Functional Team priorities.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Army** **Date:** May 2021

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| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>CF3 / <i>Integrated Soldier Systems (SL CFT)</i> |
|--|---|--|

| <b>Management Services (\$ in Millions)</b> |                        |                                |             | FY 2020 |            | FY 2021 |            | FY 2022 Base |            | FY 2022 OCO |            | FY 2022 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|------------------------|--------------------------------|-------------|---------|------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| Cost Category Item                          | Contract Method & Type | Performing Activity & Location | Prior Years | Cost    | Award Date | Cost    | Award Date | Cost         | Award Date | Cost        | Award Date | Cost          |                  |            |                          |
| FY 2022 SBIR/STTR Transfer                  | TBD                    | Various : Various              | -           | -       |            | -       |            | 0.219        |            | -           |            | 0.219         | 0.000            | 0.219      | -                        |
| <b>Subtotal</b>                             |                        |                                | -           | -       |            | -       |            | 0.219        |            | -           |            | 0.219         | 0.000            | 0.219      | N/A                      |

| <b>Product Development (\$ in Millions)</b>         |                        |                                |             | FY 2020 |            | FY 2021 |            | FY 2022 Base |            | FY 2022 OCO |            | FY 2022 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|------------------------|--------------------------------|-------------|---------|------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| Cost Category Item                                  | Contract Method & Type | Performing Activity & Location | Prior Years | Cost    | Award Date | Cost    | Award Date | Cost         | Award Date | Cost        | Award Date | Cost          |                  |            |                          |
| ASA and SPM Engineering, Manufacturing, Development | MIPR                   | TBD : Various                  | -           | 4.735   | Jan 2020   | 1.711   | Jan 2021   | 0.886        | Jan 2022   | -           |            | 0.886         | 0.000            | 7.332      | -                        |
| <b>Subtotal</b>                                     |                        |                                | -           | 4.735   |            | 1.711   |            | 0.886        |            | -           |            | 0.886         | 0.000            | 7.332      | N/A                      |

| <b>Test and Evaluation (\$ in Millions)</b> |                        |                                |             | FY 2020 |            | FY 2021 |            | FY 2022 Base |            | FY 2022 OCO |            | FY 2022 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|------------------------|--------------------------------|-------------|---------|------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| Cost Category Item                          | Contract Method & Type | Performing Activity & Location | Prior Years | Cost    | Award Date | Cost    | Award Date | Cost         | Award Date | Cost        | Award Date | Cost          |                  |            |                          |
| ASA/SPM/SIF evaluations                     | MIPR                   | Various : To Be Determined     | -           | 2.083   | Jan 2020   | 2.718   | Jan 2021   | 3.266        | Jan 2022   | -           |            | 3.266         | 0.000            | 8.067      | -                        |
| <b>Subtotal</b>                             |                        |                                | -           | 2.083   |            | 2.718   |            | 3.266        |            | -           |            | 3.266         | 0.000            | 8.067      | N/A                      |

|                            |  |  | Prior Years | FY 2020 | FY 2021 | FY 2022 Base | FY 2022 OCO | FY 2022 Total | Cost To Complete | Total Cost | Target Value of Contract |
|----------------------------|--|--|-------------|---------|---------|--------------|-------------|---------------|------------------|------------|--------------------------|
| <b>Project Cost Totals</b> |  |  | -           | 6.818   | 4.429   | 4.371        | -           | 4.371         | 0.000            | 15.618     | N/A                      |

**Remarks**

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

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| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>CF3 / <i>Integrated Soldier Systems (SL CFT)</i> |
|--|---|--|

| Event Name      | 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 |
| ASA Integration |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| SPM Evaluations |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|                 |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |

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| <b>Exhibit R-4A, RDT&amp;E Schedule Details: PB 2022 Army</b> |   | <b>Date: May 2021</b>  |
| <b>Appropriation/Budget Activity</b><br>2040 / 5              | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>CF3 / <i>Integrated Soldier Systems (SL CFT)</i> |

Schedule Details

| Events          | Start   |      | End     |      |
|-----------------|---------|------|---------|------|
|                 | Quarter | Year | Quarter | Year |
| ASA Integration | 2       | 2020 | 4       | 2026 |
| SPM Evaluations | 2       | 2020 | 4       | 2026 |

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

| Appropriation/Budget Activity<br>2040 / 5      |             |         |         |              | R-1 Program Element (Number/Name)<br>PE 0604601A / Infantry Support Weapons |               |         |         | Project (Number/Name)<br>ES9 / Advanced Tactical Parachute System |         |                  |            |
|--|-------------|---------|---------|--------------|---|---------------|---------|---------|---|---------|------------------|------------|
| 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 |
| ES9: <i>Advanced Tactical Parachute System</i> | -           | 6.345   | 1.761   | 2.705        | -   | 2.705         | -       | -       | -   | -       | -                | -          |
| Quantity of RDT&E Articles                     | -           | -       | -       | -            | -   | -             | -       | -       | -   | -       |                  |            |

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

Funding in this project supports the Army's Cross Functional Teams (CFT) initiatives. Advanced Tactical Parachute System funding improves Low Altitude and High Altitude personnel parachutes and associated equipment to include test and evaluation of items transitioning from Advanced Component Development and prototype (6.4) efforts, with the goal of enhancing the insertion capability and safety of the airborne Soldier and increasing the performance, reliability, and durability of personnel airdrop equipment. Funds improvements and testing/evaluation of personnel parachute systems includes integration and interface on the Soldier system. This project will continue to support cross-service initiatives to improve commonality.

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

|   | FY 2020 | FY 2021 | FY 2022 |
|---|---------|---------|---------|
| <b>Title:</b> Advanced Tactical Parachute System  | 6.345   | 1.761   | 2.705   |
| <b>Description:</b> Advanced Tactical Parachute System funds improvements and testing/evaluation of personnel parachute systems. Project supports improved Low Altitude and High Altitude personnel parachute systems and associated equipment to include test and evaluation of items transitioning from Advance Component Development and prototype (6.4) efforts, with the goal of enhancing the insertion capability and safety of the airborne Soldier and increasing the performance, reliability, and durability of personnel airdrop equipment.   |         |         |         |
| <b>FY 2021 Plans:</b><br>Complete Operational Testing (OT) for the Enhanced Electronic Automatic Activation Device (EEAAD) in support of MS C decision and Full Material Release (FMR). Initiate program to develop Parachutist Emergency Release System (PERS). Continue to conduct testing for service life extension for T-11 parachutes, automated parachute management tracking system integration for personnel parachute systems, and upgrades to support enhanced standoff parachute insertion capabilities. Continue software improvements for the Parachutist Navigation System (PARANAVSYS) and continue to conduct OT for Parachutist Flotation Device (PFD). |         |         |         |
| <b>FY 2022 Plans:</b><br>Initiate Developmental Testing (DT) for PERS. Continue to conduct testing for service life extension for the T-11 parachute. Enhance high and low altitude insertion capabilities, software improvements for PARANAVSYS, and continue to support modernization initiatives to parachute systems and ancillary equipment.   |         |         |         |
| <b>FY 2021 to FY 2022 Increase/Decrease Statement:</b>  |         |         |         |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Army | <b>Date:</b> May 2021 |
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|  |   |   |
|--|---|---|
| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>ES9 / <i>Advanced Tactical Parachute System</i> |
|--|---|---|

|  |                |                |                |
|--|----------------|----------------|----------------|
| <b>B. Accomplishments/Planned Programs (\$ in Millions)</b>  | <b>FY 2020</b> | <b>FY 2021</b> | <b>FY 2022</b> |
| Funding increase in Advanced Tactical Parachute System portfolio is due to anticipated requirements changes in FY2022. |                |                |                |
| <b>Accomplishments/Planned Programs Subtotals</b>  | 6.345          | 1.761          | 2.705          |

|  |                |                |                         |                        |                          |                |                |                |                |                             |                   |
|--|----------------|----------------|-------------------------|------------------------|--------------------------|----------------|----------------|----------------|----------------|-----------------------------|-------------------|
| <b>C. Other Program Funding Summary (\$ in Millions)</b> |                |                |                         |                        |                          |                |                |                |                |                             |                   |
| <b>Line Item</b>   | <b>FY 2020</b> | <b>FY 2021</b> | <b>FY 2022<br/>Base</b> | <b>FY 2022<br/>OCO</b> | <b>FY 2022<br/>Total</b> | <b>FY 2023</b> | <b>FY 2024</b> | <b>FY 2025</b> | <b>FY 2026</b> | <b>Cost To<br/>Complete</b> | <b>Total Cost</b> |
| • MA7801: <i>Advanced Tactical Parachute System</i>      | 42.622         | 53.021         | 38.159                  | -                      | 38.159                   | -              | -              | -              | -              | -                           | -                 |
| • ET8: <i>Personnel Airdrop System Development</i>       | 0.285          | 1.219          | 1.155                   | -                      | 1.155                    | -              | -              | -              | -              | -                           | -                 |

**Remarks**

**D. Acquisition Strategy**  
 Acquisition strategies for these programs vary in methods, and range from: 1) Material Change programs that result in engineering changes to existing systems to; 2) Traditional development programs that include an Engineering and Manufacturing Development phase ranging in duration from 12 to 48 months, depending on the level of complexity and testing required.

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| Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Army |                        |                                |             |  |            |         |            |  |            |             |            | Date: May 2021 |                  |            |                          |  |
|--|------------------------|--------------------------------|-------------|--|------------|---------|------------|--|------------|-------------|------------|----------------|------------------|------------|--------------------------|--|
| Appropriation/Budget Activity                          |                        |                                |             | R-1 Program Element (Number/Name)      |            |         |            | Project (Number/Name)                    |            |             |            |                |                  |            |                          |  |
| 2040 / 5   |                        |                                |             | PE 0604601A / Infantry Support Weapons |            |         |            | ES9 / Advanced Tactical Parachute System |            |             |            |                |                  |            |                          |  |
| <b>Product Development (\$ in Millions)</b>            |                        |                                |             | FY 2020                                |            | FY 2021 |            | FY 2022 Base                             |            | FY 2022 OCO |            | FY 2022 Total  |                  |            |                          |  |
| Cost Category Item                                     | Contract Method & Type | Performing Activity & Location | Prior Years | Cost                                   | Award Date | Cost    | Award Date | Cost                                     | Award Date | Cost        | Award Date | Cost           | Cost To Complete | Total Cost | Target Value of Contract |  |
| Dev Contracts  | C/FFP                  | Various : Various              | 8.571       | 2.240                                  |            | 0.455   |            | 0.823                                    |            | -           |            | 0.823          | 6.335            | 18.424     | Continuing               |  |
| Dev Sys Engineering Spt                                | MIPR                   | Various : Various              | 0.600       | 0.450                                  |            | 0.700   |            | 0.348                                    |            | -           |            | 0.348          | 1.190            | 3.288      | Continuing               |  |
| <b>Subtotal</b>  |                        |                                | 9.171       | 2.690                                  |            | 1.155   |            | 1.171                                    |            | -           |            | 1.171          | 7.525            | 21.712     | N/A                      |  |
| <b>Support (\$ in Millions)</b>                        |                        |                                |             | FY 2020                                |            | FY 2021 |            | FY 2022 Base                             |            | FY 2022 OCO |            | FY 2022 Total  |                  |            |                          |  |
| Cost Category Item                                     | Contract Method & Type | Performing Activity & Location | Prior Years | Cost                                   | Award Date | Cost    | Award Date | Cost                                     | Award Date | Cost        | Award Date | Cost           | Cost To Complete | Total Cost | Target Value of Contract |  |
| Program Office Support Costs                           | MIPR                   | NSRDEC : Natick, MA            | 0.966       | 0.434                                  |            | 0.306   |            | 0.293                                    |            | -           |            | 0.293          | 0.491            | 2.490      | Continuing               |  |
| <b>Subtotal</b>  |                        |                                | 0.966       | 0.434                                  |            | 0.306   |            | 0.293                                    |            | -           |            | 0.293          | 0.491            | 2.490      | N/A                      |  |
| <b>Test and Evaluation (\$ in Millions)</b>            |                        |                                |             | FY 2020                                |            | FY 2021 |            | FY 2022 Base                             |            | FY 2022 OCO |            | FY 2022 Total  |                  |            |                          |  |
| Cost Category Item                                     | Contract Method & Type | Performing Activity & Location | Prior Years | Cost                                   | Award Date | Cost    | Award Date | Cost                                     | Award Date | Cost        | Award Date | Cost           | Cost To Complete | Total Cost | Target Value of Contract |  |
| DT/OT  | MIPR                   | various : various              | 4.149       | 3.221                                  |            | 0.300   |            | 1.241                                    |            | -           |            | 1.241          | 4.913            | 13.824     | Continuing               |  |
| <b>Subtotal</b>  |                        |                                | 4.149       | 3.221                                  |            | 0.300   |            | 1.241                                    |            | -           |            | 1.241          | 4.913            | 13.824     | N/A                      |  |
| <b>Project Cost Totals</b>                             |                        |                                | 14.286      | 6.345                                  |            | 1.761   |            | 2.705                                    |            | -           |            | 2.705          | 12.929           | 38.026     | N/A                      |  |
| <b>Remarks</b>   |                        |                                |             |  |            |         |            |  |            |             |            |                |                  |            |                          |  |

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

|  |   |   |
|--|---|---|
| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>ES9 / <i>Advanced Tactical Parachute System</i> |
|--|---|---|

| Event Name   | 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 |
| Enhanced Electronic Auto Activation Device (EEAAD) Dev |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| EEAAD Milestone C                                      |         |   |   |   |         |   |   |   | ▲ 4     |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| T-11/MC-6 Service Life Enhancements                    |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| PFD Development  |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| PFD Milestone C  |         |   |   |   |         |   |   |   | ▲ 2     |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Evaluate T-11R Pack Tray Modifications                 |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| PNS Software Improvements                              |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| High Altitude Insertion Enhancements                   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Parachutist Emergency Release System (PERS) MDD        |         |   |   |   | ▲ 1     |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| PERS Development                                       |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| PERS Milestone C                                       |         |   |   |   |         |   |   |   |         |   |   |   | ▲ 5     |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| T-11R Automatic Activation Device (AAD) Milestone B    |         |   |   |   |         |   |   |   | ▲ 3     |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| T-11R AAD Development                                  |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |

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

|  |   |   |
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| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>ES9 / <i>Advanced Tactical Parachute System</i> |
|--|---|---|

| Event Name   | 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 |
| T-11R AAD Milestone C                                    |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   | 6 ▲     |   |   |   |         |   |   |   |
| Develop and Test Smart Universal Static line Hook (SUSH) |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Next Generation Low Altitude Parachute System            |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |

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

|  |   |   |
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| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>ES9 / <i>Advanced Tactical Parachute System</i> |
|--|---|---|

Schedule Details

| Events   | Start   |      | End     |      |
|--|---------|------|---------|------|
|  | Quarter | Year | Quarter | Year |
| Enhanced Electronic Auto Activation Device (EEAAD) Dev   | 1       | 2019 | 4       | 2021 |
| EEAAD Milestone C  | 3       | 2022 | 3       | 2022 |
| T-11/MC-6 Service Life Enhancements                      | 1       | 2019 | 4       | 2022 |
| PFD Development  | 3       | 2019 | 4       | 2021 |
| PFD Milestone C  | 1       | 2022 | 1       | 2022 |
| Evaluate T-11R Pack Tray Modifications                   | 1       | 2020 | 1       | 2021 |
| PNS Software Improvements                                | 1       | 2020 | 4       | 2026 |
| High Altitude Insertion Enhancements                     | 1       | 2019 | 4       | 2025 |
| Parachutist Emergency Release System (PERS) MDD          | 2       | 2021 | 2       | 2021 |
| PERS Development   | 2       | 2021 | 4       | 2022 |
| PERS Milestone C   | 1       | 2023 | 1       | 2023 |
| T-11R Automatic Activation Device (AAD) Milestone B      | 1       | 2022 | 1       | 2022 |
| T-11R AAD Development                                    | 1       | 2022 | 4       | 2025 |
| T-11R AAD Milestone C                                    | 1       | 2026 | 1       | 2026 |
| Develop and Test Smart Universal Static line Hook (SUSH) | 1       | 2023 | 4       | 2024 |
| Next Generation Low Altitude Parachute System            | 1       | 2024 | 4       | 2026 |

**Note**

Note: Towed Jumper Retrieval System (TJRS) is now Parachutist Emergency Release System (PERS).

High Altitude Insertion Enhancements includes the following programs: Glide Augmentation, Situational Awareness Aids, High Altitude Combo Drops, GPS Denied Navaid, Glide Modulation, C-17 Over the Ramp (OTR), Riser Improvement, Above 25K Operations, Low Observables, and Reserve Deployment Bag.

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|--|--------------------|----------------|----------------|---------------------|---|----------------------|----------------|----------------|--|-----------------------|-------------------------|-------------------|
| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Army |                    |                |                |                     |   |                      |                |                |  | <b>Date:</b> May 2021 |                         |                   |
| <b>Appropriation/Budget Activity</b><br>2040 / 5                   |                    |                |                |                     | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> |                      |                |                | <b>Project (Number/Name)</b><br>EW4 / <i>Crew Served Weapons Engineering Development</i> |                       |                         |                   |
| <b>COST (\$ in Millions)</b>                                       | <b>Prior Years</b> | <b>FY 2020</b> | <b>FY 2021</b> | <b>FY 2022 Base</b> | <b>FY 2022 OCO</b>  | <b>FY 2022 Total</b> | <b>FY 2023</b> | <b>FY 2024</b> | <b>FY 2025</b>   | <b>FY 2026</b>        | <b>Cost To Complete</b> | <b>Total Cost</b> |
| EW4: <i>Crew Served Weapons Engineering Development</i>            | -                  | 3.982          | 9.608          | 2.443               | -   | 2.443                | -              | -              | -  | -                     | -                       | -                 |
| Quantity of RDT&E Articles   | -                  | -              | -              | -                   | -   | -                    | -              | -              | -  | -                     |                         |                   |

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

The Crew Served Weapons Engineering and Manufacturing Development (EMD) program provides funds to transition components or prototypes from Budget Activity 4 (BA 4) Program Element (PE) 0603827A Soldier Systems - Advanced Development Project S54 Small Arms Improvement and other domestic and foreign sources of small arms weapon systems to demonstrate, test and evaluate capability near or at planned operational requirements. Crew Served Weapons systems include weapons ranging up to 40 millimeter in caliber. Current and future efforts focus on system improvements designed to enhance lethality, target acquisition, fire control, usability, training effectiveness and reliability of weapons to include ammunition when developing and/or evaluating standard and non-standard weapons. Focus areas include system development, integration (to include human-systems), demonstration, test and evaluate components, prototypes and operational system prototypes of small arms weapon systems and/or enhancements. Benefits include continuous improvements to small arms weapon systems, fire control equipment, optics, gun barrels, ancillary equipment, training devices, component mounts, weapon mounts, and weapon/ammunition interface of current small arms fleet or new weapon systems.

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

|  | <b>FY 2020</b> | <b>FY 2021</b> | <b>FY 2022</b> |
|--|----------------|----------------|----------------|
| <b>Title:</b> Design and Development   | -              | 1.813          | 1.193          |
| <b>FY 2021 Plans:</b>  |                |                |                |
| M3/M3E1 Multi-Role Anti-Armor Anti-Personnel Weapon System (MAAWS): Start operational and qualification test efforts required to obtain Type Classification and Full Materiel Release (TC/FMR) of the M3E1 and Fire Control. Continue to evaluate, test and qualify selected capabilities and improvements for the M3E1 weapon and Fire Control systems to include Smart Rail integration and Fire Control thermal magnification efforts.    |                |                |                |
| Ammunition Upgrades: Continue to test, evaluate and analyze the effect of current and new ammunition on Crew Served Weapons. Specific focus on alignment of requirements between crew served fire control and 40 millimeter (mm) air burst munitions.  |                |                |                |
| Mounted Machinegun Optic (MMO): Utilized for qualification testing supporting Type Classification/Full Materiel Release (primarily Operational Testing and environmental requirement validation) and Test Integrated Product Team support. These funds will also go towards initiating the Pre-Planned Product Improvement for the Mk19 MMO Variant to integrate with the High Explosive Dual Purpose-Airburst (HEDP-AB) programmable round. |                |                |                |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Army   |   | <b>Date:</b> May 2021  |                |                |
| <b>Appropriation/Budget Activity</b><br>2040 / 5   | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>EW4 / <i>Crew Served Weapons Engineering Development</i> |                |                |
| <b>B. Accomplishments/Planned Programs (\$ in Millions)</b>  |   | <b>FY 2020</b>   | <b>FY 2021</b> | <b>FY 2022</b> |
| <p>Advanced Combat Optics: Continue engineering evaluations, verification and validation of weapon optics performance requirements, covert target isolation and hand-off.</p> <p>New and Legacy Weapon Systems Design and Development: Continue to explore new technologies and perform initial evaluations and assessments required to facilitate rapid acquisition of increased capabilities where applicable.</p> <p><b>FY 2022 Plans:</b><br/>M3/M3E1 Multi-Role Anti-Armor Anti-Personnel Weapon System (MAAWS): Will complete all operational and qualification test efforts required to obtain Type Classification and Full Materiel Release (TC/FMR) of the M3E1 and Fire Control. Will continue to evaluate, test and qualify selected capabilities and improvements for the M3E1 weapon and Fire Control systems to include Smart Rail integration and Fire Control thermal magnification efforts.</p> <p>Mounted Machinegun Optic (MMO): Will continue MMO pre-planned product improvement (PPPI) R&amp;D efforts for integration with High Explosive Dual Purpose (HEDP) airburst programmer ammo.</p> <p>Advanced Combat Optics: Will continue engineering evaluations, verification and validation of weapon optics performance requirements, covert target isolation and hand-off.</p> <p>New and Legacy Weapon Systems Design and Development: Will continue to explore new technologies and perform initial evaluations and assessments required to facilitate rapid acquisition of increased capabilities where applicable.</p> <p><b>FY 2021 to FY 2022 Increase/Decrease Statement:</b><br/>FY22 Decrease due to reduction in overall funding.</p> |   |  |                |                |
| <p><b>Title:</b> Test and Evaluation</p> <p><b>FY 2021 Plans:</b><br/>New and Legacy Weapon Test and Evaluation: Continue to test and evaluation new technology that can lead to enhancements of current and legacy weapon systems or create new weapon systems, as well as advanced combat optics and improvement of small arms munitions.</p> <p><b>FY 2022 Plans:</b><br/>New and Legacy Weapon Test and Evaluation: Will continue to test and evaluation new technology that can lead to enhancements of current and legacy weapon systems or create new weapon systems, as well as advanced combat optics and improvement of small arms munitions.</p> <p><b>FY 2021 to FY 2022 Increase/Decrease Statement:</b></p>  |   | -  | 2.295          | 1.250          |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Army   |   | <b>Date:</b> May 2021  |                |                |
| <b>Appropriation/Budget Activity</b><br>2040 / 5   | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>EW4 / <i>Crew Served Weapons Engineering Development</i> |                |                |
| <b>B. Accomplishments/Planned Programs (\$ in Millions)</b>  |   | <b>FY 2020</b>   | <b>FY 2021</b> | <b>FY 2022</b> |
| FY22 Decrease due to reduction in overall funding.   |   |  |                |                |
| <b>Title:</b> New Weapon Systems<br><b>Description:</b> Development of new crew served weapons   |   | 1.191  | -              | -              |
| <b>Title:</b> Crew Served Weapons Enhancements<br><b>Description:</b> Enhancements and developments of Crew Served weapons   |   | 0.810  | -              | -              |
| <b>Title:</b> Ammunition<br><b>Description:</b> Improvement of Crew Served Weapons Ammunition  |   | 0.025  | -              | -              |
| <b>Title:</b> Combat Optics<br><b>Description:</b> Improvement of Combat Optics  |   | 0.421  | -              | -              |
| <b>Title:</b> Research and Analysis<br><b>Description:</b> Market Research and Cost Benefit Analysis   |   | 0.035  | -              | -              |
| <b>Accomplishments/Planned Programs Subtotals</b>  |   | 2.482  | 4.108          | 2.443          |
|  |   | <b>FY 2020</b>   | <b>FY 2021</b> |                |
| <b>Congressional Add:</b> FY 2020 Congressional Add: Cannon Life Extension Program<br><b>FY 2020 Accomplishments:</b> Develop a full length medium, and small caliber chromium free manufacturing process to extend the life of barrels, cut costs, and enhance the warfighter's lethality requirements. Develop manufacturing technologies that enable the affordable production and sustainment of future weapon systems. Utilize an explosive cladding process to apply a tantalum tungsten alloy (Ta-10W) protective bore coating. |   | 1.500  | 1.500          |                |
| <b>FY 2021 Plans:</b> Advance and optimize the explosive bonding process of tantalum-tungsten alloy liners to create improved, longer life small and medium caliber barrels. Investigate alternative rifling methods (i.e. pressure form, roller form, waterjet) for tantalum lined barrels. Develop manufacturing technologies that enable the affordable production and sustainment of future weapon systems.  |   |  |                |                |
| <b>Congressional Add:</b> Program increase - turret gunner survivability and simulation environment  |   | -  | 4.000          |                |

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

|  |   |  |
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| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>EW4 / <i>Crew Served Weapons Engineering Development</i> |
|--|---|--|

|   |                |                |
|---|----------------|----------------|
|   | <b>FY 2020</b> | <b>FY 2021</b> |
| <b>FY 2021 Plans:</b> Develop smart, full-scale, virtual and augmented reality simulation environments for next-generation of Gunner protection kits that will significantly enhance the operational evaluation of turret designs in a secure, immersive, navigable, and interactive arena. |                |                |
| Develop and install simulation environments that will lead to advanced and affordable engineered solutions while accelerating the development lifecycle through reduced design iterations and physical prototyping.   |                |                |
| <b>Congressional Adds Subtotals</b>   | 1.500          | 5.500          |

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

| <u>Line Item</u>  | <u>FY 2020</u> | <u>FY 2021</u> | <u>FY 2022</u><br><u>Base</u> | <u>FY 2022</u><br><u>OCO</u> | <u>FY 2022</u><br><u>Total</u> | <u>FY 2023</u> | <u>FY 2024</u> | <u>FY 2025</u> | <u>FY 2026</u> | <u>Cost To</u><br><u>Complete</u> | <u>Total Cost</u> |
|---|----------------|----------------|-------------------------------|------------------------------|--------------------------------|----------------|----------------|----------------|----------------|-----------------------------------|-------------------|
| • S54: <i>Small Arms Improvement</i>                                | 13.956         | 15.495         | 6.911                         | -                            | 6.911                          | -              | -              | -              | -              | -                                 | -                 |
| • FL8: <i>84mm MAAWS Ammunition</i>                                 | 3.874          | 3.017          | 6.117                         | -                            | 6.117                          | -              | -              | -              | -              | -                                 | -                 |
| • FM4: <i>Next Generation Squad Weapons</i>                         | 31.719         | 32.001         | 13.599                        | -                            | 13.599                         | -              | -              | -              | -              | -                                 | -                 |
| • GZ1500: <i>Sniper Rifles Modifications</i>                        | 2.426          | 1.898          | -                             | -                            | -                              | -              | -              | -              | -              | -                                 | -                 |
| • GZ1300: <i>M240 Medium Machine Gun MODS</i>                       | 6.400          | 6.385          | -                             | -                            | -                              | -              | -              | -              | -              | -                                 | -                 |
| • GB3000: <i>MK-19 Grenade Machine Gun MODS</i>                     | 4.477          | 6.444          | 13.027                        | -                            | 13.027                         | -              | -              | -              | -              | -                                 | -                 |
| • GB4000: <i>M2 50 Cal Machine Gun MODS</i>                         | 6.090          | -              | 3.612                         | -                            | 3.612                          | -              | -              | -              | -              | -                                 | -                 |
| • GC0925: <i>Modifications Less Than \$5.0m (WOCV-WTCV)</i>         | 5.187          | 2.604          | -                             | -                            | -                              | -              | -              | -              | -              | -                                 | -                 |
| • GL3200: <i>Items Less Than \$5.0m (WOCV-WTCV)</i>                 | 3.066          | 2.763          | 1.068                         | -                            | 1.068                          | -              | -              | -              | -              | -                                 | -                 |
| • G13000: <i>M240 Medium Machine Gun (7.62mm)</i>                   | 12.500         | 12.500         | -                             | -                            | -                              | -              | -              | -              | -              | -                                 | -                 |
| • G01506: <i>Precision Sniper Rifle</i>                             | 5.747          | 8.895          | 11.040                        | -                            | 11.040                         | -              | -              | -              | -              | -                                 | -                 |
| • G13101: <i>MULTI-ROLE ANTI-ARMOR ANTI-PERSONNEL WEAPON SYSTEM</i> | 19.264         | 22.629         | 31.623                        | -                            | 31.623                         | -              | -              | -              | -              | -                                 | -                 |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Army |   | <b>Date:</b> May 2021  |
| <b>Appropriation/Budget Activity</b><br>2040 / 5                   | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>EW4 / <i>Crew Served Weapons Engineering Development</i> |

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

| <u>Line Item</u> | <u>FY 2020</u> | <u>FY 2021</u> | <u>FY 2022</u><br><u>Base</u> | <u>FY 2022</u><br><u>OCO</u> | <u>FY 2022</u><br><u>Total</u> | <u>FY 2023</u> | <u>FY 2024</u> | <u>FY 2025</u> | <u>FY 2026</u> | <u>Cost To</u><br><u>Complete</u> | <u>Total Cost</u> |
|------------------|----------------|----------------|-------------------------------|------------------------------|--------------------------------|----------------|----------------|----------------|----------------|-----------------------------------|-------------------|
|------------------|----------------|----------------|-------------------------------|------------------------------|--------------------------------|----------------|----------------|----------------|----------------|-----------------------------------|-------------------|

**Remarks**

In support of Small Arms Requirements, components or prototypes developed in BA 4 PE 0603827A Soldier Systems - Advanced Development Project S54 Small Arms Improvement transition to BA 5 PE 0604601A Infantry Support Weapons Project EW4 Crew Served Weapons Engineering Development to conduct engineering and manufacturing development. Once the component, prototype or operational prototype achieves Milestone C and type classification the item transitions to small arms weapon systems production or modification programs.

In FY 2022, funding in the amount of \$0.366 million for manpower was realigned to Operations and Maintenance. Program support costs have been accurately updated to reflect the realignments.

**D. Acquisition Strategy**

Primary strategy is to mature and finalize design efforts, award Research, Development, Test and Evaluation (RDT&E) Department of Defense Ordnance Technology Consortium (DOTC) and other OTA type hardware contracts. Test and evaluate systems that result in type classification, material release, and follow-on production contract awards.

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| Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Army |                        |  |             |  |            |         |            |   |            |             |            | Date: May 2021 |                  |            |                          |
|--|------------------------|--|-------------|--|------------|---------|------------|---|------------|-------------|------------|----------------|------------------|------------|--------------------------|
| Appropriation/Budget Activity                          |                        |  |             | R-1 Program Element (Number/Name)      |            |         |            | Project (Number/Name)                             |            |             |            |                |                  |            |                          |
| 2040 / 5   |                        |  |             | PE 0604601A / Infantry Support Weapons |            |         |            | EW4 / Crew Served Weapons Engineering Development |            |             |            |                |                  |            |                          |
| Management Services (\$ in Millions)                   |                        |  |             | FY 2020                                |            | FY 2021 |            | FY 2022 Base                                      |            | FY 2022 OCO |            | FY 2022 Total  |                  |            |                          |
| Cost Category Item                                     | Contract Method & Type | Performing Activity & Location                           | Prior Years | Cost                                   | Award Date | Cost    | Award Date | Cost  | Award Date | Cost        | Award Date | Cost           | Cost To Complete | Total Cost | Target Value of Contract |
| Program Management                                     | Allot                  | PM Soldier Weapons, : Picatinny Arsenal                  | 1.766       | -                                      |            | -       |            | 0.100   |            | -           |            | 0.100          | Continuing       | Continuing | Continuing               |
| Travel   | MIPR                   | PM Soldier Weapons, : Picatinny Arsenal                  | 0.355       | 0.010                                  | Mar 2020   | 0.013   | Mar 2021   | 0.010   | Mar 2022   | -           |            | 0.010          | Continuing       | Continuing | Continuing               |
| FY2019 SBIR / STTR Transfer                            | FFRDC                  | Army Budget Office : Pentagon, Washington DC             | 0.984       | -                                      |            | -       |            | -   |            | -           |            | -              | Continuing       | Continuing | Continuing               |
| <b>Subtotal</b>  |                        |  | 3.105       | 0.010                                  |            | 0.013   |            | 0.110   |            | -           |            | 0.110          | Continuing       | Continuing | N/A                      |
| Product Development (\$ in Millions)                   |                        |  |             | FY 2020                                |            | FY 2021 |            | FY 2022 Base                                      |            | FY 2022 OCO |            | FY 2022 Total  |                  |            |                          |
| Cost Category Item                                     | Contract Method & Type | Performing Activity & Location                           | Prior Years | Cost                                   | Award Date | Cost    | Award Date | Cost  | Award Date | Cost        | Award Date | Cost           | Cost To Complete | Total Cost | Target Value of Contract |
| Fabrication  | Various                | Various : Multiple Contractors                           | 4.934       | 0.285                                  | Mar 2020   | 0.300   | Mar 2021   | 0.100   | Mar 2022   | -           |            | 0.100          | Continuing       | Continuing | Continuing               |
| Hardware Development                                   | MIPR                   | Army Research Development Engineers Centers : Multiple   | 19.855      | 0.035                                  | Mar 2020   | 4.245   | Mar 2021   | 0.977   | Mar 2022   | -           |            | 0.977          | Continuing       | Continuing | Continuing               |
| <b>Subtotal</b>  |                        |  | 24.789      | 0.320                                  |            | 4.545   |            | 1.077   |            | -           |            | 1.077          | Continuing       | Continuing | N/A                      |
| Support (\$ in Millions)                               |                        |  |             | FY 2020                                |            | FY 2021 |            | FY 2022 Base                                      |            | FY 2022 OCO |            | FY 2022 Total  |                  |            |                          |
| Cost Category Item                                     | Contract Method & Type | Performing Activity & Location                           | Prior Years | Cost                                   | Award Date | Cost    | Award Date | Cost  | Award Date | Cost        | Award Date | Cost           | Cost To Complete | Total Cost | Target Value of Contract |
| Engineering  | MIPR                   | Army Research Development Engineering Centers : Multiple | 8.018       | 0.996                                  | Mar 2020   | 0.500   | Mar 2021   | 0.106   | Mar 2022   | -           |            | 0.106          | Continuing       | Continuing | Continuing               |

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| Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Army |                        |   |             |  |            |         |            |   |            |             |            | Date: May 2021 |                  |            |                          |
|--|------------------------|---|-------------|--|------------|---------|------------|---|------------|-------------|------------|----------------|------------------|------------|--------------------------|
| Appropriation/Budget Activity                          |                        |   |             | R-1 Program Element (Number/Name)      |            |         |            | Project (Number/Name)                             |            |             |            |                |                  |            |                          |
| 2040 / 5   |                        |   |             | PE 0604601A / Infantry Support Weapons |            |         |            | EW4 / Crew Served Weapons Engineering Development |            |             |            |                |                  |            |                          |
| Support (\$ in Millions)                               |                        |   |             | FY 2020                                |            | FY 2021 |            | FY 2022 Base                                      |            | FY 2022 OCO |            | FY 2022 Total  |                  |            |                          |
| Cost Category Item                                     | Contract Method & Type | Performing Activity & Location                              | Prior Years | Cost                                   | Award Date | Cost    | Award Date | Cost  | Award Date | Cost        | Award Date | Cost           | Cost To Complete | Total Cost | Target Value of Contract |
| Logistics  | MIPR                   | Tank & Automotive Command (TACOM), : Warren                 | 0.694       | 0.036                                  | Mar 2020   | 0.050   | Mar 2021   | 0.050   | Mar 2022   | -           |            | 0.050          | Continuing       | Continuing | Continuing               |
| Human Research and Engineering                         | MIPR                   | Army Research Laboratory, : Aberdeen Proving Ground         | 0.734       | 0.036                                  | Mar 2020   | 0.050   | Mar 2021   | 0.050   | Mar 2022   | -           |            | 0.050          | Continuing       | Continuing | Continuing               |
| <b>Subtotal</b>  |                        |   | 9.446       | 1.068                                  |            | 0.600   |            | 0.206   |            | -           |            | 0.206          | Continuing       | Continuing | N/A                      |
| Test and Evaluation (\$ in Millions)                   |                        |   |             | FY 2020                                |            | FY 2021 |            | FY 2022 Base                                      |            | FY 2022 OCO |            | FY 2022 Total  |                  |            |                          |
| Cost Category Item                                     | Contract Method & Type | Performing Activity & Location                              | Prior Years | Cost                                   | Award Date | Cost    | Award Date | Cost  | Award Date | Cost        | Award Date | Cost           | Cost To Complete | Total Cost | Target Value of Contract |
| Developmental Testing                                  | MIPR                   | Army Developmental Test Command, : Aberdeen Proving Ground  | 4.083       | 2.485                                  | Mar 2020   | 2.200   | Mar 2021   | 0.500   | Mar 2022   | -           |            | 0.500          | Continuing       | Continuing | Continuing               |
| Operational Testing                                    | MIPR                   | Army Test and Evaluation Command, : Aberdeen Proving Ground | 3.568       | 0.065                                  | Mar 2020   | 2.200   | Mar 2021   | 0.500   | Mar 2022   | -           |            | 0.500          | Continuing       | Continuing | Continuing               |
| Validation Testing                                     | MIPR                   | Army Test and Evaluation Centers, : Multiple                | 0.774       | 0.034                                  | Mar 2020   | 0.050   | Mar 2021   | 0.050   | Mar 2022   | -           |            | 0.050          | Continuing       | Continuing | Continuing               |
| <b>Subtotal</b>  |                        |   | 8.425       | 2.584                                  |            | 4.450   |            | 1.050   |            | -           |            | 1.050          | Continuing       | Continuing | N/A                      |
| <b>Project Cost Totals</b>                             |                        |   | 45.765      | 3.982                                  |            | 9.608   |            | 2.443   |            | -           |            | 2.443          | Continuing       | Continuing | N/A                      |
| <b>Remarks</b>   |                        |   |             |  |            |         |            |   |            |             |            |                |                  |            |                          |

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| <b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2022 Army</b> |   | <b>Date: May 2021</b>  |
| <b>Appropriation/Budget Activity</b><br>2040 / 5             | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>EW4 / <i>Crew Served Weapons Engineering Development</i> |

| Event Name   | 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 |
| <b>DESIGN AND DEVELOPMENT</b>  | [Blue Bar] |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| M3/M3E1 Multi-Role Anti-Armor Anti-Personnel Weapon System               | [Blue Bar] |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Mounted Machinegun Optic (MMO)   | [Blue Bar] |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Adaptive Lubricious Coatings (ALC)                                       | [Blue Bar] |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Externally Powered Weapon  | [Blue Bar] |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Eagle Eye Digital Spotting Scope   | [Blue Bar] |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Enhanced System for Remote Weapon Stations & Kinetic Counter-UAS Weapons | [Blue Bar] |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Weapon Enhancements for Improved Ammunition                              | [Blue Bar] |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Small Business Innovation Research (SBIR) Enhancements                   | [Blue Bar] |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| <b>TEST AND EVALUATION</b>   | [Blue Bar] |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| <b>NEW WEAPON SYSTEMS</b>  | [Blue Bar] |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Precision Sniper Rifle (PSR)   | [Blue Bar] |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| New Weapon Systems Evaluations and Assessments                           | [Blue Bar] |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |

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| <b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2022 Army</b> |   | <b>Date: May 2021</b>  |
| <b>Appropriation/Budget Activity</b><br>2040 / 5             | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>EW4 / <i>Crew Served Weapons Engineering Development</i> |

| Event Name   | 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 |
| <b>CREW SERVED WEAPON ENHANCEMENTS</b>                     |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Increased Barrel Life/Replace Chrome                       |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| M2 Lightweight Program                                     |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Current and Legacy Weapon Improvements                     |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Formerly Weapons Upgrades and Accessories                  |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Gunner Integrated Protection and Restraint Systems (GIPRS) |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| <b>AMMUNITION</b>  |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Ammunition Upgrades  |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| <b>COMBAT OPTICS</b>                                       |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Advanced Combat Optics                                     |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Formerly Optic Upgrades                                    |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| <b>RESEARCH AND ANALYSIS</b>                               |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Research and Analysis                                      |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |

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| <b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2022 Army |   | <b>Date:</b> May 2021  |
| <b>Appropriation/Budget Activity</b><br>2040 / 5              | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>EW4 / <i>Crew Served Weapons Engineering Development</i> |

Schedule Details

| Events   | Start   |      | End     |      |
|--|---------|------|---------|------|
|  | Quarter | Year | Quarter | Year |
| DESIGN AND DEVELOPMENT   | 1       | 2020 | 4       | 2027 |
| M3/M3E1 Multi-Role Anti-Armor Anti-Personnel Weapon System (MAAWS)       | 1       | 2017 | 4       | 2022 |
| Mounted Machinegun Optic (MMO)   | 1       | 2020 | 4       | 2023 |
| Adaptive Lubricious Coatings (ALC)                                       | 1       | 2023 | 4       | 2024 |
| Externally Powered Weapon  | 1       | 2023 | 4       | 2027 |
| Eagle Eye Digital Spotting Scope   | 1       | 2023 | 4       | 2027 |
| Enhanced System for Remote Weapon Stations & Kinetic Counter-UAS Weapons | 1       | 2024 | 4       | 2027 |
| Weapon Enhancements for Improved Ammunition                              | 1       | 2025 | 4       | 2027 |
| Small Business Innovation Research (SBIR) Enhancements                   | 1       | 2017 | 4       | 2027 |
| TEST AND EVALUATION  | 1       | 2020 | 4       | 2027 |
| NEW WEAPON SYSTEMS   | 1       | 2017 | 4       | 2026 |
| Next Generation Squad Weapon-Automatic Rifle                             | 1       | 2019 | 4       | 2019 |
| Precision Sniper Rifle (PSR)   | 1       | 2017 | 4       | 2020 |
| New Weapon Systems Evaluations and Assessments                           | 1       | 2018 | 4       | 2020 |
| CREW SERVED WEAPON ENHANCEMENTS  | 1       | 2017 | 4       | 2020 |
| Compact Semi-Automatic Sniper System (CSASS)                             | 1       | 2017 | 4       | 2019 |
| Increased Barrel Life/Replace Chrome                                     | 1       | 2019 | 4       | 2020 |
| M2 Lightweight Program   | 1       | 2018 | 4       | 2020 |
| Weapons Upgrades and Accessories   | 1       | 2017 | 4       | 2019 |
| Current and Legacy Weapon Improvements                                   | 1       | 2020 | 4       | 2020 |
| Gunner Integrated Protection and Restraint Systems (GIPRS/OGPK)          | 1       | 2017 | 4       | 2021 |
| AMMUNITION   | 1       | 2017 | 4       | 2020 |

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

|  |   |  |
|--|---|--|
| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>EW4 / <i>Crew Served Weapons Engineering Development</i> |
|--|---|--|

| Events  | Start   |      | End     |      |
|---|---------|------|---------|------|
|   | Quarter | Year | Quarter | Year |
| Ammunition Upgrades                                     | 1       | 2017 | 4       | 2020 |
| COMBAT OPTICS   | 1       | 2017 | 4       | 2020 |
| Optic Upgrades  | 1       | 2017 | 4       | 2019 |
| Advanced Combat Optics                                  | 1       | 2020 | 4       | 2020 |
| FIRE CONTROL  | 1       | 2017 | 4       | 2017 |
| Advanced Fire Control with Hyperspectral Target         | 1       | 2017 | 4       | 2017 |
| Advanced Fire Control with Precision Projectile/Dynamic | 1       | 2017 | 4       | 2017 |
| Fire Control Upgrades                                   | 1       | 2017 | 4       | 2017 |
| RESEARCH AND ANALYSIS                                   | 1       | 2017 | 4       | 2020 |
| Research and Analysis                                   | 1       | 2017 | 4       | 2020 |

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

| Appropriation/Budget Activity<br>2040 / 5 |             |         |         |              | R-1 Program Element (Number/Name)<br>PE 0604601A / Infantry Support Weapons |               |         |         | Project (Number/Name)<br>FF2 / Small Arms Fire Control |         |                  |            |
|---|-------------|---------|---------|--------------|---|---------------|---------|---------|--|---------|------------------|------------|
| 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 |
| FF2: Small Arms Fire Control              | -           | 14.095  | 9.782   | 11.107       | -   | 11.107        | -       | -       | -  | -       | -                | -          |
| Quantity of RDT&E Articles                | -           | -       | -       | -            | -   | -             | -       | -       | -  | -       |                  |            |

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

Next Generation Squad Weapon - Fire Control (NGSW-FC) is an advanced fire control device to support the Next Generation Squad Weapons. NGSW-FC increases the probability of hit and decreases the time to engage through a variable powered direct view optic with integrated range finder, ballistic calculator, and digital display capable of providing an adjusted aim point. The NGSW-FC will utilize open architecture to deliver the initial increased core capability followed by increasing increments of capability/enhancements over time as technology matures and evolves.

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

|   | FY 2020 | FY 2021 | FY 2022 |
|---|---------|---------|---------|
| <p><b>Title:</b> Design, Develop and Fabricate</p> <p><b>Description:</b> Includes contract awards for iterative prototyping of all Fire Control configurations, enhancements, and hand held devices.</p> <p><b>FY 2021 Plans:</b><br/>Continue to conduct iterative prototype efforts to design, develop, and fabricate enhancements to the NGSW-FC, conduct technical system engineering reviews, and implementation plans for iterative prototype components. Will award agreements or contracts to conduct iterative prototype efforts.</p> <p><b>FY 2022 Plans:</b><br/>Will continue to conduct iterative prototype efforts to design, develop, and fabricate enhancements to the NGSW-FC, conduct technical system engineering reviews, and implementation plans for iterative prototype components. Will award agreements or contracts to conduct iterative prototype efforts. Capability enhancements to be developed through iterative prototyping that may include technology such as advanced camera based capabilities; optical augmentation; aim augmentation; weapon stabilization; wind sensing; optimization of size, weight, and power; advanced network lethality; advanced ruggedization; and augmented reality.</p> <p><b>FY 2021 to FY 2022 Increase/Decrease Statement:</b><br/>Funding increase due to additional iterative prototype efforts in FY22 to optimize the base NGSW-FC configuration and increase capabilities related to aim augmentation, target tracking, networked lethality, and wind sensing.</p> | 11.400  | 1.727   | 5.796   |
| <p><b>Title:</b> Engineering Support</p> <p><b>Description:</b> Government engineering support, providing oversight of design development and contractor performance.</p> <p><b>FY 2021 Plans:</b></p>  | 1.892   | 3.456   | 2.556   |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Army  |   | <b>Date:</b> May 2021  |                |                |
| <b>Appropriation/Budget Activity</b><br>2040 / 5  | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>FF2 / <i>Small Arms Fire Control</i> |                |                |
| <b>B. Accomplishments/Planned Programs (\$ in Millions)</b>   |   | <b>FY 2020</b>   | <b>FY 2021</b> | <b>FY 2022</b> |
| <p>Continue to provide government engineering support at laboratories and engineering centers, providing design, limited testing and oversight of development and contractor performance. Begin planning and documentation required for iterative prototyping for system enhancements.</p> <p><b>FY 2022 Plans:</b><br/>Will continue to provide government engineering support at laboratories and engineering centers; providing design, limited testing and oversight of development and contractor performance. Continues planning and documentation required for iterative prototyping for system enhancements.</p> <p><b>FY 2021 to FY 2022 Increase/Decrease Statement:</b><br/>Funding increase due to additional engineering support for various iterative prototyping technologies.</p>   |   |  |                |                |
| <p><b>Title:</b> Test and Evaluation</p> <p><b>Description:</b> Government testing and evaluation of prototypes, articles and improvements. Includes Soldier Touch Point evaluations.</p> <p><b>FY 2021 Plans:</b><br/>NGSW-FC prototype systems continue to undergo technical optical lab testing, environmental testing, electromagnetic environment effects (E3) testing, and soldier touch point user evaluations. Continue to conduct all required testing and analysis to support source selection along with production and fielding decision.</p> <p><b>FY 2022 Plans:</b><br/>NGSW-FC will test and evaluate proposed additional capability upgrades resulting from iterative prototyping. Prototypes will undergo technical testing and soldier touch point user evaluations. Conduct Operational Testing to determine the Fire Control Systems' ability to accomplish its designed mission when used by representative personnel as well as to ensure the system can be placed and sustained satisfactorily in the field.</p> <p><b>FY 2021 to FY 2022 Increase/Decrease Statement:</b><br/>Funding increase due to additional testing required to characterize performance of iterative prototyping efforts vs the baseline system.</p> |   | 0.612  | 4.330          | 2.555          |
| <p><b>Title:</b> Program Management</p> <p><b>Description:</b> Program management office non-labor activities, to include travel and other indirect costs.</p> <p><b>FY 2021 Plans:</b></p>   |   | 0.191  | 0.269          | 0.200          |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Army | <b>Date:</b> May 2021 |
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| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>FF2 / <i>Small Arms Fire Control</i> |
|--|---|--|

| <b>B. Accomplishments/Planned Programs (\$ in Millions)</b>   | FY 2020 | FY 2021 | FY 2022 |
|---|---------|---------|---------|
| Continue to provide for administrative costs incurred by the Program Management office, to include travel, contractor service support, and other requirements to support the program.   |         |         |         |
| <b>FY 2022 Plans:</b><br>Will continue to provide for administrative costs incurred by the Program Management office, to include travel, contractor service support, and other requirements to support the program.   |         |         |         |
| <b>FY 2021 to FY 2022 Increase/Decrease Statement:</b><br>Engineering Support increase is due to additional personnel required in FY22 to support the Fire control prototype testing and evaluation efforts.<br>Program Management increase is due to additional non labor requirements such as travel, shipment and tools supporting FY22 testing phase. |         |         |         |
| <b>Accomplishments/Planned Programs Subtotals</b>   | 14.095  | 9.782   | 11.107  |

| <b>C. Other Program Funding Summary (\$ in Millions)</b> |                |                |                               |                              |                                |                |                |                |                |                                   |                   |
|--|----------------|----------------|-------------------------------|------------------------------|--------------------------------|----------------|----------------|----------------|----------------|-----------------------------------|-------------------|
| <u>Line Item</u>   | <u>FY 2020</u> | <u>FY 2021</u> | <u>FY 2022</u><br><u>Base</u> | <u>FY 2022</u><br><u>OCO</u> | <u>FY 2022</u><br><u>Total</u> | <u>FY 2023</u> | <u>FY 2024</u> | <u>FY 2025</u> | <u>FY 2026</u> | <u>Cost To</u><br><u>Complete</u> | <u>Total Cost</u> |
| • S54: <i>Small Arms Improvement</i>                     | 13.956         | 15.495         | 6.911                         | -                            | 6.911                          | -              | -              | -              | -              | -                                 | -                 |
| • G14513: <i>Next Generation</i>                         | -              | 35.822         | 72.595                        | -                            | 72.595                         | -              | -              | -              | -              | -                                 | -                 |
| <i>Squad Weapon - Fire Control</i>                       |                |                |                               |                              |                                |                |                |                |                |                                   |                   |

**Remarks**

**D. Acquisition Strategy**  
The NGSW-FC program is a Middle Tier Acquisition (MTA) program utilizing Rapid Prototyping authority under Section 804 of the FY 2016 National Defense Authorization Act (NDAA). A full and open competition selected two vendors for fixed amount Other Transaction Authority (OTA) awards to mature and finalize system designs and conduct test and evaluation. Upon successful completion of the prototyping effort, the Government will award follow on production contract(s) for the NGSW-FC without further competition. Iterative prototyping RDT&E efforts will continue to support increased capability sets to the NGSW-FC.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Army** **Date:** May 2021

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| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>FF2 / <i>Small Arms Fire Control</i> |
|--|---|--|

| <b>Management Services (\$ in Millions)</b> |                        |                                |             | FY 2020 |            | FY 2021 |            | FY 2022 Base |            | FY 2022 OCO |            | FY 2022 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|------------------------|--------------------------------|-------------|---------|------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| Cost Category Item                          | Contract Method & Type | Performing Activity & Location | Prior Years | Cost    | Award Date | Cost    | Award Date | Cost         | Award Date | Cost        | Award Date | Cost          |                  |            |                          |
| FY 2019 Rescission (0604601A/S62)           | Allot                  | Army Budget Office : Pentagon  | 0.104       | -       |            | -       |            | -            |            | -           |            | -             | 0.000            | 0.104      | -                        |
| <b>Subtotal</b>                             |                        |                                | 0.104       | -       |            | -       |            | -            |            | -           |            | -             | 0.000            | 0.104      | N/A                      |

| <b>Product Development (\$ in Millions)</b>              |                        |  |             | FY 2020 |            | FY 2021 |            | FY 2022 Base |            | FY 2022 OCO |            | FY 2022 Total | Cost To Complete | Total Cost | Target Value of Contract |
|--|------------------------|--|-------------|---------|------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| Cost Category Item                                       | Contract Method & Type | Performing Activity & Location   | Prior Years | Cost    | Award Date | Cost    | Award Date | Cost         | Award Date | Cost        | Award Date | Cost          |                  |            |                          |
| Next Generation Fire Control - Rapid Prototyping OTA     | C/TBD                  | Vortex Optics Army Contracting Command - New Jersey (ACC-NJ) : Picatinny Arsenal, NJ | -           | 5.700   | Apr 2020   | 0.917   | Nov 2021   | -            |            | -           |            | -             | 0.000            | 6.617      | -                        |
| Next Generation Fire Control - Rapid Prototyping OTA     | C/TBD                  | L3 Harris: Army Contracting Command - New Jersey (ACC-NJ) : Picatinny Arsenal, NJ    | -           | 5.700   | Apr 2020   | 0.810   | Nov 2021   | -            |            | -           |            | -             | 0.000            | 6.510      | -                        |
| Next Generation Fire Control - Iterative Prototyping OTA | C/TBD                  | VENDOR TBD : ACC-NJ, Picatinny Arsenal, NJ   | -           | -       |            | -       |            | 5.796        | Apr 2022   | -           |            | 5.796         | Continuing       | Continuing | -                        |
| <b>Subtotal</b>  |                        |  | -           | 11.400  |            | 1.727   |            | 5.796        |            | -           |            | 5.796         | Continuing       | Continuing | N/A                      |

| <b>Support (\$ in Millions)</b> |                        |  |             | FY 2020 |            | FY 2021 |            | FY 2022 Base |            | FY 2022 OCO |            | FY 2022 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---------------------------------|------------------------|--|-------------|---------|------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| Cost Category Item              | Contract Method & Type | Performing Activity & Location   | Prior Years | Cost    | Award Date | Cost    | Award Date | Cost         | Award Date | Cost        | Award Date | Cost          |                  |            |                          |
| Engineering Support             | MIPR                   | Combat Capability Development Command - Armaments Center (CCDC-AC) : Picatinny Arsenal, NJ | 0.570       | 1.892   | Nov 2019   | 3.456   | Nov 2020   | 2.556        | Nov 2021   | -           |            | 2.556         | Continuing       | Continuing | -                        |

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Army** **Date:** May 2021

|  |   |  |
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| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>FF2 / <i>Small Arms Fire Control</i> |
|--|---|--|

| <b>Support (\$ in Millions)</b> |                        |   |             | FY 2020 |            | FY 2021 |            | FY 2022 Base |            | FY 2022 OCO |            | FY 2022 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---------------------------------|------------------------|---|-------------|---------|------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| Cost Category Item              | Contract Method & Type | Performing Activity & Location  | Prior Years | Cost    | Award Date | Cost    | Award Date | Cost         | Award Date | Cost        | Award Date | Cost          |                  |            |                          |
| Program Management (Non-Labor)  | Allot                  | Project Manager Soldier Weapons (PMSW) /Non-Labor : Picatinny Arsenal, NJ | 0.032       | 0.191   | Nov 2019   | 0.269   | Nov 2020   | 0.200        | Nov 2021   | -           |            | 0.200         | Continuing       | Continuing | -                        |
| <b>Subtotal</b>                 |                        |   | 0.602       | 2.083   |            | 3.725   |            | 2.756        |            | -           |            | 2.756         | Continuing       | Continuing | N/A                      |

| <b>Test and Evaluation (\$ in Millions)</b> |                        |  |             | FY 2020 |            | FY 2021 |            | FY 2022 Base |            | FY 2022 OCO |            | FY 2022 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|------------------------|--|-------------|---------|------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| Cost Category Item                          | Contract Method & Type | Performing Activity & Location   | Prior Years | Cost    | Award Date | Cost    | Award Date | Cost         | Award Date | Cost        | Award Date | Cost          |                  |            |                          |
| Test and Evaluation                         | MIPR                   | US Army Test and Evaluation Command (ATEC) : Aberdeen Proving Ground, MD | 0.131       | 0.612   | Mar 2020   | 4.330   | Mar 2021   | 2.555        | Mar 2022   | -           |            | 2.555         | Continuing       | Continuing | -                        |
| <b>Subtotal</b>                             |                        |  | 0.131       | 0.612   |            | 4.330   |            | 2.555        |            | -           |            | 2.555         | Continuing       | Continuing | N/A                      |

|                            |  |  | Prior Years | FY 2020 | FY 2021 | FY 2022 Base | FY 2022 OCO | FY 2022 Total | Cost To Complete | Total Cost | Target Value of Contract |
|----------------------------|--|--|-------------|---------|---------|--------------|-------------|---------------|------------------|------------|--------------------------|
| <b>Project Cost Totals</b> |  |  | 0.837       | 14.095  | 9.782   | 11.107       | -           | 11.107        | Continuing       | Continuing | N/A                      |

**Remarks**

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

|  |   |  |
|--|---|--|
| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>FF2 / <i>Small Arms Fire Control</i> |
|--|---|--|

| Event Name  | 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 |
| <b>Rapid Prototyping - Fire Control</b>                       |         |    |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Other Transaction Agreement (OTA) Award - Rapid Prototyping   |         | ▲1 |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| L3 Harris - Contractor Design and Prototype Fabrication       |         |    |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Vortex Optics- Contractor Design and Prototype Fabrication    |         |    |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Engineering Support - Rapid Prototyping                       |         |    |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Prototype Testing and Evaluation                              |         |    |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Production Decision - NGFC                                    |         |    |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Iterative Prototyping - Fire Control Enhancements             |         |    |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| OTA Awards - Iterative Prototyping                            |         |    |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Contractor Design and Prototype Fabrication                   |         |    |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Engineering Support - Iterative Prototyping                   |         |    |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Test and Evaluation - Iterative Prototyping Testing 1 3Q FY22 |         |    |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Operational Testing   |         |    |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |

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

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| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>FF2 / <i>Small Arms Fire Control</i> |
|--|---|--|

| Event Name  | 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 |
| Test and Evaluation - Iterative Prototyping Testing 1 3Q FY23 |         |   |   |   |         |   |   |   |         |   |   |   | ■       |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Test and Evaluation - Iterative Prototyping Testing 2         |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   | ■       |   |   |   |         |   |   |   |         |   |   |   |

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

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| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>FF2 / <i>Small Arms Fire Control</i> |
|--|---|--|

Schedule Details

| Events  | Start   |      | End     |      |
|---|---------|------|---------|------|
|   | Quarter | Year | Quarter | Year |
| Rapid Prototyping - Fire Control                              | 1       | 2019 | 4       | 2021 |
| Prototype Opportunity Notice                                  | 3       | 2019 | 3       | 2019 |
| Other Transaction Agreement (OTA) Award - Rapid Prototyping   | 3       | 2020 | 3       | 2020 |
| L3 Harris - Contractor Design and Prototype Fabrication       | 3       | 2020 | 4       | 2021 |
| Vortex Optics- Contractor Design and Prototype Fabrication    | 3       | 2020 | 4       | 2021 |
| Engineering Support - Rapid Prototyping                       | 1       | 2019 | 4       | 2021 |
| Prototype Testing and Evaluation                              | 1       | 2021 | 3       | 2021 |
| Production Decision - NGFC                                    | 4       | 2021 | 4       | 2021 |
| Iterative Prototyping - Fire Control Enhancements             | 1       | 2021 | 4       | 2026 |
| OTA Awards - Iterative Prototyping                            | 1       | 2022 | 1       | 2022 |
| Contractor Design and Prototype Fabrication                   | 1       | 2022 | 4       | 2026 |
| Engineering Support - Iterative Prototyping                   | 1       | 2022 | 4       | 2026 |
| Test and Evaluation - Iterative Prototyping Testing 1 3Q FY22 | 3       | 2022 | 3       | 2022 |
| Operational Testing   | 4       | 2022 | 1       | 2023 |
| Test and Evaluation - Iterative Prototyping Testing 1 3Q FY23 | 3       | 2023 | 3       | 2023 |
| Test and Evaluation - Iterative Prototyping Testing 2         | 4       | 2024 | 1       | 2025 |

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

| Appropriation/Budget Activity<br>2040 / 5 |             |         |         |              | R-1 Program Element (Number/Name)<br>PE 0604601A / Infantry Support Weapons |               |         |         | Project (Number/Name)<br>F12 / Lightweight 30mm Cannon |         |                  |            |
|---|-------------|---------|---------|--------------|---|---------------|---------|---------|--|---------|------------------|------------|
| 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 |
| F12: <i>Lightweight 30mm Cannon</i>       | -           | 1.327   | -       | -            | -   | -             | -       | -       | -  | -       | -                | -          |
| Quantity of RDT&E Articles                | -           | -       | -       | -            | -   | -             | -       | -       | -  | -       | -                | -          |

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

Project F12 Lightweight 30 millimeter (mm) Cannon provides increased lethality modifications to Product Directorate Counter-Rockets, Artillery and Mortar (PD C-RAM) on their mine-resistant ambush-protected (MRAP) All-Terrain Vehicle, Mine Counter Measure- Low-slow-small Integrated Defense System (MCM-LIDS) Platforms, and United States Marine Corps (USMC). Funds will provide safety qualification and characterization testing of the percussion primed XM914 to include weapon modifications for future procurements and integration testing on various remote weapon stations. Funds may also be used to procure percussion primed ammunition for testing purposes.

This program is in support of an USMC Joint Urgent Operational Need Statement (JUONS) CC-0558 to provide an increased lethality modification for Product Directorate Counter Rocket Artillery Mortars (PD C-RAM) and any future requirement that requires 30mm increased lethality.

The XM914 is an upgraded and modified version of the M230 cannon currently equipped on the AH-64 Apache advanced attack helicopter. The XM914 is a link fed, externally powered and electrically primed 30mm chain gun, capable of firing two hundred rounds per minute. The gun incorporates an anti-hangfire system and an extended barrel for enhanced muzzle velocity. The XM914 provides significant lethality improvements over the current M2 .50 caliber machine gun and MK19 grenade machine gun and provides the capability required for Soldiers in a combat environment to engage enemy personnel and light armored targets.

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

|   | FY 2020 | FY 2021 | FY 2022 |
|---|---------|---------|---------|
| <b>Title:</b> Contractor Design and Prototype Fabrication   | 0.625   | -       | -       |
| <b>Description:</b> Includes contractor design, development and prototype fabrication for engineering and manufacturing development of the XM914 30 millimeter (mm) autocannon. |         |         |         |
| <b>Title:</b> Engineering Support   | 0.200   | -       | -       |
| <b>Description:</b> Government engineering support at lab/center, providing design, limited testing and oversight of development and contractor performance.                    |         |         |         |
| <b>Title:</b> Test and Evaluation   | 0.425   | -       | -       |
| <b>Description:</b> Government testing and evaluation of weapon prototype, articles and system improvements.  |         |         |         |
| <b>Title:</b> Program Management  | 0.077   | -       | -       |
| <b>Description:</b> Program management office provides oversight of contract actions, engineering support and test activities.  |         |         |         |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Army | <b>Date:</b> May 2021 |
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|--|---|--|
| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>F12 / <i>Lightweight 30mm Cannon</i> |
|--|---|--|

| <b>B. Accomplishments/Planned Programs (\$ in Millions)</b> | <b>FY 2020</b> | <b>FY 2021</b> | <b>FY 2022</b> |
|---|----------------|----------------|----------------|
| <b>Accomplishments/Planned Programs Subtotals</b>           | 1.327          | -              | -              |

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

N/A

**Remarks**

This program supported the Army's Modernization priorities (Build a More Lethal Force) through enhancement of Joint Lethality in contested environments by minimizing and eliminating erosion of close combat capability relative to peer competitors in complex terrain as outlined in the NDS. There is no funding request for FY 2021.

**D. Acquisition Strategy**

The XM914 is considered a non-standard weapon that is being sold commercially to foreign customers by the vendor. As a modified version of the M230 30mm chain gun for the AH-64 Apache advanced attack helicopter, the XM914 requires safety confirmation/safety release and weapon qualification for vehicle mounted platforms. A long term, Indefinite Delivery/Indefinite Quantity (ID/IQ) Requirements type contract will be pursued once a production requirement is finalized. The contract may also include contract options for remote weapon station procurements to allow vehicle/platform PMs to procure the total weapon system. A sole source contract was awarded on 7 May 2020 to Northrop Grumman for the procurement of ten XM914 weapons for USMC in support of JUONS CC-0558.

The program supported new and emerging urgent requirements and has supported integration with ground vehicle platforms.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Army** **Date:** May 2021

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| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>F12 / <i>Lightweight 30mm Cannon</i> |
|--|---|--|

| <b>Management Services (\$ in Millions)</b> |                        |  |             | FY 2020 |            | FY 2021 |            | FY 2022 Base |            | FY 2022 OCO |            | FY 2022 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|------------------------|--|-------------|---------|------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| Cost Category Item                          | Contract Method & Type | Performing Activity & Location             | Prior Years | Cost    | Award Date | Cost    | Award Date | Cost         | Award Date | Cost        | Award Date | Cost          |                  |            |                          |
| Program Management                          | MIPR                   | PM Soldier Weapons : Picatinny Arsenal, NJ | 0.080       | 0.077   | Oct 2019   | -       |            | -            |            | -           |            | -             | 0.000            | 0.157      | -                        |
| <b>Subtotal</b>                             |                        |  | 0.080       | 0.077   |            | -       |            | -            |            | -           |            | -             | 0.000            | 0.157      | N/A                      |

| <b>Product Development (\$ in Millions)</b> |                        |                                |             | FY 2020 |            | FY 2021 |            | FY 2022 Base |            | FY 2022 OCO |            | FY 2022 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|------------------------|--------------------------------|-------------|---------|------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| Cost Category Item                          | Contract Method & Type | Performing Activity & Location | Prior Years | Cost    | Award Date | Cost    | Award Date | Cost         | Award Date | Cost        | Award Date | Cost          |                  |            |                          |
| Contractor Design and Prototype Fabrication | SS/FFP                 | Northrop Grumman : Mesa, AZ    | 5.200       | 0.625   | Nov 2019   | -       |            | -            |            | -           |            | -             | 0.000            | 5.825      | -                        |
| <b>Subtotal</b>                             |                        |                                | 5.200       | 0.625   |            | -       |            | -            |            | -           |            | -             | 0.000            | 5.825      | N/A                      |

| <b>Support (\$ in Millions)</b> |                        |   |             | FY 2020 |            | FY 2021 |            | FY 2022 Base |            | FY 2022 OCO |            | FY 2022 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---------------------------------|------------------------|---|-------------|---------|------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| Cost Category Item              | Contract Method & Type | Performing Activity & Location                | Prior Years | Cost    | Award Date | Cost    | Award Date | Cost         | Award Date | Cost        | Award Date | Cost          |                  |            |                          |
| Engineering Support             | MIPR                   | Multiple Other Government Agencies : Multiple | 1.350       | 0.200   | Oct 2019   | -       |            | -            |            | -           |            | -             | 0.000            | 1.550      | -                        |
| <b>Subtotal</b>                 |                        |   | 1.350       | 0.200   |            | -       |            | -            |            | -           |            | -             | 0.000            | 1.550      | N/A                      |

| <b>Test and Evaluation (\$ in Millions)</b> |                        |   |             | FY 2020 |            | FY 2021 |            | FY 2022 Base |            | FY 2022 OCO |            | FY 2022 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|------------------------|---|-------------|---------|------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| Cost Category Item                          | Contract Method & Type | Performing Activity & Location  | Prior Years | Cost    | Award Date | Cost    | Award Date | Cost         | Award Date | Cost        | Award Date | Cost          |                  |            |                          |
| Test and Evaluation                         | MIPR                   | Army Test and Evaluation Command (ATEC) : Aberdeen Proving Ground, MD | 1.650       | 0.425   | Jul 2021   | -       |            | -            |            | -           |            | -             | 0.000            | 2.075      | -                        |
| <b>Subtotal</b>                             |                        |   | 1.650       | 0.425   |            | -       |            | -            |            | -           |            | -             | 0.000            | 2.075      | N/A                      |

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|---|--------------------|----------------|--|---|--|---------------------|--|--|--|----------------------|-------------------------|-------------------|---------------------------------|
| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2022 Army</b> |                    |                |  |   |  |                     |  | <b>Date: May 2021</b>  |  |                      |                         |                   |                                 |
| <b>Appropriation/Budget Activity</b><br>2040 / 5                  |                    |                |  | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> |  |                     |  | <b>Project (Number/Name)</b><br>F12 / <i>Lightweight 30mm Cannon</i> |  |                      |                         |                   |                                 |
|   | <b>Prior Years</b> | <b>FY 2020</b> |  | <b>FY 2021</b>  |  | <b>FY 2022 Base</b> |  | <b>FY 2022 OCO</b>   |  | <b>FY 2022 Total</b> | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| <b>Project Cost Totals</b>  | 8.280              | 1.327          |  | 0.000   |  | -                   |  | -  |  | -                    | 0.000                   | 9.607             | N/A                             |

Remarks

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

|  |   |  |
|--|---|--|
| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>F12 / <i>Lightweight 30mm Cannon</i> |
|--|---|--|

| Event Name   | 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 |
| Contractor Design and Prototype Fabrication (Phase II) |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Engineering Support (Phase II)                         |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Test and Evaluation (Phase II)                         |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Program Management (Phase II)                          |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
|  |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |

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

|  |   |  |
|--|---|--|
| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>F12 / <i>Lightweight 30mm Cannon</i> |
|--|---|--|

Schedule Details

| Events   | Start   |      | End     |      |
|--|---------|------|---------|------|
|  | Quarter | Year | Quarter | Year |
| Contractor Design and Prototype Fabrication (Phase I)  | 1       | 2018 | 4       | 2018 |
| Engineering Support (Phase I)                          | 1       | 2018 | 4       | 2018 |
| Test and Evaluation (Phase I)                          | 1       | 2018 | 4       | 2018 |
| Program Management (Phase I)                           | 1       | 2018 | 4       | 2018 |
| Contractor Design and Prototype Fabrication (Phase II) | 1       | 2020 | 4       | 2020 |
| Engineering Support (Phase II)                         | 1       | 2020 | 4       | 2020 |
| Test and Evaluation (Phase II)                         | 1       | 2020 | 4       | 2020 |
| Program Management (Phase II)                          | 1       | 2020 | 4       | 2020 |

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|--|--------------------|----------------|----------------|---------------------|---|----------------------|----------------|----------------|--|-----------------------|-------------------------|-------------------|
| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Army |                    |                |                |                     |   |                      |                |                |  | <b>Date:</b> May 2021 |                         |                   |
| <b>Appropriation/Budget Activity</b><br>2040 / 5                   |                    |                |                |                     | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> |                      |                |                | <b>Project (Number/Name)</b><br>FL8 / <i>84mm MAAWS Ammunition</i> |                       |                         |                   |
| <b>COST (\$ in Millions)</b>                                       | <b>Prior Years</b> | <b>FY 2020</b> | <b>FY 2021</b> | <b>FY 2022 Base</b> | <b>FY 2022 OCO</b>  | <b>FY 2022 Total</b> | <b>FY 2023</b> | <b>FY 2024</b> | <b>FY 2025</b>   | <b>FY 2026</b>        | <b>Cost To Complete</b> | <b>Total Cost</b> |
| FL8: <i>84mm MAAWS Ammunition</i>                                  | -                  | 3.874          | 3.017          | 6.117               | -   | 6.117                | -              | -              | -  | -                     | -                       | -                 |
| Quantity of RDT&E Articles   | -                  | -              | -              | -                   | -   | -                    | -              | -              | -  | -                     |                         |                   |

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

Project FL8 84mm MAAWS Ammunition will test, evaluate and qualify up to seven types of 84 millimeters (mm) munitions for United States (U.S.) Army use with the M3/M3A1 Multi-Role Anti-Armor Anti-Personnel Weapon Systems (MAAWS). In addition to type classifying existing rounds, funds will also provide for the evaluation and qualification of the new High Explosive Programmable Airbursting Round. These rounds will provide improved lethality and a higher probability of hit in defilade positions for close combat forces against varying target sets and increased ranges in support of Infantry Squad formations. The M3/M3A1 is a HQDA G8 directed requirement scheduled for Type Classification 4th Quarter (Q) Fiscal Year (FY) 2022.

FY 2022 funding in the amount of \$6.639 million will be used to complete type classification efforts for the new programmable round.

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

|   | <b>FY 2020</b> | <b>FY 2021</b> | <b>FY 2022</b> |
|---|----------------|----------------|----------------|
| <p><b>Title:</b> Munition Prototype Development &amp; Demonstration</p> <p><b>Description:</b> Includes ammunition engineering and manufacturing, contract awards for prototypes, development and demonstration.</p> <p><b>FY 2021 Plans:</b><br/>To complete development and design reviews of the High Explosive (HE) programmable round for Type Classification and Full Material Release (TC-FMR), currently scheduled for FY 2022- 2023.</p> <p><b>FY 2022 Plans:</b><br/>Complete development and design reviews of the High Explosive (HE) programmable round for Type Classification (TC-STD), currently scheduled for FY 2022.</p> | 1.842          | 2.435          | 2.435          |
| <p><b>Title:</b> Engineering Support</p> <p><b>Description:</b> Government engineering support, providing oversight of design development and contractor performance.</p> <p><b>FY 2021 Plans:</b><br/>To provide engineering support and oversight of ammunition design and function. Participate in IPT, technical reviews and T&amp;E efforts.</p> <p><b>FY 2022 Plans:</b></p>  | 0.500          | 0.130          | 1.089          |

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|--|---|--|----------------|----------------|
| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Army   |   | <b>Date:</b> May 2021  |                |                |
| <b>Appropriation/Budget Activity</b><br>2040 / 5   | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>FL8 / <i>84mm MAAWS Ammunition</i> |                |                |
| <b>B. Accomplishments/Planned Programs (\$ in Millions)</b>  |   | <b>FY 2020</b>   | <b>FY 2021</b> | <b>FY 2022</b> |
| <p>Will continue to provide engineering support and oversight of ammunition design and function. Will continue to participate in IPT, technical reviews and T&amp;E efforts.</p> <p><b>FY 2021 to FY 2022 Increase/Decrease Statement:</b><br/>Additional funds are required in FY22 to complete oversight of ammunition design improvements requiring additional Integrated Product Team (IPT) members for TC-STD efforts leading to FMR.</p>   |   |  |                |                |
| <p><b>Title:</b> Test and Evaluation</p> <p><b>Description:</b> Funds will support the following efforts:</p> <p><b>FY 2021 Plans:</b><br/>Complete developmental test and evaluation efforts of the programmable round and begin production qualification testing.</p> <p><b>FY 2022 Plans:</b><br/>Will complete delta testing of existing rounds, along with developmental test and evaluation efforts of the programmable round. Complete production qualification testing.</p> <p><b>FY 2021 to FY 2022 Increase/Decrease Statement:</b><br/>Additional funds required to complete delayed delta testing of existing rounds and to complete production qualification testing.</p> |   | 1.032  | 0.250          | 1.239          |
| <p><b>Title:</b> Program Management</p> <p><b>Description:</b> Funds will support the following efforts:</p> <p><b>FY 2021 Plans:</b><br/>Continue to provide project oversight, program management, non-labor operations, and contractor support.</p> <p><b>FY 2022 Plans:</b><br/>Will continue to provide project oversight, program management, non-labor operations, and contractor support.</p> <p><b>FY 2021 to FY 2022 Increase/Decrease Statement:</b><br/>Increase in funds to pay 100% of contractor support vs. 50% in the past, will also provide for other non-labor PM activities.</p>  |   | 0.500  | 0.202          | 0.645          |
| <p><b>Title:</b> TC-STD Efforts</p> <p><b>Description:</b> Type Classification efforts for Full Material Release of the programmable round.</p> <p><b>FY 2022 Plans:</b><br/>Complete Type Classification efforts for Full Material Release of the programmable round.</p> <p><b>FY 2021 to FY 2022 Increase/Decrease Statement:</b></p>   |   | -  | -              | 0.709          |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Army | <b>Date:</b> May 2021 |
|--|-----------------------|

|  |   |  |
|--|---|--|
| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>FL8 / <i>84mm MAAWS Ammunition</i> |
|--|---|--|

|   |                |                |                |
|---|----------------|----------------|----------------|
| <b>B. Accomplishments/Planned Programs (\$ in Millions)</b>           | <b>FY 2020</b> | <b>FY 2021</b> | <b>FY 2022</b> |
| Increase as this cost element was not included in the FY21 submission |                |                |                |
| <b>Accomplishments/Planned Programs Subtotals</b>                     | 3.874          | 3.017          | 6.117          |

|   |                |                |                               |                              |                                |                |                |                |                |                         |                   |
|---|----------------|----------------|-------------------------------|------------------------------|--------------------------------|----------------|----------------|----------------|----------------|-------------------------|-------------------|
| <b>C. Other Program Funding Summary (\$ in Millions)</b>            |                |                |                               |                              |                                |                |                |                |                |                         |                   |
| <b>Line Item</b>  | <b>FY 2020</b> | <b>FY 2021</b> | <b>FY 2022</b><br><b>Base</b> | <b>FY 2022</b><br><b>OCO</b> | <b>FY 2022</b><br><b>Total</b> | <b>FY 2023</b> | <b>FY 2024</b> | <b>FY 2025</b> | <b>FY 2026</b> | <b>Cost To Complete</b> | <b>Total Cost</b> |
| • EW4: <i>Crew Served Weapons Engineering Development</i>           | 3.982          | 9.608          | 2.443                         | -                            | 2.443                          | -              | -              | -              | -              | -                       | -                 |
| • G13101: <i>MULTI-ROLE ANTI-ARMOR ANTI-PERSONNEL WEAPON SYSTEM</i> | 19.264         | 22.629         | 31.623                        | -                            | 31.623                         | -              | -              | -              | -              | -                       | -                 |
| • OMA - 137010000: <i>RESET</i>                                     | -              | -              | 0.707                         | -                            | 0.707                          | -              | -              | -              | -              | -                       | -                 |

**Remarks**

**D. Acquisition Strategy**

Used Other Transaction Authority (OTA) via the DoD Ordnance Technology Consortium (DOTC) to obtain commercially available 84mm ammunition for test and evaluation purposes.

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| Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Army |                        |                                      |             |  |            |         |            |                             |            |             |            | Date: May 2021 |                  |            |                          |  |
|--|------------------------|--------------------------------------|-------------|--|------------|---------|------------|-----------------------------|------------|-------------|------------|----------------|------------------|------------|--------------------------|--|
| Appropriation/Budget Activity                          |                        |                                      |             | R-1 Program Element (Number/Name)      |            |         |            | Project (Number/Name)       |            |             |            |                |                  |            |                          |  |
| 2040 / 5   |                        |                                      |             | PE 0604601A / Infantry Support Weapons |            |         |            | FL8 / 84mm MAAWS Ammunition |            |             |            |                |                  |            |                          |  |
| <b>Management Services (\$ in Millions)</b>            |                        |                                      |             | FY 2020                                |            | FY 2021 |            | FY 2022 Base                |            | FY 2022 OCO |            | FY 2022 Total  |                  |            |                          |  |
| Cost Category Item                                     | Contract Method & Type | Performing Activity & Location       | Prior Years | Cost                                   | Award Date | Cost    | Award Date | Cost                        | Award Date | Cost        | Award Date | Cost           | Cost To Complete | Total Cost | Target Value of Contract |  |
| Program Management                                     | MIPR                   | PMSW : Picatinny Arsenal, NJ         | -           | 0.500                                  | Jun 2020   | 0.202   | Oct 2020   | 0.645                       | Oct 2021   | -           |            | 0.645          | 0.000            | 1.347      | Continuing               |  |
| <b>Subtotal</b>  |                        |                                      | -           | 0.500                                  |            | 0.202   |            | 0.645                       |            | -           |            | 0.645          | 0.000            | 1.347      | N/A                      |  |
| <b>Product Development (\$ in Millions)</b>            |                        |                                      |             | FY 2020                                |            | FY 2021 |            | FY 2022 Base                |            | FY 2022 OCO |            | FY 2022 Total  |                  |            |                          |  |
| Cost Category Item                                     | Contract Method & Type | Performing Activity & Location       | Prior Years | Cost                                   | Award Date | Cost    | Award Date | Cost                        | Award Date | Cost        | Award Date | Cost           | Cost To Complete | Total Cost | Target Value of Contract |  |
| Munitions Prototype                                    | SS/CPFF                | SAAB : Sweden                        | -           | 1.842                                  | Feb 2020   | 2.435   | Nov 2020   | 2.435                       | Nov 2021   | -           |            | 2.435          | 0.000            | 6.712      | Continuing               |  |
| <b>Subtotal</b>  |                        |                                      | -           | 1.842                                  |            | 2.435   |            | 2.435                       |            | -           |            | 2.435          | 0.000            | 6.712      | N/A                      |  |
| <b>Support (\$ in Millions)</b>                        |                        |                                      |             | FY 2020                                |            | FY 2021 |            | FY 2022 Base                |            | FY 2022 OCO |            | FY 2022 Total  |                  |            |                          |  |
| Cost Category Item                                     | Contract Method & Type | Performing Activity & Location       | Prior Years | Cost                                   | Award Date | Cost    | Award Date | Cost                        | Award Date | Cost        | Award Date | Cost           | Cost To Complete | Total Cost | Target Value of Contract |  |
| Engineering Support                                    | MIPR                   | CCDC : Picatinny Arsenal, NJ         | -           | 0.500                                  | Jun 2020   | 0.130   | Oct 2020   | 1.089                       | Mar 2022   | -           |            | 1.089          | 0.000            | 1.719      | Continuing               |  |
| TC-STD Efforts   | MIPR                   | CCDC : Picatinny Arsenal, New Jersey | -           | -                                      |            | -       |            | 0.709                       | Apr 2022   | -           |            | 0.709          | 0.000            | 0.709      | -                        |  |
| <b>Subtotal</b>  |                        |                                      | -           | 0.500                                  |            | 0.130   |            | 1.798                       |            | -           |            | 1.798          | 0.000            | 2.428      | N/A                      |  |
| <b>Test and Evaluation (\$ in Millions)</b>            |                        |                                      |             | FY 2020                                |            | FY 2021 |            | FY 2022 Base                |            | FY 2022 OCO |            | FY 2022 Total  |                  |            |                          |  |
| Cost Category Item                                     | Contract Method & Type | Performing Activity & Location       | Prior Years | Cost                                   | Award Date | Cost    | Award Date | Cost                        | Award Date | Cost        | Award Date | Cost           | Cost To Complete | Total Cost | Target Value of Contract |  |
| Test & Evaluation                                      | MIPR                   | A TEC : Aberdeen, MD                 | -           | 1.032                                  | Mar 2020   | 0.250   | Oct 2020   | 1.239                       | Apr 2022   | -           |            | 1.239          | 0.000            | 2.521      | Continuing               |  |
| <b>Subtotal</b>  |                        |                                      | -           | 1.032                                  |            | 0.250   |            | 1.239                       |            | -           |            | 1.239          | 0.000            | 2.521      | N/A                      |  |



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

|  |   |  |
|--|---|--|
| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>FL8 / <i>84mm MAAWS Ammunition</i> |
|--|---|--|

| Event Name                          | 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 |
| DOTC Contract Award                 | ▲1      |    |   |   |         |   |   |   |         |   |   |    |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Critical Design Review              |         | ▲2 |   |   |         |   |   |   |         |   |   |    |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Prototype Delivery                  |         |    |   | ▲3                                      |         |   |   |   |         |   |   |    |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Developmental & Operational Testing |         |    |   | [Bar spanning FY 2021 Q3 to FY 2022 Q2] |         |   |   |   |         |   |   |    |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| MS-C & TC-STD                       |         |    |   |   |         |   |   |   |         |   |   | ▲4 |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |

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

|  |   |  |
|--|---|--|
| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>FL8 / <i>84mm MAAWS Ammunition</i> |
|--|---|--|

Schedule Details

| Events                              | Start   |      | End     |      |
|-------------------------------------|---------|------|---------|------|
|                                     | Quarter | Year | Quarter | Year |
| Matériel Development Decision       | 4       | 2019 | 4       | 2019 |
| DOTC Contract Award                 | 1       | 2020 | 1       | 2020 |
| Critical Design Review              | 2       | 2020 | 2       | 2020 |
| Prototype Delivery                  | 1       | 2021 | 1       | 2021 |
| Developmental & Operational Testing | 4       | 2020 | 3       | 2022 |
| MS-C & TC-STD                       | 3       | 2022 | 3       | 2022 |

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

| Appropriation/Budget Activity<br>2040 / 5 |             |         |         |              | R-1 Program Element (Number/Name)<br>PE 0604601A / Infantry Support Weapons |               |         |         | Project (Number/Name)<br>FM4 / Next Generation Squad Weapons |         |                  |            |
|---|-------------|---------|---------|--------------|---|---------------|---------|---------|--|---------|------------------|------------|
| 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 |
| FM4: Next Generation Squad Weapons        | -           | 31.719  | 32.001  | 13.599       | -   | 13.599        | -       | -       | -  | -       | -                | -          |
| Quantity of RDT&E Articles                | -           | -       | -       | -            | -   | -             | -       | -       | -  | -       |                  |            |

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

The Next Generation Squad Weapons (NGSW) program will develop weapon systems and common 6.8mm cartridge to maintain overmatch and meet future force warfighter needs.

The Next Generation Squad Weapon-Rifle (NGSW-R) is the planned replacement for the M4A1 Carbine in the close combat force and select support units. The NGSW-R will provide capability improvements in accuracy, range, and lethality.

The Next Generation Squad Weapon-Automatic Rifle (NGSW-AR) is the planned replacement for the M249 Squad Automatic Weapon (SAW) in the close combat force and select support units. The NGSW-AR combines the firepower and range of a machine gun with the precision and ergonomics of a carbine, yielding capability improvements in accuracy, range, and lethality.

The NGSW-R and NGSW-AR will use a common 6.8mm cartridge in a variety of ammunition types including but not limited to general purpose (GP), special purpose (SP), reduced range, and blank.

Development efforts for additional NGSW variants may follow to replace other legacy systems or provide additional enhanced capabilities.

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

|  | FY 2020 | FY 2021 | FY 2022 |
|--|---------|---------|---------|
| <b>Title:</b> Contractor Design and Prototype Fabrication  | 27.186  | 6.960   | 5.919   |
| <b>Description:</b> Contractor design, development and fabrication of prototypes.  |         |         |         |
| <b>FY 2021 Plans:</b><br>Includes the second iteration of contractor design, development and prototype fabrication evaluated in Prototype Test II for rapid prototyping of the Next Generation Squad Weapon - Rifle and Automatic Rifle. Each of the three contractors are set to deliver thirty-eight (38) prototype rifles, twenty-eight (28) prototype automatic rifles and six hundred sixty thousand (660,000) surrogate and general purpose rounds of ammunition for government testing and soldier touch point evaluations. Contractors are working to develop and deliver the Technical Data Packages (TDP) to support final design configuration of the rifle, automatic rifle, and ammunition. |         |         |         |
| <b>FY 2022 Plans:</b>  |         |         |         |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Army   |   | <b>Date:</b> May 2021  |                |                |
| <b>Appropriation/Budget Activity</b><br>2040 / 5   | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>FM4 / <i>Next Generation Squad Weapons</i> |                |                |
| <b>B. Accomplishments/Planned Programs (\$ in Millions)</b>  |   | <b>FY 2020</b>   | <b>FY 2021</b> | <b>FY 2022</b> |
| <p>Will begin the next phase of iterative prototyping with the selected rifle and automatic rifle, in order to develop capability enhancements and design improvements. Effort will include the integration of additional cartridge and ammunition types, integration of new technologies and training systems, enhanced smart rail capabilities, and weapon system performance increases.</p> <p><b>FY 2021 to FY 2022 Increase/Decrease Statement:</b><br/>Competitive rapid prototyping with three vendors will conclude in early FY22 with the production selection. Ongoing improvements and enhancement will be conducted with one vendor, reducing the required funding.</p>  |   |  |                |                |
| <p><b>Title:</b> Engineering Support</p> <p><b>Description:</b> Government engineering support, providing oversight of design, development and contractor performance.</p> <p><b>FY 2021 Plans:</b><br/>Continue to provide government engineering support at laboratories and engineering centers, providing design, limited testing and oversight of development and contractor performance. Supporting the second phase of Prototype Test II (PT2) and several Soldier Touch Point events. Development of the plans and documentation in support of down-selection and production scope.</p> <p><b>FY 2022 Plans:</b><br/>Will continue government engineering support to provide design, limited testing and oversight of development and contractor performance for capability enhancement and design improvements.</p> <p><b>FY 2021 to FY 2022 Increase/Decrease Statement:</b><br/>The second phase of prototype testing (PT2) and Soldier Touch Point events will be completed in FY21, which will decrease the amount of engineering support required in FY22.</p> |   | 2.258  | 6.336          | 1.680          |
| <p><b>Title:</b> Test and Evaluation</p> <p><b>Description:</b> Testing and evaluation at government ranges and facilities.</p> <p><b>FY 2021 Plans:</b><br/>Government testing and evaluation of the second design iteration of prototype rifle, automatic rifle and associated ammunition. Prototype Test II continues to assess the final prototype configuration and support the production award decision in the first quarter (1Q) of FY 2022.</p> <p><b>FY 2022 Plans:</b></p>  |   | 1.856  | 5.984          | 3.200          |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Army   |   | <b>Date:</b> May 2021  |                |                |
| <b>Appropriation/Budget Activity</b><br>2040 / 5   | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>FM4 / <i>Next Generation Squad Weapons</i> |                |                |
| <b>B. Accomplishments/Planned Programs (\$ in Millions)</b>  |   | <b>FY 2020</b>   | <b>FY 2021</b> | <b>FY 2022</b> |
| <p>Government testing and evaluation will include safety confirmation for the reduced range cartridge integration and for multiple ammunition variants with the weapons. Will also begin Live Fire Test and Evaluation (LFT&amp;E) and Initial Operational Test and Evaluation (IOT&amp;E) of production representative weapons.</p> <p><b>FY 2021 to FY 2022 Increase/Decrease Statement:</b><br/>Less funding will be required in FY22 due to the conclusion of the second phase of prototype testing (PT2) and Soldier Touch Point events in FY21.</p>  |   |  |                |                |
| <p><b>Title:</b> Program Management</p> <p><b>Description:</b> Program office management and oversight of government and contractor efforts.</p> <p><b>FY 2021 Plans:</b><br/>Program management office continued to provide oversight of contract actions, engineering support and test activities.</p> <p><b>FY 2022 Plans:</b><br/>Program management office will continue to provide oversight of contract actions, engineering support and test activities.</p> <p><b>FY 2021 to FY 2022 Increase/Decrease Statement:</b><br/>Decrease in FY22 is due to main RDTE events prior to production phase like PT2 and STPs are expected to be completed in FY21.</p> |   | 0.419  | 1.136          | 0.250          |
| <p><b>Title:</b> Blank Cartridge and Blank Firing Weapon Adaption Kit Development</p> <p><b>FY 2021 Plans:</b><br/>Continue rapid prototyping of a blank cartridge and weapon adaption kit for the NGSW-R and NGSW-AR. Initial testing efforts in progress to obtain a Safety Release for blank ammunition and modification use during the Soldier Touch Points.</p> <p><b>FY 2021 to FY 2022 Increase/Decrease Statement:</b><br/>Complete Blank cartridge integration and blank firing weapon adaption kit assessments in FY22.</p>  |   | -  | 3.786          | -              |
| <p><b>Title:</b> Reduced Range Cartridge Development and Integration</p> <p><b>FY 2021 Plans:</b><br/>Begin work with the selected vendor to finalize design and manufacturing development of a reduced range cartridge and integration with the Next Generation Squad Weapon (NGSW) Rifle and Automatic Rifle.</p> <p><b>FY 2022 Plans:</b><br/>Will continue work with the selected vendor to finalize design and manufacturing development of a reduced range cartridge and integration with the Next Generation Squad Weapon (NGSW) Rifle and Automatic Rifle.</p> <p><b>FY 2021 to FY 2022 Increase/Decrease Statement:</b></p>                                 |   | -  | 7.799          | 1.500          |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Army | <b>Date:</b> May 2021 |
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| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>FM4 / <i>Next Generation Squad Weapons</i> |
|--|---|--|

| <b>B. Accomplishments/Planned Programs (\$ in Millions)</b>  | FY 2020 | FY 2021 | FY 2022 |
|--|---------|---------|---------|
| Required fund decrease is due to the bulk of the effort being paid with FY21 funding.  |         |         |         |
| <b>Title:</b> Special Purpose Cartridge Development and Integration  | -       | -       | 1.050   |
| <b>FY 2022 Plans:</b><br>Will continue work with the selected vendor to finalize design and manufacturing development of the SP cartridge and integration with the NGSW Rifle and Automatic Rifle. |         |         |         |
| <b>FY 2021 to FY 2022 Increase/Decrease Statement:</b><br>Slight funds increase although the bulk of the effort being paid with FY21 funding.  |         |         |         |
| <b>Accomplishments/Planned Programs Subtotals</b>  | 31.719  | 32.001  | 13.599  |

| <b>C. Other Program Funding Summary (\$ in Millions)</b>      |         |         |                        |                       |                         |         |         |         |         |                         |                   |
|---|---------|---------|------------------------|-----------------------|-------------------------|---------|---------|---------|---------|-------------------------|-------------------|
| <u>Line Item</u>  | FY 2020 | FY 2021 | FY 2022<br><u>Base</u> | FY 2022<br><u>OCO</u> | FY 2022<br><u>Total</u> | FY 2023 | FY 2024 | FY 2025 | FY 2026 | <u>Cost To Complete</u> | <u>Total Cost</u> |
| • S54: <i>Small Arms Improvement</i>                          | 13.956  | 15.495  | 6.911                  | -                     | 6.911                   | -       | -       | -       | -       | -                       | -                 |
| • EW4: <i>Crew Served Weapons Engineering Development</i>     | 3.982   | 9.608   | 2.443                  | -                     | 2.443                   | -       | -       | -       | -       | -                       | -                 |
| • S63: <i>Individual Weapons Engineering Development</i>      | 2.586   | 4.214   | 3.651                  | -                     | 3.651                   | -       | -       | -       | -       | -                       | -                 |
| • FL4: <i>Small Caliber Ammo for Next Gen Squad Weapons</i>   | 17.432  | 26.483  | 28.372                 | -                     | 28.372                  | -       | -       | -       | -       | -                       | -                 |
| • G14511: <i>Next Generation Squad Weapon-Automatic Rifle</i> | -       | -       | 3.630                  | -                     | 3.630                   | -       | -       | -       | -       | -                       | -                 |
| • G14512: <i>NEXT GENERATION SQUAD WEAPON-RIFLE</i>           | -       | -       | 20.862                 | -                     | 20.862                  | -       | -       | -       | -       | -                       | -                 |
| • E06001: <i>NEXT GENERATION SQUAD WEAPON AMMUNITION</i>      | -       | 11.988  | 76.794                 | -                     | 76.794                  | -       | -       | -       | -       | -                       | -                 |

**Remarks**

**D. Acquisition Strategy**  
The NGSW program is a Middle Tier Acquisition (MTA) program utilizing Rapid Prototyping authority under Section 804 of the FY 2016 National Defense Authorization Act (NDAA). A full and open competition selected three vendors for fixed amount Other Transaction Authority (OTA) awards to mature and finalize system designs and conduct test and evaluation. Upon successful completion of the prototyping effort, the Government will award follow on production contract(s) for the NGSW-R, the NGSW-AR, and 6.8mm common ammunition, without further competition.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Army** **Date:** May 2021

|  |   |  |
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| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>FM4 / <i>Next Generation Squad Weapons</i> |
|--|---|--|

| <b>Management Services (\$ in Millions)</b> |                        |  |             | FY 2020 |            | FY 2021 |            | FY 2022 Base |            | FY 2022 OCO |            | FY 2022 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|------------------------|--|-------------|---------|------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| Cost Category Item                          | Contract Method & Type | Performing Activity & Location             | Prior Years | Cost    | Award Date | Cost    | Award Date | Cost         | Award Date | Cost        | Award Date | Cost          |                  |            |                          |
| Program Management                          | Allot                  | PM Soldier Weapons : Picatinny Arsenal, NJ | -           | 0.419   |            | 1.136   | Oct 2020   | 0.250        | Oct 2021   | -           |            | 0.250         | 0.000            | 1.805      | -                        |
| <b>Subtotal</b>                             |                        |  | -           | 0.419   |            | 1.136   |            | 0.250        |            | -           |            | 0.250         | 0.000            | 1.805      | N/A                      |

| <b>Product Development (\$ in Millions)</b>                        |                        |  |             | FY 2020 |            | FY 2021 |            | FY 2022 Base |            | FY 2022 OCO |            | FY 2022 Total | Cost To Complete | Total Cost | Target Value of Contract |
|--|------------------------|--|-------------|---------|------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| Cost Category Item   | Contract Method & Type | Performing Activity & Location             | Prior Years | Cost    | Award Date | Cost    | Award Date | Cost         | Award Date | Cost        | Award Date | Cost          |                  |            |                          |
| Prototype Opportunity Notice                                       | C/TBD                  | SIG Sauer Inc. : Newington, NH             | -           | 1.188   | Jan 2020   | 1.212   | Oct 2020   | -            |            | -           |            | -             | 0.000            | 2.400      | -                        |
| Prototype Opportunity Notice                                       | C/TBD                  | General Dynamics-OTS, Inc. : Williston, VT | -           | 13.980  | Jan 2020   | 2.997   | Oct 2020   | -            |            | -           |            | -             | 0.000            | 16.977     | -                        |
| Prototype Opportunity Notice                                       | C/TBD                  | AAI Corp Textron Systems : Hunt Valley, MD | -           | 12.018  | Jan 2020   | 2.751   | Oct 2020   | -            |            | -           |            | -             | 0.000            | 14.769     | -                        |
| Blank Cartridge and Blank Firing Weapon Adaptation Kit Development | C/TBD                  | VENDOR TBD : ACC-NJ, Picatinny Arsenal, NJ | -           | -       |            | 3.786   | Sep 2021   | -            |            | -           |            | -             | 0.000            | 3.786      | -                        |
| Reduced Range Cartridge Development and Integration                | C/TBD                  | VENDOR TBD : ACC-NJ, Picatinny Arsenal, NJ | -           | -       |            | 7.799   | Sep 2021   | 1.500        | Jan 2022   | -           |            | 1.500         | 0.000            | 9.299      | -                        |
| Special Purpose Cartridge Development and Integration              | C/TBD                  | VENDOR TBD : ACC-NJ, Picatinny Arsenal, NJ | -           | -       |            | -       |            | 1.050        | Jan 2022   | -           |            | 1.050         | 0.000            | 1.050      | -                        |
| Iterative Prototyping / Design Improvements                        | C/TBD                  | VENDOR TBD : ACC-NJ, Picatinny Arsenal, NJ | -           | -       |            | -       |            | 5.919        | Jan 2022   | -           |            | 5.919         | 0.000            | 5.919      | -                        |
| <b>Subtotal</b>  |                        |  | -           | 27.186  |            | 18.545  |            | 8.469        |            | -           |            | 8.469         | 0.000            | 54.200     | N/A                      |

**Remarks**  
Blank Cartridge and Blank Firing Weapon Adaptation Kit Development, Reduced Range Cartridge Development and Integration, and Special Purpose Cartridge Development and Integration will be vendor efforts awarded to the company selected for production of the NGSW Rifle and Automatic Rifle.

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| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2022 Army</b> |                        |  |             |                |            |   |            |                     |            |                    |  |                      | <b>Date: May 2021</b> |            |                          |
|---|------------------------|--|-------------|----------------|------------|---|------------|---------------------|------------|--------------------|--|----------------------|-----------------------|------------|--------------------------|
| <b>Appropriation/Budget Activity</b><br>2040 / 5                  |                        |  |             |                |            | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> |            |                     |            |                    | <b>Project (Number/Name)</b><br>FM4 / <i>Next Generation Squad Weapons</i> |                      |                       |            |                          |
| <b>Support (\$ in Millions)</b>                                   |                        |  |             | <b>FY 2020</b> |            | <b>FY 2021</b>  |            | <b>FY 2022 Base</b> |            | <b>FY 2022 OCO</b> |  | <b>FY 2022 Total</b> |                       |            |                          |
| Cost Category Item  | Contract Method & Type | Performing Activity & Location   | Prior Years | Cost           | Award Date | Cost  | Award Date | Cost                | Award Date | Cost               | Award Date   | Cost                 | Cost To Complete      | Total Cost | Target Value of Contract |
| Engineering Support   | MIPR                   | Combat Capability Development Center - Armament Center (CCDC-AC) : Picatinny Arsenal, NJ | -           | 2.258          | Oct 2019   | 6.336   | Oct 2020   | 1.680               | Oct 2021   | -                  |  | 1.680                | 0.000                 | 10.274     | -                        |
| <b>Subtotal</b>   |                        |  | -           | 2.258          |            | 6.336   |            | 1.680               |            | -                  |  | 1.680                | 0.000                 | 10.274     | N/A                      |
| <b>Test and Evaluation (\$ in Millions)</b>                       |                        |  |             | <b>FY 2020</b> |            | <b>FY 2021</b>  |            | <b>FY 2022 Base</b> |            | <b>FY 2022 OCO</b> |  | <b>FY 2022 Total</b> |                       |            |                          |
| Cost Category Item  | Contract Method & Type | Performing Activity & Location   | Prior Years | Cost           | Award Date | Cost  | Award Date | Cost                | Award Date | Cost               | Award Date   | Cost                 | Cost To Complete      | Total Cost | Target Value of Contract |
| Test and Evaluation   | MIPR                   | Army Test and Evaluation Command (ATEC) : Aberdeen Proving Ground, ND                    | -           | 1.856          | Apr 2020   | 5.984   | Dec 2020   | 3.200               | Dec 2021   | -                  |  | 3.200                | 0.000                 | 11.040     | -                        |
| <b>Subtotal</b>   |                        |  | -           | 1.856          |            | 5.984   |            | 3.200               |            | -                  |  | 3.200                | 0.000                 | 11.040     | N/A                      |
| <b>Project Cost Totals</b>  |                        |  | -           | 31.719         |            | 32.001  |            | 13.599              |            | -                  |  | 13.599               | 0.000                 | 77.319     | N/A                      |
| <b>Remarks</b>  |                        |  |             |                |            |   |            |                     |            |                    |  |                      |                       |            |                          |

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

|  |   |  |
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| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>FM4 / <i>Next Generation Squad Weapons</i> |
|--|---|--|

| Event Name  | 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 |
| <b>Rapid Prototyping - Rifle / AR / Common Cartridge</b>    |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Sig Sauer Inc.- Contractor Design and Prototype Fabrication |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| General Dynamics- OTS Inc- Contractor Design and Prototyp   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| AAJ CorpTextron Systems - Contractor Design and Prototype   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| VENDOR TBD - Production Down-Selection                      |         |   |   |   |         |   |   |   | ▲ 1     |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Blank Cartridge & Firing Weapon Adaptation Kit Development  |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Reduced Range Cartiridge Development and Integration        |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Special Purpose Cartridge Development and Integration       |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Engineering Support   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Prototype Testing (Phase I) - Test and Evaluation           |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Prototype Testing (Phase II) - Test and Evaluation          |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| <b>Iterative Prototyping - Improvements</b>                 |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| OTA Awards - Iterative Prototyping                          |         |   |   |   |         |   |   |   |         |   |   |   | ▲ 2     |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |

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

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| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>FM4 / <i>Next Generation Squad Weapons</i> |
|--|---|--|

| Event Name                                  | 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 |
| Contractor Design and Prototype Fabrication |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Engineering Support - Iterative Prototyping |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Test and Evaluation - Iterative Prototyping |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Test and Evaluation - LFT&E                 |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Test and Evaluation - IOT&E                 |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |

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

|  |   |  |
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| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>FM4 / <i>Next Generation Squad Weapons</i> |
|--|---|--|

Schedule Details

| Events   | Start   |      | End     |      |
|--|---------|------|---------|------|
|  | Quarter | Year | Quarter | Year |
| Rapid Prototyping - Rifle / AR / Common Cartridge                      | 4       | 2019 | 4       | 2021 |
| Prototype Opportunity Notice   | 2       | 2019 | 2       | 2019 |
| Other Transaction Agreements (OTA) Award - Rapid Prototyping           | 4       | 2019 | 4       | 2019 |
| Sig Sauer Inc.- Contractor Design and Prototype Fabrication            | 4       | 2019 | 4       | 2021 |
| General Dynamics- OTS Inc- Contractor Design and Prototype Fabrication | 4       | 2019 | 4       | 2021 |
| AAJ CorpTextron Systems - Contractor Design and Prototype Fabrication  | 4       | 2019 | 4       | 2021 |
| VENDOR TBD - Production Down-Selection                                 | 1       | 2022 | 1       | 2022 |
| Blank Cartridge & Firing Weapon Adaptation Kit Development             | 2       | 2021 | 1       | 2023 |
| Reduced Range Cartirdge Development and Integration                    | 3       | 2021 | 4       | 2023 |
| Special Purpose Cartridge Development and Integration                  | 4       | 2021 | 2       | 2023 |
| Engineering Support  | 1       | 2019 | 1       | 2023 |
| Prototype Testing (Phase I) - Test and Evaluation                      | 3       | 2020 | 4       | 2020 |
| Prototype Testing (Phase II) - Test and Evaluation                     | 2       | 2021 | 4       | 2021 |
| Iterative Prototyping - Improvements                                   | 1       | 2022 | 4       | 2025 |
| OTA Awards - Iterative Prototyping                                     | 2       | 2022 | 2       | 2022 |
| Contractor Design and Prototype Fabrication                            | 2       | 2022 | 4       | 2026 |
| Engineering Support - Iterative Prototyping                            | 2       | 2022 | 4       | 2026 |
| Test and Evaluation - Iterative Prototyping                            | 3       | 2022 | 4       | 2025 |
| Test and Evaluation - LFT&E  | 4       | 2022 | 1       | 2023 |
| Test and Evaluation - IOT&E  | 4       | 2022 | 1       | 2023 |

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

| Appropriation/Budget Activity<br>2040 / 5 |             |         |         |              | R-1 Program Element (Number/Name)<br>PE 0604601A / Infantry Support Weapons |               |         |         | Project (Number/Name)<br>S58 / Soldier Enhancement Program |         |                  |            |
|---|-------------|---------|---------|--------------|---|---------------|---------|---------|--|---------|------------------|------------|
| 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 |
| S58: Soldier Enhancement Program          | -           | -       | 9.000   | 3.655        | -   | 3.655         | -       | -       | -  | -       | -                | -          |
| Quantity of RDT&E Articles                | -           | -       | -       | -            | -   | -             | -       | -       | -  | -       |                  |            |

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

The Soldier Enhancement Program (SEP) was established in the Fiscal Year (FY) 1990 National Defense Authorization Act (NDAA). SEP provides an innovative rapid approach that includes procurement and evaluation of Commercial Off the Shelf (COTS)/Non Developmental Item (NDI)/Government Off the Shelf (GOTS) items that have the potential to enhance an Army Infantryman and Soldiers' ability to execute their combat mission. SEP provides significant savings and acceleration in the evaluation of items. The SEP program is managed jointly by Program Executive Office (PEO) Soldier and the Maneuver Center of Excellence. SEP suggestions are submitted by individual Soldiers, Field Commanders, commercial manufacturers, and others via the Program Executive Office (PEO) Soldier SEP website. Viable suggestions are vetted by a Council of Colonels (CoC) and validated as SEP initiatives by Department of the Army, Deputy Chief of Staff, G8, Force Development. A limited number of validated SEP initiatives are procured and evaluated by Soldiers for feasibility and suitability. Based on the evaluation findings, the SEP CoC provides one or more of the following courses of action: (1) inform deliberate or urgent/emerging requirements generation, (2) initiate a new Program of Record (POR), (3) improve an existing POR, (4) transition to the Rapid Equipping Force or (5) add to the Rapid Fielding Initiative list, (6) provide a national stock number (NSN) for unit procurement or (7) the item did not meet objectives and no further action is necessary.

Justification: FY2022 RDT&E funding supports SEP evaluations and documentation of results.

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

|  | FY 2020 | FY 2021 | FY 2022 |
|--|---------|---------|---------|
| <b>Title:</b> Evaluate COTS/GOTS/NDI equipment that have the potential to enhance Soldier combat effectiveness.  | -       | -       | 3.655   |
| <b>FY 2022 Plans:</b><br>Funding will support evaluation of SEP Council of Colonels approved and validated initiatives. Evaluations will include safety testing, collection, and analysis of user feedback and documentation of results. |         |         |         |
| <b>FY 2021 to FY 2022 Increase/Decrease Statement:</b><br>Congressional Add in FY21.   |         |         |         |
| <b>Accomplishments/Planned Programs Subtotals</b>  | -       | -       | 3.655   |

|  | FY 2020 | FY 2021 |
|--|---------|---------|
| <b>Congressional Add:</b> Program increase - soldier enhancement program   | -       | 9.000   |
| <b>FY 2021 Plans:</b> Funding will support evaluation of SEP Council of Colonels approved and validated initiatives. Coordinate with industry and Army to ensure submitted proposals satisfy Army needs. Manage and distribute |         |         |

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

|  |   |  |
|--|---|--|
| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>S58 / <i>Soldier Enhancement Program</i> |
|--|---|--|

|   |                |                |
|---|----------------|----------------|
| funding for SEP evaluations. Evaluations will include safety testing, collection, and analysis of user feedback and documentation of results for close-out. | <b>FY 2020</b> | <b>FY 2021</b> |
| <b>Congressional Adds Subtotals</b>   | -              | 9.000          |

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

| <u>Line Item</u>                     | <u>FY 2020</u> | <u>FY 2021</u> | <u>FY 2022</u><br><u>Base</u> | <u>FY 2022</u><br><u>OCO</u> | <u>FY 2022</u><br><u>Total</u> | <u>FY 2023</u> | <u>FY 2024</u> | <u>FY 2025</u> | <u>FY 2026</u> | <u>Cost To</u><br><u>Complete</u> | <u>Total Cost</u> |
|--------------------------------------|----------------|----------------|-------------------------------|------------------------------|--------------------------------|----------------|----------------|----------------|----------------|-----------------------------------|-------------------|
| • MA6800: <i>Soldier Enhancement</i> | -              | -              | 1.286                         | -                            | 1.286                          | -              | -              | -              | -              | -                                 | -                 |

**Remarks**

Other

**D. Acquisition Strategy**

SEP focuses on COTS/GOTS/NDI initiatives submitted by Soldiers and industry. SEP proposals are reviewed and approved semiannually. Procurement funds SEP COTS/GOTS/NDI items in quantities sufficient for Soldier evaluation. Research, Development, Test and Evaluation is used to conduct product evaluations which includes safety testing, data collection, analysis of Soldier feedback/results and documentation of results. Product Managers responsible for portfolio in which the SEP initiative falls develops the procurement and evaluation strategy and procures the items using a variety of means from Government purchase card to full contracts. Soldiers evaluations are performed by various means from Battle Lab surveys to full scale Army Test and Evaluation testing depending on the item.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Army** **Date:** May 2021

|  |   |  |
|--|---|--|
| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>S58 / <i>Soldier Enhancement Program</i> |
|--|---|--|

| <b>Management Services (\$ in Millions)</b> |                        |                                |             | FY 2020 |            | FY 2021 |            | FY 2022 Base |            | FY 2022 OCO |            | FY 2022 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|------------------------|--------------------------------|-------------|---------|------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| Cost Category Item                          | Contract Method & Type | Performing Activity & Location | Prior Years | Cost    | Award Date | Cost    | Award Date | Cost         | Award Date | Cost        | Award Date | Cost          |                  |            |                          |
| Various                                     | MIPR                   | PEO SOLDIER : Ft. Belvoir, VA  | 14.825      | -       |            | 0.361   | Sep 2021   | -            |            | -           |            | -             | 0.000            | 15.186     | -                        |
| <b>Subtotal</b>                             |                        |                                | 14.825      | -       |            | 0.361   |            | -            |            | -           |            | -             | 0.000            | 15.186     | N/A                      |

**Remarks**  
Systems Engineering and Program Management includes engineering support, conducting technical evaluations, market research and program reviews.

| <b>Product Development (\$ in Millions)</b> |                        |                                |             | FY 2020 |            | FY 2021 |            | FY 2022 Base |            | FY 2022 OCO |            | FY 2022 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|------------------------|--------------------------------|-------------|---------|------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| Cost Category Item                          | Contract Method & Type | Performing Activity & Location | Prior Years | Cost    | Award Date | Cost    | Award Date | Cost         | Award Date | Cost        | Award Date | Cost          |                  |            |                          |
| Various                                     | MIPR                   | Various : Various              | 39.573      | -       |            | -       |            | -            |            | -           |            | -             | 0.000            | 39.573     | -                        |
| <b>Subtotal</b>                             |                        |                                | 39.573      | -       |            | -       |            | -            |            | -           |            | -             | 0.000            | 39.573     | N/A                      |

**Remarks**  
Candidates for the Soldier Enhancement Program are received, reviewed, and approved semi-annually. Contractual efforts are focused on procuring prototypes for testing.

| <b>Support (\$ in Millions)</b> |                        |                                |             | FY 2020 |            | FY 2021 |            | FY 2022 Base |            | FY 2022 OCO |            | FY 2022 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---------------------------------|------------------------|--------------------------------|-------------|---------|------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| Cost Category Item              | Contract Method & Type | Performing Activity & Location | Prior Years | Cost    | Award Date | Cost    | Award Date | Cost         | Award Date | Cost        | Award Date | Cost          |                  |            |                          |
| Various                         | MIPR                   | PEO Soldier : Ft. Belvoir, VA  | 6.424       | -       |            | -       |            | -            |            | -           |            | -             | 0.000            | 6.424      | -                        |
| <b>Subtotal</b>                 |                        |                                | 6.424       | -       |            | -       |            | -            |            | -           |            | -             | 0.000            | 6.424      | N/A                      |

| <b>Test and Evaluation (\$ in Millions)</b> |                        |                                |             | FY 2020 |            | FY 2021 |            | FY 2022 Base |            | FY 2022 OCO |            | FY 2022 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|------------------------|--------------------------------|-------------|---------|------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| Cost Category Item                          | Contract Method & Type | Performing Activity & Location | Prior Years | Cost    | Award Date | Cost    | Award Date | Cost         | Award Date | Cost        | Award Date | Cost          |                  |            |                          |
| Various                                     | MIPR                   | Various : Various              | 57.533      | -       |            | 8.639   |            | 3.655        |            | -           |            | 3.655         | 0.000            | 69.827     | -                        |
| <b>Subtotal</b>                             |                        |                                | 57.533      | -       |            | 8.639   |            | 3.655        |            | -           |            | 3.655         | 0.000            | 69.827     | N/A                      |

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Army** **Date:** May 2021

|  |   |  |
|--|---|--|
| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>S58 / <i>Soldier Enhancement Program</i> |
|--|---|--|

| Test and Evaluation (\$ in Millions) |                        |                                |             | FY 2020 |            | FY 2021 |            | FY 2022 Base |            | FY 2022 OCO |            | FY 2022 Total | Cost To Complete | Total Cost | Target Value of Contract |
|--------------------------------------|------------------------|--------------------------------|-------------|---------|------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| Cost Category Item                   | Contract Method & Type | Performing Activity & Location | Prior Years | Cost    | Award Date | Cost    | Award Date | Cost         | Award Date | Cost        | Award Date | Cost          |                  |            |                          |

**Remarks**  
Testing costs vary annually depending on number and type of items being evaluated.

|                            | Prior Years | FY 2020 | FY 2021 | FY 2022 Base | FY 2022 OCO | FY 2022 Total | Cost To Complete | Total Cost | Target Value of Contract |
|----------------------------|-------------|---------|---------|--------------|-------------|---------------|------------------|------------|--------------------------|
| <b>Project Cost Totals</b> | 118.355     | -       | 9.000   | 3.655        | -           | 3.655         | 0.000            | 131.010    | N/A                      |

**Remarks**

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

|  |   |  |
|--|---|--|
| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>S58 / <i>Soldier Enhancement Program</i> |
|--|---|--|

| Event Name  | 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 |
| SEP Council of Colonels approve/prioritization process 2QFY21 |         |   |   |   | ▲ 1<br>Approval/prioritization of SEP Proposals |   |   |   |                                    |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Evaluate Initiatives 2-3QFY21                                 |         |   |   |   |   |   |   |   | ■<br>Evaluate Approved Initiatives |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| SEP Council of Colonels approve/prioritization process 3QFY21 |         |   |   |   | ▲ 2<br>Approval/prioritization of SEP Proposals |   |   |   |                                    |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Evaluate Initiatives 3-4QFY21                                 |         |   |   |   |   |   |   |   | ■<br>Evaluate Approved Initiatives |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| SEP Council of Colonels approve/prioritization process 1QFY22 |         |   |   |   | ▲ 3<br>Approval/prioritization of SEP Proposals |   |   |   |                                    |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Evaluate Initiatives 1-2QFY22                                 |         |   |   |   |   |   |   |   | ■<br>Evaluate Approved Initiatives |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |

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

|  |   |  |
|--|---|--|
| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>S58 / <i>Soldier Enhancement Program</i> |
|--|---|--|

Schedule Details

| Events  | Start   |      | End     |      |
|---|---------|------|---------|------|
|   | Quarter | Year | Quarter | Year |
| SEP Council of Colonels approve/prioritization process 2QFY21 | 2       | 2021 | 2       | 2021 |
| Evaluate Initiatives 2-3QFY21                                 | 2       | 2021 | 3       | 2021 |
| SEP Council of Colonels approve/prioritization process 3QFY21 | 3       | 2021 | 3       | 2021 |
| Evaluate Initiatives 3-4QFY21                                 | 3       | 2021 | 4       | 2021 |
| SEP Council of Colonels approve/prioritization process 1QFY22 | 1       | 2022 | 1       | 2022 |
| Evaluate Initiatives 1-2QFY22                                 | 1       | 2022 | 2       | 2022 |

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|  |                    |                |                |                     |   |                      |                |                |   |                       |                         |                   |
|--|--------------------|----------------|----------------|---------------------|---|----------------------|----------------|----------------|---|-----------------------|-------------------------|-------------------|
| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Army |                    |                |                |                     |   |                      |                |                |   | <b>Date:</b> May 2021 |                         |                   |
| <b>Appropriation/Budget Activity</b><br>2040 / 5                   |                    |                |                |                     | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> |                      |                |                | <b>Project (Number/Name)</b><br>S60 / <i>Clothing &amp; Equipment</i> |                       |                         |                   |
| <b>COST (\$ in Millions)</b>                                       | <b>Prior Years</b> | <b>FY 2020</b> | <b>FY 2021</b> | <b>FY 2022 Base</b> | <b>FY 2022 OCO</b>  | <b>FY 2022 Total</b> | <b>FY 2023</b> | <b>FY 2024</b> | <b>FY 2025</b>  | <b>FY 2026</b>        | <b>Cost To Complete</b> | <b>Total Cost</b> |
| S60: <i>Clothing &amp; Equipment</i>                               | -                  | 6.188          | 6.472          | 5.393               | -   | 5.393                | -              | -              | -   | -                     | -                       | -                 |
| Quantity of RDT&E Articles   | -                  | -              | -              | -                   | -   | -                    | -              | -              | -   | -                     |                         |                   |

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

Funding in this project supports the Army's Cross Functional Teams (CFT) initiatives. It supports engineering and manufacturing development tasks related to individual clothing and equipment with the goal of enhancing the lethality, survivability, and mobility as well as the quality of life of the individual Soldier. It funds formal Developmental Testing/Operational Testing of preproduction and production representative systems leveraging advancements in materials, fabrication techniques, moisture management, flame resistant, insect protection, extreme environmental protection and camouflage, to include evaluation, test, and conduct of Soldier evaluations of Organizational Clothing and Individual Equipment appropriate for use in extreme or multi-climate environments; not to preclude other climates and environments. Goal is to increase the capabilities and durability of tactical and non-tactical clothing and individual equipment. Includes integration and interface on the Soldier system. This project will transition capabilities from our Science and Technology partners to increase performance and safety of Soldier clothing and equipment. It will continue to support cross-service initiatives to increase commonality.

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

|  | <b>FY 2020</b> | <b>FY 2021</b> | <b>FY 2022</b> |
|--|----------------|----------------|----------------|
| <b>Title:</b> Soldier Uniforms and Clothing  | 4.910          | 3.432          | 2.725          |
| <b>Description:</b> Evaluate superior and sustainable integrated clothing for the Soldier in a rapidly changing global environment.  |                |                |                |
| <b>FY 2021 Plans:</b><br>Continue fabric and Flame Resistant upgrades. Continue Clothing Bag Upgrades and Evaluations. Conduct ensemble level evaluations of novel materials and fabrics in clothing and equipment in all climates. Continue user evaluations of modernized Cold Weather clothing items and fabrics that support improved protection against extreme cold weather. Continue design considerations for female garments, items such as sports bra, maternity uniforms, A2CU female, etc. Continue athletic shoe certification efforts.   |                |                |                |
| <b>FY 2022 Plans:</b><br>Perform technical testing, user evaluations, and qualify new fabrics with appropriate level of Flame Resistant (FR) protection for combat clothing and Cold Weather/Extreme Cold Weather Clothing. Continue clothing improvements and multi-service commonality efforts. Conduct user evaluations to support material changes to enhance tactical and environmental Soldier clothing. Procure test assets and perform Developmental tests/Operational Tests (DT/OT) on uniforms produced with microwave protective materials to defeat emerging threats and on uniforms designed to mitigate Ground Surveillance Radar (GSR) detection. Annual evaluation of domestic material solution submissions to support the Athletic Footwear program providing Soldiers a greater variety of athletic footwear from which to choose. Continue Clothing Bag Upgrades and Evaluations. Conduct ensemble level |                |                |                |

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|--|---|---|----------------|----------------|
| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Army   |   | <b>Date:</b> May 2021   |                |                |
| <b>Appropriation/Budget Activity</b><br>2040 / 5   | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>S60 / <i>Clothing &amp; Equipment</i> |                |                |
| <b>B. Accomplishments/Planned Programs (\$ in Millions)</b>  |   | <b>FY 2020</b>  | <b>FY 2021</b> | <b>FY 2022</b> |
| evaluations of novel materials and fabrics in clothing, footwear and equipment in all climates. Support the Secretary of the Army's directive to identify opportunities for commonality in OCIE across all Services (Army, Navy, Air Force, Marines, Coast Guard).   |   |   |                |                |
| <b>FY 2021 to FY 2022 Increase/Decrease Statement:</b><br>Funding decrease from FY 2021 to FY 2022 due to anticipated changes in requirements.   |   |   |                |                |
| <b>Title:</b> Individual Equipment   |   | 1.278   | 3.040          | 2.668          |
| <b>Description:</b> Develop and provide superior and sustainable integrated individual equipment for the Soldier in a rapidly changing global environment.   |   |   |                |                |
| <b>FY 2021 Plans:</b><br>Procure sufficient Individual Water Treatment Device (IWTD) quantities to complete large scale Operational Test (OT). Complete evaluation of the USMC water hydration system, evaluate it to determine applicability to Army requirements in support of cross-service initiatives to improve commonality. Begin testing on Cold Weather Mobility items. Complete redesign of load carriage equipment in support of weapon modernization. Continue testing of load carriage equipment to address interoperability with improved Army capabilities. Support athletic shoe certification.  |   |   |                |                |
| <b>FY 2022 Plans:</b><br>Development of the Welding Individual Protection System (WIPS) ensemble. WIPS will provide welders with Occupational Safety Health Act (OSHA) compliant Personal Protective Equipment (PPE); and will enable units with a capability to execute mission essential welding tasks. Procure test assets and perform Developmental tests/Operational Tests (DT/OT) as required for GEN II Individual Water Treatment Device for Toxic Industrial Chemicals and Toxic Industrial Materials (TICs/TIMs) and desalinization. Procure test assets and perform DT/OT as required for Cold Weather Gear. Procure and test assets and perform DT/OT for survival blanket for use in Zone 7 environments. Procure and test skin paint to camouflage and reduce thermal signature on exposed skin (face, neck, hands, etc) and to temporarily camouflage individual equipment. Validation of load carriage equipment in support of weapon modernization. Continue athletic shoe certification. Continue testing of load carriage equipment to address interoperability with improved Army capabilities. Support the Secretary of the Army's directive to identify opportunities for commonality in OCIE across all Services (Army, Navy, Air Force, Marines, Coast Guard). |   |   |                |                |
| <b>FY 2021 to FY 2022 Increase/Decrease Statement:</b><br>Funding decrease from FY 2021 to FY 2022 due to anticipated changes in requirements.   |   |   |                |                |
| <b>Accomplishments/Planned Programs Subtotals</b>  |   | 6.188   | 6.472          | 5.393          |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Army | <b>Date:</b> May 2021 |
|--|-----------------------|

|  |   |   |
|--|---|---|
| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>S60 / <i>Clothing &amp; Equipment</i> |
|--|---|---|

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

| <u>Line Item</u>                     | <u>FY 2020</u> | <u>FY 2021</u> | <u>FY 2022</u><br><u>Base</u> | <u>FY 2022</u><br><u>OCO</u> | <u>FY 2022</u><br><u>Total</u> | <u>FY 2023</u> | <u>FY 2024</u> | <u>FY 2025</u> | <u>FY 2026</u> | <u>Cost To</u><br><u>Complete</u> | <u>Total Cost</u> |
|--------------------------------------|----------------|----------------|-------------------------------|------------------------------|--------------------------------|----------------|----------------|----------------|----------------|-----------------------------------|-------------------|
| • S53: <i>Clothing And Equipment</i> | 6.365          | 1.742          | 2.004                         | -                            | 2.004                          | -              | -              | -              | -              | -                                 | -                 |

**Remarks**

**D. Acquisition Strategy**

Acquisition strategies for these programs vary in methods, and range from: 1) Materiel Change Proposals that result in engineering changes to existing systems to; 2) Traditional development programs that include an Engineering and Manufacturing Development phase ranging in duration from 12 to 48 months, depending on the level of complexity and testing required.

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| Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Army |                        |                                |             |  |            |         |            |                            |            |             |            | Date: May 2021 |                  |            |                          |  |
|--|------------------------|--------------------------------|-------------|--|------------|---------|------------|----------------------------|------------|-------------|------------|----------------|------------------|------------|--------------------------|--|
| Appropriation/Budget Activity                          |                        |                                |             | R-1 Program Element (Number/Name)      |            |         |            | Project (Number/Name)      |            |             |            |                |                  |            |                          |  |
| 2040 / 5   |                        |                                |             | PE 0604601A / Infantry Support Weapons |            |         |            | S60 / Clothing & Equipment |            |             |            |                |                  |            |                          |  |
| <b>Management Services (\$ in Millions)</b>            |                        |                                |             | FY 2020                                |            | FY 2021 |            | FY 2022 Base               |            | FY 2022 OCO |            | FY 2022 Total  |                  |            |                          |  |
| Cost Category Item                                     | Contract Method & Type | Performing Activity & Location | Prior Years | Cost                                   | Award Date | Cost    | Award Date | Cost                       | Award Date | Cost        | Award Date | Cost           | Cost To Complete | Total Cost | Target Value of Contract |  |
| Program Management Support                             | Allot                  | PM SCIE : Ft Belvoir           | 11.123      | 0.768                                  |            | 0.812   |            | 0.749                      |            | -           |            | 0.749          | Continuing       | Continuing | Continuing               |  |
| <b>Subtotal</b>  |                        |                                | 11.123      | 0.768                                  |            | 0.812   |            | 0.749                      |            | -           |            | 0.749          | Continuing       | Continuing | N/A                      |  |
| <b>Product Development (\$ in Millions)</b>            |                        |                                |             | FY 2020                                |            | FY 2021 |            | FY 2022 Base               |            | FY 2022 OCO |            | FY 2022 Total  |                  |            |                          |  |
| Cost Category Item                                     | Contract Method & Type | Performing Activity & Location | Prior Years | Cost                                   | Award Date | Cost    | Award Date | Cost                       | Award Date | Cost        | Award Date | Cost           | Cost To Complete | Total Cost | Target Value of Contract |  |
| Engineering Support                                    | Various                | NSRDEC : Natick, MA            | 16.785      | 0.531                                  |            | 0.608   |            | 0.623                      |            | -           |            | 0.623          | Continuing       | Continuing | Continuing               |  |
| Development Contracts                                  | Various                | Various : Various              | 51.526      | 2.625                                  |            | 2.690   |            | 1.997                      |            | -           |            | 1.997          | Continuing       | Continuing | Continuing               |  |
| <b>Subtotal</b>  |                        |                                | 68.311      | 3.156                                  |            | 3.298   |            | 2.620                      |            | -           |            | 2.620          | Continuing       | Continuing | N/A                      |  |
| <b>Support (\$ in Millions)</b>                        |                        |                                |             | FY 2020                                |            | FY 2021 |            | FY 2022 Base               |            | FY 2022 OCO |            | FY 2022 Total  |                  |            |                          |  |
| Cost Category Item                                     | Contract Method & Type | Performing Activity & Location | Prior Years | Cost                                   | Award Date | Cost    | Award Date | Cost                       | Award Date | Cost        | Award Date | Cost           | Cost To Complete | Total Cost | Target Value of Contract |  |
| Program Office Support Costs                           | Various                | Natick, MA : Natick, MA        | 18.506      | 0.445                                  |            | 0.465   |            | 0.469                      |            | -           |            | 0.469          | Continuing       | Continuing | Continuing               |  |
| <b>Subtotal</b>  |                        |                                | 18.506      | 0.445                                  |            | 0.465   |            | 0.469                      |            | -           |            | 0.469          | Continuing       | Continuing | N/A                      |  |
| <b>Test and Evaluation (\$ in Millions)</b>            |                        |                                |             | FY 2020                                |            | FY 2021 |            | FY 2022 Base               |            | FY 2022 OCO |            | FY 2022 Total  |                  |            |                          |  |
| Cost Category Item                                     | Contract Method & Type | Performing Activity & Location | Prior Years | Cost                                   | Award Date | Cost    | Award Date | Cost                       | Award Date | Cost        | Award Date | Cost           | Cost To Complete | Total Cost | Target Value of Contract |  |
| Developmental Testing                                  | MIPR                   | Various : Various              | 30.922      | 1.819                                  |            | 1.897   |            | 1.555                      |            | -           |            | 1.555          | Continuing       | Continuing | Continuing               |  |
| <b>Subtotal</b>  |                        |                                | 30.922      | 1.819                                  |            | 1.897   |            | 1.555                      |            | -           |            | 1.555          | Continuing       | Continuing | N/A                      |  |
| <b>Project Cost Totals</b>                             |                        |                                | 128.862     | 6.188                                  |            | 6.472   |            | 5.393                      |            | -           |            | 5.393          | Continuing       | Continuing | N/A                      |  |

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| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2022 Army | <b>Date:</b> May 2021 |
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| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>S60 / <i>Clothing &amp; Equipment</i> |
|--|---|---|

|  | Prior Years | FY 2020 | FY 2021 | FY 2022 Base | FY 2022 OCO | FY 2022 Total | Cost To Complete | Total Cost | Target Value of Contract |
|--|-------------|---------|---------|--------------|-------------|---------------|------------------|------------|--------------------------|
|--|-------------|---------|---------|--------------|-------------|---------------|------------------|------------|--------------------------|

**Remarks**

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

|  |   |   |
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| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>S60 / <i>Clothing &amp; Equipment</i> |
|--|---|---|

| Event Name  | 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 |
| <b>UNIFORM CLOTHING</b>   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Continue Fabric & FR Upgrades   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Clothing Bag Upgrades and Evaluations                                 |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Develop Extreme Cold Weather Boot                                     |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Continue Upgrades for Extreme Cold Weather Protections                |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| FR Next Gen Materials Testing   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Footwear Last Development and Evaluation                              |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| <b>INDIVIDUAL EQUIPMENT</b>   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| On-the-Move Hydration Operational Life Testing (TIC/TIM/Desalination) |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Evaluate of Cold Weather Mobility items                               |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Evaluate Cold Weather Canteen   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Athletic Shoe Certification   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Welding Individual Protection System (WIPS)                           |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |

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

|  |   |   |
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| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>S60 / <i>Clothing &amp; Equipment</i> |
|--|---|---|

Schedule Details

| Events  | Start   |      | End     |      |
|---|---------|------|---------|------|
|   | Quarter | Year | Quarter | Year |
| UNIFORM CLOTHING  | 1       | 2011 | 4       | 2026 |
| Continue Fabric & FR Upgrades   | 3       | 2009 | 4       | 2026 |
| Clothing Bag Upgrades and Evaluations                                   | 1       | 2013 | 4       | 2026 |
| Develop Extreme Cold Weather Boot                                       | 1       | 2020 | 4       | 2023 |
| Continue Upgrades for Extreme Cold Weather Protections                  | 1       | 2020 | 4       | 2025 |
| FR Next Gen Materials Testing   | 3       | 2020 | 4       | 2026 |
| Footwear Last Development and Evaluation                                | 1       | 2023 | 4       | 2023 |
| INDIVIDUAL EQUIPMENT  | 2       | 2008 | 4       | 2025 |
| On-the-Move Hydration Operational Life Testing (TIC/TIM/Desalinization) | 2       | 2021 | 4       | 2024 |
| Evaluate of Cold Weather Mobility items                                 | 2       | 2021 | 4       | 2024 |
| Evaluate Cold Weather Canteen   | 3       | 2023 | 4       | 2024 |
| Athletic Shoe Certification   | 1       | 2021 | 4       | 2026 |
| Welding Individual Protection System (WIPS)                             | 1       | 2022 | 4       | 2023 |

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|--|--------------------|----------------|----------------|---------------------|---|----------------------|----------------|----------------|---|-----------------------|-------------------------|-------------------|
| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Army |                    |                |                |                     |   |                      |                |                |   | <b>Date:</b> May 2021 |                         |                   |
| <b>Appropriation/Budget Activity</b><br>2040 / 5                   |                    |                |                |                     | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> |                      |                |                | <b>Project (Number/Name)</b><br>S61 / <i>Acis Engineering Development</i> |                       |                         |                   |
| <b>COST (\$ in Millions)</b>                                       | <b>Prior Years</b> | <b>FY 2020</b> | <b>FY 2021</b> | <b>FY 2022 Base</b> | <b>FY 2022 OCO</b>  | <b>FY 2022 Total</b> | <b>FY 2023</b> | <b>FY 2024</b> | <b>FY 2025</b>  | <b>FY 2026</b>        | <b>Cost To Complete</b> | <b>Total Cost</b> |
| S61: <i>Acis Engineering Development</i>                           | -                  | 2.865          | 1.790          | 2.528               | -   | 2.528                | -              | -              | -   | -                     | -                       | -                 |
| Quantity of RDT&E Articles   | -                  | -              | -              | -                   | -   | -                    | -              | -              | -   | -                     |                         |                   |

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

This project conducts development, integration, and qualification activities in support of the Air Soldier System (Air SS). The Air SS is Army aircrew survival and mission equipment that improves safety, survivability, and mission performance. The Air SS addresses capability gaps identified during combat operations as well as emerging challenges to Army aircrew safety and performance caused by the bulk and weight of body-worn equipment, limited Situational Awareness (SA), lack of protection from emerging threats, and a lack functionally integrated mission electronics and protective/survival equipment. Air SS delivers improved aircrew survivability, SA, interoperability, and mission performance. The Air SS provides enhanced mission planning and execution, connectivity between aircrew members, other aircraft, and ground assets; improved terrain, threat, and obstacle avoidance information thorough improved heads up display (HUD) technologies; the capability to perform extended missions in extreme environmental and chemical/biological threat conditions; a digital replacement for paper-based DoD Flight Information Publications; and the Aircrew Combat Equipment (ACE), a replacement for the legacy survival vest with integral Modular Scalable Vest body armor. These enhanced capabilities support the enduring fleet as well as Future Vertical Lift (FVL) aircraft.

This project also funds the development and test of deferred Capability Development Document (CDD) capabilities as enablers to meet current and Multi-Domain Operation (MDO) gaps in protection, survivability, and SA. These include: improved laser eye protection to counter and defeat current and future threats; next generation Heads-Up Display for FVL platforms; power output improvement and weight and bulk reductions to aircrew-worn Personal Electronics; secure enhanced wireless audio capabilities aimed at further enhancement of crewmember mobility; and, aircrew helmet ballistic protection. This program does not duplicate any aircraft platform program efforts. Includes integration and interface of products on Soldiers and aircraft platforms.

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

|   | <b>FY 2020</b> | <b>FY 2021</b> | <b>FY 2022</b> |
|---|----------------|----------------|----------------|
| <b>Title:</b> Air Soldier System  | 2.865          | 1.790          | 2.528          |
| <b>Description:</b> This project conducts development, integration and qualification activities in support of the Air Soldier System (Air SS) program. The Air SS addresses capability gaps identified during combat operations in Iraq and Afghanistan. Including crew station compatibility challenges caused by the burden of excessive equipment bulk and weight; impacts to safety resulting from excessive pilot workload and limited aircrew situational awareness (SA); and inadequate aircrew protection from environmental extremes, hostile threats, and induced threats resulting from aircraft mishaps or crashes. |                |                |                |
| <b>FY 2021 Plans:</b>   |                |                |                |
| Completes Operational Testing of fully integrated Aircrew Combat Equipment (ACE) vest on each Army rotary wing platform to inform a production decision for FY 2022. Begins evaluation, development, and testing of candidate technologies for an improved laser eye protection (LEP) solution providing protection better aligned with today's threat. Future focus (beyond FY 2021) is on   |                |                |                |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Army |   | <b>Date:</b> May 2021   |
| <b>Appropriation/Budget Activity</b><br>2040 / 5                   | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>S61 / <i>Acis Engineering Development</i> |

| <b>B. Accomplishments/Planned Programs (\$ in Millions)</b>  | <b>FY 2020</b> | <b>FY 2021</b> | <b>FY 2022</b> |
|--|----------------|----------------|----------------|
| additional deferred capabilities including, but not limited to, development and testing of an obsolescence replacement for the Encrypted Aircraft Wireless Intercom System (EAWIS) leveraging Voice over Internet Protocol (VoIP) or ultra-wideband (UWB) technologies, and development and testing of aircrew helmet ballistic protection.<br><br><b>FY 2022 Plans:</b><br>Completes development and testing of improved laser eye protection (LEP) solution in order to provide enhanced protection better aligned for current and future MDO threats. Begins development of additional deferred capabilities and candidate technologies for use on current and future fleet (e.g. Future Vertical Lift) including, but not limited to: development and initial flight qualification of Helmet Sub-System (HSS); development of Combat Survivor/Evader Locator (CSEL) battery eliminator; and, obsolescence replacement for the Encrypted Aircraft Wireless Intercom System (EAWIS) leveraging Voice over Internet Protocol (VoIP) or ultra-wideband (UWB) technologies.<br><br><b>FY 2021 to FY 2022 Increase/Decrease Statement:</b><br>FY2021 to FY2022 increase is due to re-phasing in order to prioritize and speed up development of LEP solution, which is a known safety and protection capability gap. |                |                |                |
| <b>Accomplishments/Planned Programs Subtotals</b>  | 2.865          | 1.790          | 2.528          |

| <b>C. Other Program Funding Summary (\$ in Millions)</b> |                |                |                               |                              |                                |                |                |                |                |                                   |                   |
|--|----------------|----------------|-------------------------------|------------------------------|--------------------------------|----------------|----------------|----------------|----------------|-----------------------------------|-------------------|
| <u>Line Item</u>   | <u>FY 2020</u> | <u>FY 2021</u> | <u>FY 2022</u><br><u>Base</u> | <u>FY 2022</u><br><u>OCO</u> | <u>FY 2022</u><br><u>Total</u> | <u>FY 2023</u> | <u>FY 2024</u> | <u>FY 2025</u> | <u>FY 2026</u> | <u>Cost To</u><br><u>Complete</u> | <u>Total Cost</u> |
| • AZ3110: <i>Aircrew Integrated Systems</i>              | 48.610         | 54.793         | 41.425                        | -                            | 41.425                         | -              | -              | -              | -              | -                                 | -                 |

**Remarks**

**D. Acquisition Strategy**

Air Soldier System Milestone C was conducted in April 2019 for initial capabilities to include: Aircraft-mounted hardware and helmet worn displays that provide integrated helmet capabilities and increase aircrew situational awareness; and, Protective and Survival Soldier Kit items that reduce equipment weight and bulk and improve aircrew mission effectiveness and survivability. Air SS capabilities are being phased into production over time. Efforts for the Air SS program include development, integration, test, and airworthiness qualification of aviator flight display symbology technologies that will increase crew member situational awareness, and aircrew protective and survival equipment that reduces bulk and weight and improves crew station compatibility and mission effectiveness. Air SS includes improvements to the current flight helmet; improvements to the survival gear carriage system; lightweight body armor; environmental protective clothing and personal survival equipment; and a day/night helmet-mounted flight symbology display for UH-60 and CH-47 aviators. Efforts continue to develop deferred capabilities as defined within the Capability Development Document (CDD) to include Aviation Multi-Domain Operation (MDO) enablers and modernization initiatives for protection and situational awareness. These efforts migrate from program/platform-unique hardware and software solutions to common integrated air/ground solutions that align with Network, Soldier Lethality, and FVL modernization priorities

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

| <b>Appropriation/Budget Activity</b> | <b>R-1 Program Element (Number/Name)</b>      | <b>Project (Number/Name)</b>              |
|--------------------------------------|---|---|
| 2040 / 5                             | PE 0604601A / <i>Infantry Support Weapons</i> | S61 / <i>Acis Engineering Development</i> |

Development efforts are conducted using a mix of both Cost and Firm Fixed Price Contracts with industry utilizing full and open competition. Each development effort is individually evaluated and the appropriate contract type is selected in order to appropriately share risk between industry and the government. Risk reduction, developmental, and operational testing are conducted utilizing Reimbursable orders placed with Other Government Agencies under either Project Order Law, Title 41, United States Code, section 6307 or the Economy Act, Title 31, United States Code, section 1535.

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| Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Army |                        |  |             |  |            |         |            |                                    |            |             |            | Date: May 2021 |                  |            |                          |
|--|------------------------|--|-------------|--|------------|---------|------------|------------------------------------|------------|-------------|------------|----------------|------------------|------------|--------------------------|
| Appropriation/Budget Activity                          |                        |  |             | R-1 Program Element (Number/Name)      |            |         |            | Project (Number/Name)              |            |             |            |                |                  |            |                          |
| 2040 / 5   |                        |  |             | PE 0604601A / Infantry Support Weapons |            |         |            | S61 / Acis Engineering Development |            |             |            |                |                  |            |                          |
| Management Services (\$ in Millions)                   |                        |  |             | FY 2020                                |            | FY 2021 |            | FY 2022 Base                       |            | FY 2022 OCO |            | FY 2022 Total  |                  |            |                          |
| Cost Category Item                                     | Contract Method & Type | Performing Activity & Location           | Prior Years | Cost                                   | Award Date | Cost    | Award Date | Cost                               | Award Date | Cost        | Award Date | Cost           | Cost To Complete | Total Cost | Target Value of Contract |
| PM Administration                                      | Allot                  | Various Government : Huntsville, Alabama | 4.196       | 0.163                                  |            | 0.050   |            | 0.064                              |            | -           |            | 0.064          | Continuing       | Continuing | Continuing               |
| <b>Subtotal</b>  |                        |  | 4.196       | 0.163                                  |            | 0.050   |            | 0.064                              |            | -           |            | 0.064          | Continuing       | Continuing | N/A                      |
| Product Development (\$ in Millions)                   |                        |  |             | FY 2020                                |            | FY 2021 |            | FY 2022 Base                       |            | FY 2022 OCO |            | FY 2022 Total  |                  |            |                          |
| Cost Category Item                                     | Contract Method & Type | Performing Activity & Location           | Prior Years | Cost                                   | Award Date | Cost    | Award Date | Cost                               | Award Date | Cost        | Award Date | Cost           | Cost To Complete | Total Cost | Target Value of Contract |
| Air Warrior and Air Soldier System Development         | C/CPFF                 | Various Government : Various Locations   | 63.576      | 0.704                                  |            | 0.683   |            | 2.106                              |            | -           |            | 2.106          | Continuing       | Continuing | Continuing               |
| <b>Subtotal</b>  |                        |  | 63.576      | 0.704                                  |            | 0.683   |            | 2.106                              |            | -           |            | 2.106          | Continuing       | Continuing | N/A                      |
| Support (\$ in Millions)                               |                        |  |             | FY 2020                                |            | FY 2021 |            | FY 2022 Base                       |            | FY 2022 OCO |            | FY 2022 Total  |                  |            |                          |
| Cost Category Item                                     | Contract Method & Type | Performing Activity & Location           | Prior Years | Cost                                   | Award Date | Cost    | Award Date | Cost                               | Award Date | Cost        | Award Date | Cost           | Cost To Complete | Total Cost | Target Value of Contract |
| Matrix Support   | RO                     | Various Government : Various Locations   | 4.454       | 0.021                                  |            | 0.057   |            | 0.058                              |            | -           |            | 0.058          | Continuing       | Continuing | Continuing               |
| <b>Subtotal</b>  |                        |  | 4.454       | 0.021                                  |            | 0.057   |            | 0.058                              |            | -           |            | 0.058          | Continuing       | Continuing | N/A                      |
| Test and Evaluation (\$ in Millions)                   |                        |  |             | FY 2020                                |            | FY 2021 |            | FY 2022 Base                       |            | FY 2022 OCO |            | FY 2022 Total  |                  |            |                          |
| Cost Category Item                                     | Contract Method & Type | Performing Activity & Location           | Prior Years | Cost                                   | Award Date | Cost    | Award Date | Cost                               | Award Date | Cost        | Award Date | Cost           | Cost To Complete | Total Cost | Target Value of Contract |
| Developmental and Operational Testing                  | RO                     | Various Activities : Various Locations   | 17.279      | 1.977                                  |            | 1.000   |            | 0.300                              |            | -           |            | 0.300          | Continuing       | Continuing | Continuing               |
| <b>Subtotal</b>  |                        |  | 17.279      | 1.977                                  |            | 1.000   |            | 0.300                              |            | -           |            | 0.300          | Continuing       | Continuing | N/A                      |

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|---|--------------------|----------------|--|---|--|---------------------|--|---|--|----------------------|-------------------------|-------------------|---------------------------------|
| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2022 Army</b> |                    |                |  |   |  |                     |  | <b>Date:</b> May 2021   |  |                      |                         |                   |                                 |
| <b>Appropriation/Budget Activity</b><br>2040 / 5                  |                    |                |  | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> |  |                     |  | <b>Project (Number/Name)</b><br>S61 / <i>Acis Engineering Development</i> |  |                      |                         |                   |                                 |
|   | <b>Prior Years</b> | <b>FY 2020</b> |  | <b>FY 2021</b>  |  | <b>FY 2022 Base</b> |  | <b>FY 2022 OCO</b>  |  | <b>FY 2022 Total</b> | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
| <b>Project Cost Totals</b>  | 89.505             | 2.865          |  | 1.790   |  | 2.528               |  | -   |  | 2.528                | Continuing              | Continuing        | N/A                             |

Remarks

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

|  |   |   |
|--|---|---|
| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>S61 / <i>Acis Engineering Development</i> |
|--|---|---|

| Event Name  | 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 |  |  |         |  |         |  |  |  |
| Air SS Pre-planned Product Improv (P3I) Phase                             |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |  |  |         |  |         |  |  |  |
| Aircrew Combat Equipment (ACE) Integration and Qualification              |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |  |  |         |  |         |  |  |  |
| ACE Developmental Test/Operational Test (DT/OT)                           |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |  |  |         |  |         |  |  |  |
| ACE Production Decision   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |  |  |         |  |         |  |  |  |
| Deferred Air SS Capabilities Develop & Qual                               |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |  |  |         |  |         |  |  |  |
| Laser Eye Protection (LEP) Integration & Qualification                    |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |  |  |         |  |         |  |  |  |
| LEP DT & OT   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |  |  | DT & OT |  |         |  |  |  |
| LEP Production Decision   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |  |  |         |  |         |  |  |  |
| Enhanced Personal Electronics Development, Integration, and Qualification |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |  |  |         |  |         |  |  |  |
| Next Gen EAWIS Integration & Qualification                                |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |  |  |         |  |         |  |  |  |
| Enhanced Personal Electronics & Next Gen EAWIS DT & OT                    |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |  |  |         |  | DT & OT |  |  |  |
| Enhanced Personal Electronics & Next Gen EAWIS Production Decision        |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |  |  |         |  |         |  |  |  |
| Next Generation Heads Up Display (HUD) Integration & Qualification        |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |  |  |         |  |         |  |  |  |

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

|  |   |   |
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| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>S61 / <i>Acis Engineering Development</i> |
|--|---|---|

Schedule Details

| Events  | Start   |      | End     |      |
|---|---------|------|---------|------|
|   | Quarter | Year | Quarter | Year |
| Air SS Pre-planned Product Improv (P3I) Phase                             | 1       | 2016 | 4       | 2024 |
| Aircrew Combat Equipment (ACE) Integration and Qualification              | 1       | 2017 | 2       | 2020 |
| ACE Developmental Test/Operational Test (DT/OT)                           | 2       | 2020 | 3       | 2021 |
| ACE Production Decision   | 4       | 2021 | 1       | 2022 |
| Deferred Air SS Capabilities Develop & Qual                               | 1       | 2019 | 4       | 2025 |
| Laser Eye Protection (LEP) Integration & Qualification                    | 3       | 2021 | 2       | 2022 |
| LEP DT & OT   | 2       | 2022 | 3       | 2022 |
| LEP Production Decision   | 4       | 2022 | 4       | 2022 |
| Enhanced Personal Electronics Development, Integration, and Qualification | 3       | 2021 | 1       | 2023 |
| Next Gen EAWIS Integration & Qualification                                | 2       | 2022 | 1       | 2023 |
| Enhanced Personal Electronics & Next Gen EAWIS DT & OT                    | 2       | 2023 | 3       | 2023 |
| Enhanced Personal Electronics & Next Gen EAWIS Production Decision        | 4       | 2023 | 4       | 2023 |
| Next Generation Heads Up Display (HUD) Integration & Qualification        | 1       | 2024 | 4       | 2026 |

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|--|--------------------|----------------|----------------|---------------------|---|----------------------|----------------|----------------|---|-----------------------|-------------------------|-------------------|
| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Army |                    |                |                |                     |   |                      |                |                |   | <b>Date:</b> May 2021 |                         |                   |
| <b>Appropriation/Budget Activity</b><br>2040 / 5                   |                    |                |                |                     | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> |                      |                |                | <b>Project (Number/Name)</b><br>S63 / <i>Individual Weapons Engineering Development</i> |                       |                         |                   |
| <b>COST (\$ in Millions)</b>                                       | <b>Prior Years</b> | <b>FY 2020</b> | <b>FY 2021</b> | <b>FY 2022 Base</b> | <b>FY 2022 OCO</b>  | <b>FY 2022 Total</b> | <b>FY 2023</b> | <b>FY 2024</b> | <b>FY 2025</b>  | <b>FY 2026</b>        | <b>Cost To Complete</b> | <b>Total Cost</b> |
| S63: <i>Individual Weapons Engineering Development</i>             | -                  | 2.586          | 4.214          | 3.651               | -   | 3.651                | -              | -              | -   | -                     | -                       | -                 |
| Quantity of RDT&E Articles   | -                  | -              | -              | -                   | -   | -                    | -              | -              | -   | -                     |                         |                   |

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

The Individual Weapons Engineering Development program provides funds to transition components or prototypes from Budget Activity 4 (BA 4) Element (PE) 0603827A Soldier Systems - Advanced Development Project S54 Small Arms Improvement Program and other domestic and foreign sources of small arms weapon systems to demonstrate, test and evaluate capability near or at planned operational requirements. The Maneuver Center of Excellence (MCoE), Fort Benning, GA (User Community) identifies the Individual Weapons Engineering Development as a critical capability gap for our Soldiers in combat and Soldier Lethality Cross Functional Team (CFT) has assumed this need as a task. Small arms systems include weapons up to 40 millimeter (mm) in caliber. Current and future efforts focus on system improvements designed to enhance lethality, target acquisition, fire control, usability, training effectiveness and reliability of weapons to include ammunition when developing and/or evaluating standard and non-standard weapons. Focus areas include system development, integration (to include human-systems), demonstration, test and evaluate components, prototypes and operational system prototypes of small arms weapon systems and/or enhancements. Benefits include continuous improvements to small arms weapon systems, fire control equipment, optics, gun barrels, ancillary equipment, training devices, component mounts, weapon mounts, and weapon/ammunition interface of current small arms fleet or new weapon systems.

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

|  | <b>FY 2020</b> | <b>FY 2021</b> | <b>FY 2022</b> |
|--|----------------|----------------|----------------|
| <b>Title:</b> Design and Development   | -              | 3.202          | 2.713          |
| <b>FY 2021 Plans:</b><br>New and Legacy Weapon Design and Product Development: Continue to focus on weapon design and development utilizing current state-of-the-art technologies and integration of those technologies for individual weapons across the spectrum of small arms from pistols through rifles and grenade launchers. Evaluation will focus on terminal effects and those technologies utilized to achieve on-target effects, as well as increase sustainability, reliability, and producibility and will include advanced combat optics and improvement of small arms munitions.          |                |                |                |
| <b>FY 2022 Plans:</b><br>New and Legacy Weapon Assessment and Product Development: Will continue to focus on weapon design and development utilizing current state-of-the-art technologies and integration of those technologies for individual weapons across the spectrum of small arms from pistols through rifles and grenade launchers. Evaluation will focus on terminal effects and those technologies utilized to achieve on-target effects, as well as increase sustainability, reliability, and producibility and will include advanced combat optics and improvement of small arms munitions. |                |                |                |
| <b>FY 2021 to FY 2022 Increase/Decrease Statement:</b>   |                |                |                |

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|--|---|---|
| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Army |   | <b>Date:</b> May 2021   |
| <b>Appropriation/Budget Activity</b><br>2040 / 5                   | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>S63 / <i>Individual Weapons Engineering Development</i> |

| <b>B. Accomplishments/Planned Programs (\$ in Millions)</b>   | <b>FY 2020</b> | <b>FY 2021</b> | <b>FY 2022</b> |
|---|----------------|----------------|----------------|
| FY22 Decrease due to reduction in overall funding.  |                |                |                |
| <b>Title:</b> Testing and Evaluation<br><b>FY 2021 Plans:</b><br>New and Legacy Weapon Testing and Evaluation: Continue to test and evaluate new technology that can lead to enhancements of current and legacy weapon systems or create new weapon systems, as well as advanced combat optics and improvement of small arms munitions.<br><b>FY 2022 Plans:</b><br>New and Legacy Weapon Testing and Evaluation: Will continue to test and evaluate new technology that can lead to enhancements of current and legacy weapon systems or create new weapon systems, as well as advanced combat optics and improvement of small arms munitions.<br><b>FY 2021 to FY 2022 Increase/Decrease Statement:</b><br>FY22 Decrease due to reduction in overall funding. | -              | 1.012          | 0.938          |
| <b>Title:</b> Small Arms Weapon Systems Enhancements<br><b>Description:</b> Enhancements and development of small arms weapon systems   | 2.466          | -              | -              |
| <b>Title:</b> Ammunition<br><b>Description:</b> Improvement of small arms ammunition  | 0.050          | -              | -              |
| <b>Title:</b> Combat Optics<br><b>Description:</b> Improvement of combat optics   | 0.020          | -              | -              |
| <b>Title:</b> Research and Analysis<br><b>Description:</b> Market Research and Cost Benefit Analysis  | 0.050          | -              | -              |
| <b>Accomplishments/Planned Programs Subtotals</b>   | 2.586          | 4.214          | 3.651          |

| <b>C. Other Program Funding Summary (\$ in Millions)</b> |                |                |                         |                        |                          |                |                |                |                |                             |                   |
|--|----------------|----------------|-------------------------|------------------------|--------------------------|----------------|----------------|----------------|----------------|-----------------------------|-------------------|
| <b>Line Item</b>   | <b>FY 2020</b> | <b>FY 2021</b> | <b>FY 2022<br/>Base</b> | <b>FY 2022<br/>OCO</b> | <b>FY 2022<br/>Total</b> | <b>FY 2023</b> | <b>FY 2024</b> | <b>FY 2025</b> | <b>FY 2026</b> | <b>Cost To<br/>Complete</b> | <b>Total Cost</b> |
| • S54: <i>Small Arms Improvement</i>                     | 13.956         | 15.495         | 6.911                   | -                      | 6.911                    | -              | -              | -              | -              | -                           | -                 |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Army |   | <b>Date:</b> May 2021   |
| <b>Appropriation/Budget Activity</b><br>2040 / 5                   | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>S63 / <i>Individual Weapons Engineering Development</i> |

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

| Line Item   | FY 2020 | FY 2021 | FY 2022 | FY 2022 | FY 2022 | FY 2023 | FY 2024 | FY 2025 | FY 2026 | Cost To  |            |
|---|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|------------|
|   |         |         | Base    | OCO     | Total   |         |         |         |         | Complete | Total Cost |
| • G01507: <i>COMPACT SEMI-AUTOMATIC SNIPER SYSTEM</i>       | 9.860   | 0.999   | -       | -       | -       | -       | -       | -       | -       | -        | -          |
| • G13503: <i>M4A1 CARBINE</i>                               | 31.514  | 5.411   | 4.434   | -       | 4.434   | -       | -       | -       | -       | -        | -          |
| • GB3007: <i>M4 Carbine Mods</i>                            | 17.595  | 4.824   | -       | -       | -       | -       | -       | -       | -       | -        | -          |
| • G01501: <i>XM320 Grenade Launcher Module (GLM)</i>        | 0.717   | 5.969   | 8.666   | -       | 8.666   | -       | -       | -       | -       | -        | -          |
| • G15325: <i>Handgun</i>                                    | 6.422   | 4.662   | 4.930   | -       | 4.930   | -       | -       | -       | -       | -        | -          |
| • GL3200: <i>Items Less Than \$5.0m (WOCV-WTCV)</i>         | 3.066   | 2.763   | 1.068   | -       | 1.068   | -       | -       | -       | -       | -        | -          |
| • GC0925: <i>Modifications Less Than \$5.0m (WOCV-WTCV)</i> | 5.187   | 2.604   | -       | -       | -       | -       | -       | -       | -       | -        | -          |

**Remarks**

In support of Small Arms Requirements, components or prototypes developed in BA 4 PE 0603827A Soldier Systems - Advanced Development Project S54 Small Arms Improvement Program is transitioned to BA 5 PE 0604601A Infantry Support Weapons Project S63 Individual Weapons Engineering Development to conduct engineering and manufacturing development. Once the component, prototype or operational prototype achieves Milestone C and type classification the item transitions to small arms weapon systems production or modification program.

In FY 2022, funding in the amount of \$0.366 million for manpower was realigned to Operations and Maintenance. Program support costs have been accurately updated to reflect the realignments.

**D. Acquisition Strategy**

Primary strategy is to mature and finalize design efforts, award Research, Development, Test and Evaluation (RDT&E) Defense Ordnance Technology Consortium (DOTC) and Other Transaction Authority (OTA) type hardware contracts. Test and evaluate systems that result in type classification, material release, and follow-on production contract awards.

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| Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Army |                        |   |             |  |            |         |            |  |            |             |            | Date: May 2021 |                  |            |                          |
|--|------------------------|---|-------------|--|------------|---------|------------|--|------------|-------------|------------|----------------|------------------|------------|--------------------------|
| Appropriation/Budget Activity                          |                        |   |             | R-1 Program Element (Number/Name)      |            |         |            | Project (Number/Name)                            |            |             |            |                |                  |            |                          |
| 2040 / 5   |                        |   |             | PE 0604601A / Infantry Support Weapons |            |         |            | S63 / Individual Weapons Engineering Development |            |             |            |                |                  |            |                          |
| Management Services (\$ in Millions)                   |                        |   |             | FY 2020                                |            | FY 2021 |            | FY 2022 Base                                     |            | FY 2022 OCO |            | FY 2022 Total  |                  |            |                          |
| Cost Category Item                                     | Contract Method & Type | Performing Activity & Location                            | Prior Years | Cost                                   | Award Date | Cost    | Award Date | Cost   | Award Date | Cost        | Award Date | Cost           | Cost To Complete | Total Cost | Target Value of Contract |
| Program Management                                     | Allot                  | PM Soldier Weapons, : Picatinny Arsenal                   | 10.531      | 0.035                                  | Mar 2020   | 0.050   | Mar 2021   | 0.050  | Mar 2022   | -           |            | 0.050          | Continuing       | Continuing | Continuing               |
| Travel   | MIPR                   | PM Soldier Weapons, : Picatinny Arsenal                   | 1.537       | 0.047                                  | Mar 2020   | 0.062   | Mar 2021   | 0.010  | Mar 2022   | -           |            | 0.010          | Continuing       | Continuing | Continuing               |
| FY2019 SBIR / STTR Transfer                            | FFRDC                  | Army Budget Office : Pentagon, Washington DC              | 0.211       | -                                      |            | -       |            | -  |            | -           |            | -              | Continuing       | Continuing | Continuing               |
| FY 2019 Rescission                                     | TBD                    | Army Budget Office : Pentagon                             | 0.910       | -                                      |            | -       |            | -  |            | -           |            | -              | 0.000            | 0.910      | -                        |
| <b>Subtotal</b>  |                        |   | 13.189      | 0.082                                  |            | 0.112   |            | 0.060  |            | -           |            | 0.060          | Continuing       | Continuing | N/A                      |
| Product Development (\$ in Millions)                   |                        |   |             | FY 2020                                |            | FY 2021 |            | FY 2022 Base                                     |            | FY 2022 OCO |            | FY 2022 Total  |                  |            |                          |
| Cost Category Item                                     | Contract Method & Type | Performing Activity & Location                            | Prior Years | Cost                                   | Award Date | Cost    | Award Date | Cost   | Award Date | Cost        | Award Date | Cost           | Cost To Complete | Total Cost | Target Value of Contract |
| Fabrication  | Various                | Various : Multiple Contractors                            | 4.120       | -                                      |            | 1.220   | Apr 2021   | 1.050  | Apr 2022   | -           |            | 1.050          | Continuing       | Continuing | Continuing               |
| Hardware Development                                   | MIPR                   | Army Research Development Engineering Centers, : Multiple | 17.240      | -                                      |            | 1.220   | Apr 2021   | 1.050  | Apr 2022   | -           |            | 1.050          | Continuing       | Continuing | Continuing               |
| <b>Subtotal</b>  |                        |   | 21.360      | -                                      |            | 2.440   |            | 2.100  |            | -           |            | 2.100          | Continuing       | Continuing | N/A                      |
| Support (\$ in Millions)                               |                        |   |             | FY 2020                                |            | FY 2021 |            | FY 2022 Base                                     |            | FY 2022 OCO |            | FY 2022 Total  |                  |            |                          |
| Cost Category Item                                     | Contract Method & Type | Performing Activity & Location                            | Prior Years | Cost                                   | Award Date | Cost    | Award Date | Cost   | Award Date | Cost        | Award Date | Cost           | Cost To Complete | Total Cost | Target Value of Contract |
| Engineering  | MIPR                   | Army Research Development                                 | 68.021      | 0.273                                  | Mar 2020   | 0.400   | Mar 2021   | 0.391  | Mar 2022   | -           |            | 0.391          | Continuing       | Continuing | Continuing               |

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| Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Army |                        |   |             |  |            |         |            |  |            |             |            | Date: May 2021 |                  |            |                          |
|--|------------------------|---|-------------|--|------------|---------|------------|--|------------|-------------|------------|----------------|------------------|------------|--------------------------|
| Appropriation/Budget Activity                          |                        |   |             | R-1 Program Element (Number/Name)      |            |         |            | Project (Number/Name)                            |            |             |            |                |                  |            |                          |
| 2040 / 5   |                        |   |             | PE 0604601A / Infantry Support Weapons |            |         |            | S63 / Individual Weapons Engineering Development |            |             |            |                |                  |            |                          |
| Support (\$ in Millions)                               |                        |   |             | FY 2020                                |            | FY 2021 |            | FY 2022 Base                                     |            | FY 2022 OCO |            | FY 2022 Total  |                  |            |                          |
| Cost Category Item                                     | Contract Method & Type | Performing Activity & Location                              | Prior Years | Cost                                   | Award Date | Cost    | Award Date | Cost   | Award Date | Cost        | Award Date | Cost           | Cost To Complete | Total Cost | Target Value of Contract |
|  |                        | Engineering Centers, : Multiple                             |             |  |            |         |            |  |            |             |            |                |                  |            |                          |
| Logistics  | MIPR                   | TACOM, : Warren   | 5.070       | 0.108                                  | Mar 2020   | 0.125   | Mar 2021   | 0.100  | Mar 2022   | -           |            | 0.100          | Continuing       | Continuing | Continuing               |
| Human Research and Engineering                         | MIPR                   | Army Research Laboratory, : Aberdeen Proving Ground         | 3.995       | 0.108                                  | Mar 2020   | 0.125   | Mar 2021   | 0.100  | Mar 2022   | -           |            | 0.100          | Continuing       | Continuing | Continuing               |
| <b>Subtotal</b>  |                        |   | 77.086      | 0.489                                  |            | 0.650   |            | 0.591  |            | -           |            | 0.591          | Continuing       | Continuing | N/A                      |
| Test and Evaluation (\$ in Millions)                   |                        |   |             | FY 2020                                |            | FY 2021 |            | FY 2022 Base                                     |            | FY 2022 OCO |            | FY 2022 Total  |                  |            |                          |
| Cost Category Item                                     | Contract Method & Type | Performing Activity & Location                              | Prior Years | Cost                                   | Award Date | Cost    | Award Date | Cost   | Award Date | Cost        | Award Date | Cost           | Cost To Complete | Total Cost | Target Value of Contract |
| Developmental Testing                                  | MIPR                   | Army Developmental Test Command, : Aberdeen Proving Ground  | 26.579      | 0.685                                  | Mar 2020   | 0.360   | Mar 2021   | 0.300  | Mar 2022   | -           |            | 0.300          | Continuing       | Continuing | Continuing               |
| Operational Testing                                    | MIPR                   | Army Test and Evaluation Command, : Aberdeen Proving Ground | 17.000      | 0.995                                  | Mar 2020   | 0.350   | Mar 2021   | 0.300  | Mar 2022   | -           |            | 0.300          | Continuing       | Continuing | Continuing               |
| Validation Testing                                     | MIPR                   | Army Test and Evaluation Centers, : Multiple                | 9.972       | 0.335                                  | Mar 2020   | 0.302   | Mar 2021   | 0.300  | Mar 2022   | -           |            | 0.300          | Continuing       | Continuing | Continuing               |
| <b>Subtotal</b>  |                        |   | 53.551      | 2.015                                  |            | 1.012   |            | 0.900  |            | -           |            | 0.900          | Continuing       | Continuing | N/A                      |
| <b>Project Cost Totals</b>                             |                        |   | 165.186     | 2.586                                  |            | 4.214   |            | 3.651  |            | -           |            | 3.651          | Continuing       | Continuing | N/A                      |
| <b>Remarks</b>   |                        |   |             |  |            |         |            |  |            |             |            |                |                  |            |                          |

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| <b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2022 Army</b> |   | <b>Date: May 2021</b>   |
| <b>Appropriation/Budget Activity</b><br>2040 / 5             | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>S63 / <i>Individual Weapons Engineering Development</i> |

| Event Name   | 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 |
| DESIGN AND DEVELOPMENT                                 | [Grey]  |   |   |   | [Blue]  |   |   |   | [Blue]  |   |   |   | [Blue]  |   |   |   | [Blue]  |   |   |   | [Blue]  |   |   |   |         |   |   |   |
| TEST AND EVALUATION                                    |         |   |   |   | [Blue]  |   |   |   | [Blue]  |   |   |   | [Blue]  |   |   |   | [Blue]  |   |   |   | [Blue]  |   |   |   |         |   |   |   |
| <b>NEW WEAPON SYSTEMS</b>                              | [Grey]  |   |   |   | [Grey]  |   |   |   | [White] |   |   |   | [White] |   |   |   | [White] |   |   |   | [White] |   |   |   |         |   |   |   |
| New Weapon Systems Evaluations and Assessments         |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   | [Blue]  |   |   |   |
| Sub-Compact Weapons                                    |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   | [Blue]  |   |   |   |
| <b>SMALL ARMS WEAPON SYSTEMS ENHANCEMENTS</b>          | [Grey]  |   |   |   | [Grey]  |   |   |   | [White] |   |   |   | [White] |   |   |   | [White] |   |   |   | [White] |   |   |   |         |   |   |   |
| Small Business Innovation Research (SBIR) Enhancements |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   | [Blue]  |   |   |   |
| Adaptive Lubricious Coatings                           |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   | [Blue]  |   |   |   |
| Current and Legacy Weapon Improvements                 |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   | [Blue]  |   |   |   |
| <b>AMMUNITION</b>                                      | [Grey]  |   |   |   | [Grey]  |   |   |   | [White] |   |   |   | [White] |   |   |   | [White] |   |   |   | [White] |   |   |   |         |   |   |   |
| Ammunition Upgrades                                    |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   | [Blue]  |   |   |   |
| <b>COMBAT OPTICS</b>                                   | [Grey]  |   |   |   | [Grey]  |   |   |   | [White] |   |   |   | [White] |   |   |   | [White] |   |   |   | [White] |   |   |   |         |   |   |   |
| Advanced Combat Optics                                 |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   | [Blue]  |   |   |   |

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| <b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2022 Army</b> |   |   | <b>Date: May 2021</b> |
| <b>Appropriation/Budget Activity</b><br>2040 / 5             | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>S63 / <i>Individual Weapons Engineering Development</i> |                       |

| Event Name                          | 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 |
| <b>RESEARCH AND ANALYSIS</b>        |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Research and Analysis of Small Arms |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |

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| <b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2022 Army |   | <b>Date:</b> May 2021   |
| <b>Appropriation/Budget Activity</b><br>2040 / 5              | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>S63 / <i>Individual Weapons Engineering Development</i> |

Schedule Details

| Events   | Start   |      | End     |      |
|--|---------|------|---------|------|
|  | Quarter | Year | Quarter | Year |
| DESIGN AND DEVELOPMENT                                 | 1       | 2021 | 4       | 2026 |
| TEST AND EVALUATION                                    | 1       | 2021 | 4       | 2026 |
| NEW WEAPON SYSTEMS                                     | 1       | 2007 | 4       | 2026 |
| New Weapon Systems Evaluations and Assessments         | 1       | 2018 | 4       | 2020 |
| Sub-Compact Weapons                                    | 1       | 2018 | 4       | 2020 |
| Squad Designated Marksman Rifle (SDMR)                 | 1       | 2014 | 4       | 2019 |
| Individual Carbine Competition                         | 1       | 2010 | 4       | 2013 |
| Modular Handgun System (MHS)                           | 1       | 2012 | 4       | 2018 |
| Precision Sniper Rifle (PSR)                           | 1       | 2015 | 4       | 2016 |
| SMALL ARMS WEAPON SYSTMS ENHANCEMENTS                  | 1       | 2008 | 4       | 2020 |
| Small Business Innovation Research (SBIR) Enhancements | 1       | 2017 | 4       | 2020 |
| Weapon Systems and Accessories Enhancements            | 1       | 2017 | 4       | 2019 |
| Compact Semi-Automatic Sniper System (CSASS)           | 1       | 2015 | 4       | 2016 |
| Powered Rail now known as Intelligent Rail             | 1       | 2013 | 4       | 2016 |
| Adaptive Lubricious Coatings                           | 1       | 2018 | 4       | 2020 |
| Current and Legacy Weapon Improvements                 | 1       | 2020 | 4       | 2020 |
| AMMUNITION   | 1       | 2008 | 4       | 2020 |
| XM1112 40MM Airburst Non-Lethal Munitions              | 1       | 2010 | 4       | 2016 |
| Ammunition Upgrades                                    | 1       | 2008 | 4       | 2020 |
| COMBAT OPTICS  | 1       | 2008 | 4       | 2020 |
| Advanced Combat Optics                                 | 1       | 2020 | 4       | 2020 |
| Mounted Machine Gun Optics (MMO)                       | 1       | 2015 | 4       | 2016 |

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

|  |   |   |
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| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>S63 / <i>Individual Weapons Engineering Development</i> |
|--|---|---|

| Events  | Start   |      | End     |      |
|---|---------|------|---------|------|
|   | Quarter | Year | Quarter | Year |
| Squad Fire Control Optic                                      | 1       | 2014 | 4       | 2015 |
| Grenadier Sighting System (GSS) for the M320 Grenade Launcher | 1       | 2009 | 4       | 2019 |
| Rifle Combat Optic (RCO Technology Refresh                    | 1       | 2017 | 4       | 2019 |
| Intelligent Rail  | 1       | 2017 | 4       | 2018 |
| Optics Upgrades   | 1       | 2018 | 4       | 2019 |
| RESEARCH AND ANALYSIS   | 1       | 2012 | 4       | 2020 |
| Research and Analysis of Small Arms                           | 1       | 2015 | 4       | 2020 |

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|--|--------------------|----------------|----------------|---------------------|---|----------------------|----------------|----------------|---|-----------------------|-------------------------|-------------------|
| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Army |                    |                |                |                     |   |                      |                |                |   | <b>Date:</b> May 2021 |                         |                   |
| <b>Appropriation/Budget Activity</b><br>2040 / 5                   |                    |                |                |                     | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> |                      |                |                | <b>Project (Number/Name)</b><br>S70 / <i>Personnel Recovery Support System (PRSS)</i> |                       |                         |                   |
| <b>COST (\$ in Millions)</b>                                       | <b>Prior Years</b> | <b>FY 2020</b> | <b>FY 2021</b> | <b>FY 2022 Base</b> | <b>FY 2022 OCO</b>  | <b>FY 2022 Total</b> | <b>FY 2023</b> | <b>FY 2024</b> | <b>FY 2025</b>  | <b>FY 2026</b>        | <b>Cost To Complete</b> | <b>Total Cost</b> |
| <i>S70: Personnel Recovery Support System (PRSS)</i>               | -                  | -              | -              | 3.132               | -   | 3.132                | -              | -              | -   | -                     | -                       | -                 |
| Quantity of RDT&E Articles   | -                  | -              | -              | -                   | -   | -                    | -              | -              | -   | -                     |                         |                   |

**Note**

This is a new start in FY 2022.

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

Provides system research, development and testing of the Personal Recovery Support System (PRSS)/Personnel Recovery Support Equipment (PRSE) supporting operations to report and locate isolated, missing, detained or captured (IMDC) Soldiers. This project provides the continued maturation of PRSS products that enable operations to report and locate isolated Soldiers. The PRSS program consists of the enhancement of existing products to ensure continued successful interoperability within the relevant theater of operations and the Continental United States (CONUS), and testing of the devices that provide Low Probability of Intercept (LPI)/Low Probability of Detection (LPD).

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

|  | <b>FY 2020</b> | <b>FY 2021</b> | <b>FY 2022</b> |
|--|----------------|----------------|----------------|
| <b>Title:</b> Personnel Recovery Systems   | -              | -              | 3.132          |
| <b>FY 2022 Plans:</b><br>Begins evaluation, development, and testing of of component replacements, enhancements, and operational security measures for Classified Personnel Recovery Support Equipment (PRSE).   |                |                |                |
| <b>FY 2021 to FY 2022 Increase/Decrease Statement:</b><br>FY2021 to FY2022 increase is due to program re-phasing to accelerate development and test of new waveforms and hardware for the Classified PRSE system in order to ensure interoperability, mitigate potential security compromises, and address obsolescence. |                |                |                |
| <b>Accomplishments/Planned Programs Subtotals</b>  | -              | -              | 3.132          |

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

| <b>Line Item</b>  | <b>FY 2020</b> | <b>FY 2021</b> | <b>FY 2022 Base</b> | <b>FY 2022 OCO</b> | <b>FY 2022 Total</b> | <b>FY 2023</b> | <b>FY 2024</b> | <b>FY 2025</b> | <b>FY 2026</b> | <b>Cost To Complete</b> | <b>Total Cost</b> |
|---|----------------|----------------|---------------------|--------------------|----------------------|----------------|----------------|----------------|----------------|-------------------------|-------------------|
| • G01101: <i>Personnel Recovery Support System (PRSS)</i> | 9.382          | 8.346          | 9.741               | -                  | 9.741                | -              | -              | -              | -              | -                       | -                 |

**Remarks**

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| Exhibit R-2A, RDT&E Project Justification: PB 2022 Army |  | Date: May 2021   |
| Appropriation/Budget Activity<br>2040 / 5               | R-1 Program Element (Number/Name)<br>PE 0604601A / <i>Infantry Support Weapons</i> | Project (Number/Name)<br>S70 / <i>Personnel Recovery Support System (PRSS)</i> |

**D. Acquisition Strategy**

Execute Personnel Recovery program development efforts for performance optimization through contracts with industry and reimbursable support agreements with other Governmental agencies, labs, and Federally Funded Research and Development Centers. Perform continuing development and test of new waveforms and hardware to ensure successful interoperability for personnel recovery, and to mitigate potential security compromises to the Personnel Recovery Support Equipment and Personnel Recovery Support System programs.

Future program strategy is to adapt and test Personnel Recovery program products for integration onto various Army and sister service aerial platforms in order to increase coverage beyond current theaters of operation.

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| Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Army    |                        |   |             |  |            |         |            |  |            |             |            | Date: May 2021 |                  |            |                          |
|---|------------------------|---|-------------|--|------------|---------|------------|--|------------|-------------|------------|----------------|------------------|------------|--------------------------|
| Appropriation/Budget Activity                             |                        |   |             | R-1 Program Element (Number/Name)      |            |         |            | Project (Number/Name)                          |            |             |            |                |                  |            |                          |
| 2040 / 5  |                        |   |             | PE 0604601A / Infantry Support Weapons |            |         |            | S70 / Personnel Recovery Support System (PRSS) |            |             |            |                |                  |            |                          |
| Management Services (\$ in Millions)                      |                        |   |             | FY 2020                                |            | FY 2021 |            | FY 2022 Base                                   |            | FY 2022 OCO |            | FY 2022 Total  |                  |            |                          |
| Cost Category Item  | Contract Method & Type | Performing Activity & Location            | Prior Years | Cost                                   | Award Date | Cost    | Award Date | Cost   | Award Date | Cost        | Award Date | Cost           | Cost To Complete | Total Cost | Target Value of Contract |
| PM Administration   | Allot                  | Various Government : Huntsville, Alabama  | 0.988       | -                                      |            | -       |            | 0.060  |            | -           |            | 0.060          | Continuing       | Continuing | Continuing               |
| <b>Subtotal</b>   |                        |   | 0.988       | -                                      |            | -       |            | 0.060  |            | -           |            | 0.060          | Continuing       | Continuing | N/A                      |
| Product Development (\$ in Millions)                      |                        |   |             | FY 2020                                |            | FY 2021 |            | FY 2022 Base                                   |            | FY 2022 OCO |            | FY 2022 Total  |                  |            |                          |
| Cost Category Item  | Contract Method & Type | Performing Activity & Location            | Prior Years | Cost                                   | Award Date | Cost    | Award Date | Cost   | Award Date | Cost        | Award Date | Cost           | Cost To Complete | Total Cost | Target Value of Contract |
| Personnel Recovery System Development Systems Engineering | MIPR                   | Various Organizations : Various Locations | 8.788       | -                                      |            | -       |            | 3.002  |            | -           |            | 3.002          | Continuing       | Continuing | Continuing               |
| <b>Subtotal</b>   |                        |   | 8.788       | -                                      |            | -       |            | 3.002  |            | -           |            | 3.002          | Continuing       | Continuing | N/A                      |
| Support (\$ in Millions)                                  |                        |   |             | FY 2020                                |            | FY 2021 |            | FY 2022 Base                                   |            | FY 2022 OCO |            | FY 2022 Total  |                  |            |                          |
| Cost Category Item  | Contract Method & Type | Performing Activity & Location            | Prior Years | Cost                                   | Award Date | Cost    | Award Date | Cost   | Award Date | Cost        | Award Date | Cost           | Cost To Complete | Total Cost | Target Value of Contract |
| Matrix Support  | MIPR                   | Various Organizations : Various Locations | 2.348       | -                                      |            | -       |            | 0.070  |            | -           |            | 0.070          | Continuing       | Continuing | Continuing               |
| <b>Subtotal</b>   |                        |   | 2.348       | -                                      |            | -       |            | 0.070  |            | -           |            | 0.070          | Continuing       | Continuing | N/A                      |
| Test and Evaluation (\$ in Millions)                      |                        |   |             | FY 2020                                |            | FY 2021 |            | FY 2022 Base                                   |            | FY 2022 OCO |            | FY 2022 Total  |                  |            |                          |
| Cost Category Item  | Contract Method & Type | Performing Activity & Location            | Prior Years | Cost                                   | Award Date | Cost    | Award Date | Cost   | Award Date | Cost        | Award Date | Cost           | Cost To Complete | Total Cost | Target Value of Contract |
| Developmental Testing/ Operational Testing                | MIPR                   | Various Organizations : Various Locations | 3.509       | -                                      |            | -       |            | -  |            | -           |            | -              | Continuing       | Continuing | Continuing               |
| <b>Subtotal</b>   |                        |   | 3.509       | -                                      |            | -       |            | -  |            | -           |            | -              | Continuing       | Continuing | N/A                      |



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| <b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2022 Army</b> |   | <b>Date: May 2021</b>   |
| <b>Appropriation/Budget Activity</b><br>2040 / 5             | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>S70 / <i>Personnel Recovery Support System (PRSS)</i> |

| Event Name   | 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 |
| Personnel Recovery (PR) Development Oversight                |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| PR Development and Test                                      |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Next Generation PR Upgrades and Adaptations to New Platforms |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |

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| <b>Exhibit R-4A, RDT&amp;E Schedule Details: PB 2022 Army</b> |   | <b>Date: May 2021</b>   |
| <b>Appropriation/Budget Activity</b><br>2040 / 5              | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>S70 / <i>Personnel Recovery Support System (PRSS)</i> |

Schedule Details

| Events   | Start   |      | End     |      |
|--|---------|------|---------|------|
|  | Quarter | Year | Quarter | Year |
| Personnel Recovery (PR) Development Oversight                | 1       | 2022 | 4       | 2026 |
| PR Development and Test                                      | 3       | 2022 | 4       | 2026 |
| Next Generation PR Upgrades and Adaptations to New Platforms | 3       | 2023 | 4       | 2026 |

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

| Appropriation/Budget Activity<br>2040 / 5 |             |         |         |              | R-1 Program Element (Number/Name)<br>PE 0604601A / Infantry Support Weapons |               |         |         | Project (Number/Name)<br>VS5 / Soldier Protective Equipment |         |                  |            |
|---|-------------|---------|---------|--------------|---|---------------|---------|---------|---|---------|------------------|------------|
| 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 |
| <i>VS5: Soldier Protective Equipment</i>  | -           | 6.355   | 6.478   | 9.172        | -   | 9.172         | -       | -       | -   | -       | -                | -          |
| Quantity of RDT&E Articles                | -           | -       | -       | -            | -   | -             | -       | -       | -   | -       |                  |            |

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

Funding in this project supports the Army's Cross Functional Teams (CFT) initiatives. It supports Engineering and Manufacturing Development (EMD) and full rate production decision reviews of Soldier Protective Equipment. It leverages advancements in technology to continue improvements to the Army's Personal Protective Equipment (PPE) portfolio to include hard and soft body armor components (Vital Torso Protection (VTP) and Torso and Extremity Protection (TEP) respectfully), helmets (Integrated Head Protection System (IHPS) and Next Generation (NG) IHPS, Military Protective Eyewear systems and other personal protective equipment to include female specific design and development. This project will continue to support cross-service initiatives to increase commonality.

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

|  | FY 2020 | FY 2021 | FY 2022 |
|--|---------|---------|---------|
| <b>Title:</b> Soldier Protective Equipment   | 6.355   | 6.478   | 9.172   |
| <b>Description:</b> Project VS5 (Soldier Protective Equipment) supports engineering and manufacturing development of Individual Soldier Ballistic Protection equipment. It will leverage advancements in technology to continue incremental improvements to Personal Protective Equipment (PPE).   |         |         |         |
| <b>FY 2021 Plans:</b><br>Continue to evaluate and develop system and subsystem technologies across the PPE portfolio from emerging ballistic/blast threats. Continue to test ballistic properties of current PPE after exposure to extreme storage conditions for better shelf and service life predictions. Continue Soldier Protection System (SPS) system human factors and environmental/exposure testing, including Cold & Tropical regions, durability, etc. Refine planning for introducing advanced Technology and materials into production processes as these technologies mature.   |         |         |         |
| <b>FY 2022 Plans:</b><br>Evaluate and develop system and subsystem technologies across the PPE portfolio from emerging ballistic/blast threats. Continue to test ballistic properties of current PPE after exposure to extreme storage condition for better shelf and service life predictions. Continue Soldier Protection System (SPS) gender focused human factor evaluations and environmental/exposure testing, including Cold & Tropical regions, and durability testing. Refine planning for introducing advanced Technology and materials into production processes as these technologies mature and enable expanded opportunities associated with gender specific PPE. Improve the PPE test methodologies such as updating and enhancing the Non-Destructive Test Equipment (NDTE) methodology and investigate Transparent Range Increase efforts supporting the Secretary of the Army's directive to identify opportunities for commonality across all Services (Army, Navy, Air Force, Marines, and Coast Guard). |         |         |         |
| <b>FY 2021 to FY 2022 Increase/Decrease Statement:</b>   |         |         |         |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Army | <b>Date:</b> May 2021 |
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|--|---|---|
| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>VS5 / <i>Soldier Protective Equipment</i> |
|--|---|---|

| <b>B. Accomplishments/Planned Programs (\$ in Millions)</b>   | FY 2020 | FY 2021 | FY 2022 |
|---|---------|---------|---------|
| Funding increase in Soldier Protective Equipment portfolio is due to anticipated requirement changes in FY22. |         |         |         |
| <b>Accomplishments/Planned Programs Subtotals</b>   | 6.355   | 6.478   | 9.172   |

| <b>C. Other Program Funding Summary (\$ in Millions)</b> |         |         |                 |                |                  |         |         |         |         |                     |            |
|--|---------|---------|-----------------|----------------|------------------|---------|---------|---------|---------|---------------------|------------|
| Line Item  | FY 2020 | FY 2021 | FY 2022<br>Base | FY 2022<br>OCO | FY 2022<br>Total | FY 2023 | FY 2024 | FY 2025 | FY 2026 | Cost To<br>Complete | Total Cost |
| • VS4: <i>Soldier Protective Equipment</i>               | 2.720   | 2.279   | 4.278           | -              | 4.278            | -       | -       | -       | -       | -                   | -          |

**Remarks**

**D. Acquisition Strategy**  
 Acquisition strategies for these programs vary in methods, and range from: 1) Material Change programs that result in engineering changes to existing systems to; 2) Traditional development programs that include an Engineering and Manufacturing Development phase ranging in duration from 12 to 48 months, depending on the level of design complexity and testing required.

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| Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Army |                        |                                       |             |  |            |         |            |                                    |            |             |            | Date: May 2021 |                  |            |                          |
|--|------------------------|---------------------------------------|-------------|--|------------|---------|------------|------------------------------------|------------|-------------|------------|----------------|------------------|------------|--------------------------|
| Appropriation/Budget Activity                          |                        |                                       |             | R-1 Program Element (Number/Name)      |            |         |            | Project (Number/Name)              |            |             |            |                |                  |            |                          |
| 2040 / 5   |                        |                                       |             | PE 0604601A / Infantry Support Weapons |            |         |            | VS5 / Soldier Protective Equipment |            |             |            |                |                  |            |                          |
| Management Services (\$ in Millions)                   |                        |                                       |             | FY 2020                                |            | FY 2021 |            | FY 2022 Base                       |            | FY 2022 OCO |            | FY 2022 Total  |                  |            |                          |
| Cost Category Item                                     | Contract Method & Type | Performing Activity & Location        | Prior Years | Cost                                   | Award Date | Cost    | Award Date | Cost                               | Award Date | Cost        | Award Date | Cost           | Cost To Complete | Total Cost | Target Value of Contract |
| Program Management Support                             | Allot                  | Various SSV : Various                 | 1.016       | 1.337                                  |            | 0.645   |            | 0.496                              |            | -           |            | 0.496          | Continuing       | Continuing | Continuing               |
| <b>Subtotal</b>  |                        |                                       | 1.016       | 1.337                                  |            | 0.645   |            | 0.496                              |            | -           |            | 0.496          | Continuing       | Continuing | N/A                      |
| Product Development (\$ in Millions)                   |                        |                                       |             | FY 2020                                |            | FY 2021 |            | FY 2022 Base                       |            | FY 2022 OCO |            | FY 2022 Total  |                  |            |                          |
| Cost Category Item                                     | Contract Method & Type | Performing Activity & Location        | Prior Years | Cost                                   | Award Date | Cost    | Award Date | Cost                               | Award Date | Cost        | Award Date | Cost           | Cost To Complete | Total Cost | Target Value of Contract |
| Prototype Contracts                                    | Various                | Various : Various                     | 34.785      | 0.926                                  |            | 0.381   |            | 0.751                              |            | -           |            | 0.751          | Continuing       | Continuing | Continuing               |
| Prod Sys Engineering Spt                               | MIPR                   | Various : Various                     | 8.109       | 1.551                                  |            | 1.875   |            | 2.831                              |            | -           |            | 2.831          | Continuing       | Continuing | Continuing               |
| <b>Subtotal</b>  |                        |                                       | 42.894      | 2.477                                  |            | 2.256   |            | 3.582                              |            | -           |            | 3.582          | Continuing       | Continuing | N/A                      |
| Support (\$ in Millions)                               |                        |                                       |             | FY 2020                                |            | FY 2021 |            | FY 2022 Base                       |            | FY 2022 OCO |            | FY 2022 Total  |                  |            |                          |
| Cost Category Item                                     | Contract Method & Type | Performing Activity & Location        | Prior Years | Cost                                   | Award Date | Cost    | Award Date | Cost                               | Award Date | Cost        | Award Date | Cost           | Cost To Complete | Total Cost | Target Value of Contract |
| Matrix Engineering Spt                                 | MIPR                   | Various : Various                     | 3.729       | 1.025                                  |            | 1.585   |            | 1.435                              |            | -           |            | 1.435          | Continuing       | Continuing | Continuing               |
| <b>Subtotal</b>  |                        |                                       | 3.729       | 1.025                                  |            | 1.585   |            | 1.435                              |            | -           |            | 1.435          | Continuing       | Continuing | N/A                      |
| Test and Evaluation (\$ in Millions)                   |                        |                                       |             | FY 2020                                |            | FY 2021 |            | FY 2022 Base                       |            | FY 2022 OCO |            | FY 2022 Total  |                  |            |                          |
| Cost Category Item                                     | Contract Method & Type | Performing Activity & Location        | Prior Years | Cost                                   | Award Date | Cost    | Award Date | Cost                               | Award Date | Cost        | Award Date | Cost           | Cost To Complete | Total Cost | Target Value of Contract |
| Environmental/HFE                                      | MIPR                   | Various DTC & OTC : Various DTC & OTC | 12.917      | 0.926                                  |            | -       |            | 1.114                              |            | -           |            | 1.114          | Continuing       | Continuing | Continuing               |
| Surveillance Testing - Base Threat/Emerging Threat     | TBD                    | TBD : TBD                             | -           | 0.590                                  |            | 1.992   |            | 2.545                              |            | -           |            | 2.545          | Continuing       | Continuing | Continuing               |
| <b>Subtotal</b>  |                        |                                       | 12.917      | 1.516                                  |            | 1.992   |            | 3.659                              |            | -           |            | 3.659          | Continuing       | Continuing | N/A                      |



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

|  |   |   |
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| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>VS5 / <i>Soldier Protective Equipment</i> |
|--|---|---|

| Event Name   | 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 |
| Test and Qualify Improvements to SPS                             |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| VTP LRIP Production  |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| VTP FRP Decision   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| IHPS FRP   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Transition Combat Eye Protection - Authorized Protective Eyewear |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Transition Combat Eye Protection Durability/Cold Weather Test    |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| SPS System Level Test Technology Insertions                      |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Next Gen IHPS Production   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Novel Fabric for Torso Protection                                |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |
| Non-Destructive Test Equipment                                   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |         |   |   |   |

**UNCLASSIFIED**

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

|  |   |   |
|--|---|---|
| <b>Appropriation/Budget Activity</b><br>2040 / 5 | <b>R-1 Program Element (Number/Name)</b><br>PE 0604601A / <i>Infantry Support Weapons</i> | <b>Project (Number/Name)</b><br>VS5 / <i>Soldier Protective Equipment</i> |
|--|---|---|

Schedule Details

| Events   | Start   |      | End     |      |
|--|---------|------|---------|------|
|  | Quarter | Year | Quarter | Year |
| Test and Qualify Improvements to SPS   | 1       | 2015 | 4       | 2026 |
| VTP LRIP Production  | 1       | 2017 | 1       | 2024 |
| VTP FRP Decision   | 1       | 2020 | 1       | 2020 |
| IHPS FRP   | 1       | 2019 | 1       | 2021 |
| Transition Combat Eye Protection - Authorized Protective Eyewear (APEL) Update | 3       | 2019 | 3       | 2021 |
| Transition Combat Eye Protection Durability/Cold Weather Test                  | 2       | 2019 | 3       | 2021 |
| SPS System Level Test Technology Insertions                                    | 1       | 2017 | 4       | 2026 |
| Next Gen IHPS Production   | 1       | 2021 | 4       | 2025 |
| Novel Fabric for Torso Protection  | 2       | 2021 | 4       | 2024 |
| Non-Destructive Test Equipment   | 1       | 2021 | 1       | 2025 |