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

| <b>Appropriation/Budget Activity</b><br>1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i> |                    |                |                |                     | <b>R-1 Program Element (Number/Name)</b><br>PE 0603635M / <i>Marine Corps Grnd Cmbt/Supt Sys</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> |
| Total Program Element   | 23.100             | 50.057         | 43.457         | 77.065              | -  | 77.065               | -              | -              | -              | -              | -                       | -                 |
| 1558: <i>Armored Reconnaissance Vehicle</i>   | 0.000              | 7.465          | 17.599         | 48.563              | -  | 48.563               | -              | -              | -              | -              | -                       | -                 |
| 2614: <i>SMAW Follow-On</i>   | 23.100             | 0.000          | 0.500          | 0.495               | -  | 0.495                | -              | -              | -              | -              | -                       | -                 |
| 7400: <i>Combat Capability Development Transition</i>   | 0.000              | 42.592         | 25.358         | 28.007              | -  | 28.007               | -              | -              | -              | -              | -                       | -                 |

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

This PE supports the demonstration and validation of Marine Corps Ground/Supporting Arms Systems for utilization in Marine Air-Ground Expeditionary Force amphibious operations. This program is funded under Demonstration & Validation because it develops and integrates hardware for experimental tests related to specific ground weapon systems.

**B. Program Change Summary (\$ in Millions)**

|                                     | <b><u>FY 2020</u></b> | <b><u>FY 2021</u></b> | <b><u>FY 2022 Base</u></b> | <b><u>FY 2022 OCO</u></b> | <b><u>FY 2022 Total</u></b> |
|-------------------------------------|-----------------------|-----------------------|----------------------------|---------------------------|-----------------------------|
| Previous President's Budget         | 51.997                | 189.603               | 203.265                    | -                         | 203.265                     |
| Current President's Budget          | 50.057                | 43.457                | 77.065                     | -                         | 77.065                      |
| Total Adjustments                   | -1.940                | -146.146              | -126.200                   | -                         | -126.200                    |
| • Congressional General Reductions  | -                     | -                     | -                          | -                         | -                           |
| • Congressional Directed Reductions | -                     | -146.146              | -                          | -                         | -                           |
| • Congressional Rescissions         | -                     | -                     | -                          | -                         | -                           |
| • Congressional Adds                | -                     | -                     | -                          | -                         | -                           |
| • Congressional Directed Transfers  | -                     | -                     | -                          | -                         | -                           |
| • Reprogrammings                    | -                     | -                     | -                          | -                         | -                           |
| • SBIR/STTR Transfer                | -1.940                | 0.000                 | -                          | -                         | -                           |
| • Program Adjustments               | 0.000                 | 0.000                 | 62.938                     | -                         | 62.938                      |
| • Rate/Misc Adjustments             | 0.000                 | 0.000                 | -189.138                   | -                         | -189.138                    |

**Change Summary Explanation**

The net increase of \$33.608M from FY 2021 to FY 2022 is primarily due to the following program adjustments within the PE:

- 1) Armored Reconnaissance Vehicle (ARV) increases \$30.964M from FY 2021 to FY 2022 to complete the incrementally funded competitive prototype build with 3 vendors. Initial contract award is scheduled for 4Q FY 2021 and the FY 2022 funds are needed on this non-severable effort to continue the prototype build. The prototypes will inform requirements and the acquisition process and ensure the requirement is affordable, achievable and verifiable prior to the Engineering

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| <b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2022 Navy  |  | <b>Date:</b> May 2021 |
| <b>Appropriation/Budget Activity</b><br>1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>  | <b>R-1 Program Element (Number/Name)</b><br>PE 0603635M / <i>Marine Corps Grnd Cmbt/Supt Sys</i> |                       |
| <p>and Manufacturing Development (EMD) phase. Additional cost drivers in FY 2022 associated with the prototyping phase include completing the purchase of government furnished materials (GFM) and initiating competitive prototype test planning.</p> |  |                       |

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|--|--------------------|----------------|----------------|---------------------|---|----------------------|----------------|----------------|---|-----------------------|-------------------------|-------------------|
| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Navy |                    |                |                |                     |   |                      |                |                |   | <b>Date:</b> May 2021 |                         |                   |
| <b>Appropriation/Budget Activity</b><br>1319 / 4                   |                    |                |                |                     | <b>R-1 Program Element (Number/Name)</b><br>PE 0603635M / Marine Corps Grnd Cmbt/S<br>upt Sys |                      |                |                | <b>Project (Number/Name)</b><br>1558 / Armored Reconnaissance Vehicle |                       |                         |                   |
| <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> |
| 1558: Armored Reconnaissance Vehicle                               | 0.000              | 7.465          | 17.599         | 48.563              | -   | 48.563               | -              | -              | -   | -                     | -                       | -                 |
| Quantity of RDT&E Articles   |                    | -              | -              | -                   | -   | -                    | -              | -              | -   | -                     |                         |                   |

**Note**

In FY 2020, the Armored Reconnaissance Vehicle (ARV) program moved from BA07/PE 0206623M/Project 1557 to BA04/PE 0603635M/Project 1558 in order to align the program to a BA more appropriate for its current acquisition phase.

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

The Advanced Reconnaissance Vehicle is imperative to realizing Marine Corps requirements for Fleet Marine Force 2030. As part of portfolio of reconnaissance, surveillance, and target acquisition systems, ARV will be a purpose-built combat vehicle system, highly mobile on land and water, that can sense, communicate, and fight as the manned hub of a robotic and autonomous systems-enhanced team. Equipped with modern command, control, communications and surveillance systems the ARV will transform the ability of Fleet Marine Forces to sense and communicate within the littoral operating environment by providing a persistent and mobile systems of systems to augment and sustain effective sensor webs and kill chains. The ARV is critical towards the modernization of Marine Corps reconnaissance capability.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

|  | <b>FY 2020</b> | <b>FY 2021</b> | <b>FY 2022 Base</b> | <b>FY 2022 OCO</b> | <b>FY 2022 Total</b> |
|--|----------------|----------------|---------------------|--------------------|----------------------|
| <b>Title:</b> Armored Reconnaissance Vehicle                         | 7.465          | 17.599         | 48.563              | 0.000              | 48.563               |
| <b>Articles:</b>   | -              | 3              | -                   | -                  | -                    |
| <b>FY 2021 Plans:</b>  |                |                |                     |                    |                      |
| -Complete Test on Technology Demonstrator (Ballistic/Platform)       |                |                |                     |                    |                      |
| -Releasing Request For Proposal for Competitive Prototype Agreements |                |                |                     |                    |                      |
| -Awarding Competitive Prototype Development Agreements               |                |                |                     |                    |                      |
| -Initiate Amphibious Combat Vehicle (ACV) Study                      |                |                |                     |                    |                      |
| -Initiate purchase of Government Furnished Materials (GFM)           |                |                |                     |                    |                      |
| <b>FY 2022 Base Plans:</b>   |                |                |                     |                    |                      |
| -Will continue with industry building Competitive Prototype vehicles |                |                |                     |                    |                      |
| -Will continue ACV study   |                |                |                     |                    |                      |
| -Will continue with purchase of GFM                                  |                |                |                     |                    |                      |
| -Will initiate Competitive Prototype test planning                   |                |                |                     |                    |                      |
| <b>FY 2022 OCO Plans:</b>  |                |                |                     |                    |                      |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Navy |  | <b>Date:</b> May 2021  |
| <b>Appropriation/Budget Activity</b><br>1319 / 4                   | <b>R-1 Program Element (Number/Name)</b><br>PE 0603635M / <i>Marine Corps Grnd Cmbt/Supt Sys</i> | <b>Project (Number/Name)</b><br>1558 / <i>Armored Reconnaissance Vehicle</i> |

| <b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>  | <b>FY 2020</b> | <b>FY 2021</b> | <b>FY 2022 Base</b> | <b>FY 2022 OCO</b> | <b>FY 2022 Total</b> |
|--|----------------|----------------|---------------------|--------------------|----------------------|
| N/A  |                |                |                     |                    |                      |
| <b><i>FY 2021 to FY 2022 Increase/Decrease Statement:</i></b>  |                |                |                     |                    |                      |
| Armored Reconnaissance Vehicle (ARV) increases \$30.964M from FY 2021 to FY 2022 to complete the incrementally funded competitive prototype build with 3 vendors. Initial contract award is scheduled for 4QFY21 and the FY22 funds are needed on this non-severable effort to continue the prototype build. The prototypes will inform requirements and the acquisition process and ensure the requirement is affordable, achievable and verifiable prior to the Engineering and Manufacturing Development (EMD) phase. Additional cost drivers in FY22 associated with the prototyping phase include completing the purchase of government furnished materials (GFM) and initiating competitive prototype test planning. |                |                |                     |                    |                      |
| <b>Accomplishments/Planned Programs Subtotals</b>  | 7.465          | 17.599         | 48.563              | 0.000              | 48.563               |

**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> |
|---|----------------|----------------|---------------------|--------------------|----------------------|----------------|----------------|----------------|----------------|-------------------------|-------------------|
| • RDTEN/0603640M/2223: <i>Marine Corps Advanced Tech. Demo.</i> | 13.050         | 1.500          | 0.000               | -                  | 0.000                | -              | -              | -              | -              | -                       | -                 |

**Remarks**

FY20 and FY21 funding is Office of Naval Research (ONR) portion of the cost sharing effort to build Technology Demonstrator vehicles.

**D. Acquisition Strategy**

ARV will leverage Middle Tier Authority to conduct a prototyping phase during FY21-FY23. The intent is to award up to 3 agreements valued at up to \$10.5M each through the Ground Vehicle Systems (GVS) Other Transaction Authority (OTA) which is administrated by the National Advanced Mobility Consortium (NAMC). Each contractor will have 15 months to develop, build and deliver their ARV Competitive Prototype (CP) to support a six (6) month government evaluation. The prototyping phase will enable requirements and acquisition to better refine the total life cycle cost estimate and ensure the requirement is affordable, achievable and verifiable prior to the Engineering and Manufacturing Development (EMD) phase.

The full funding requirement for the MTA prototype effort as outlined in the Report to Congress is below:

FY21: \$17.6M  
 FY22: \$48.6M  
 FY23: \$61.5M

The total cost of the MTA prototyping effort is \$127.7M, and is fully funded in RDT&E.

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Navy |  | <b>Date:</b> May 2021  |
| <b>Appropriation/Budget Activity</b><br>1319 / 4                   | <b>R-1 Program Element (Number/Name)</b><br>PE 0603635M / <i>Marine Corps Grnd Cmbt/Supt Sys</i> | <b>Project (Number/Name)</b><br>1558 / <i>Armored Reconnaissance Vehicle</i> |

Upon successful completion of the prototyping phase, ARV intends to proceed to a Milestone B decision point in FY25. EMD can be contracted through full and open FAR based competition or the USMC may award production under OTA to 1 of the 3 CP vendors with a Milestone C decision in FY28. The program is expected to complete IOC in FY30 and FOC of the base variant in FY33.

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

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| <b>Appropriation/Budget Activity</b><br>1319 / 4 | <b>R-1 Program Element (Number/Name)</b><br>PE 0603635M / Marine Corps Grnd Cmbt/S<br>upt Sys | <b>Project (Number/Name)</b><br>1558 / Armored Reconnaissance Vehicle |
|--|---|---|

| <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          |                  |            |                          |
| System Development & Demo.                  | C/FFP                  | ONR : Arlington, VA            | 0.000       | 4.500   | Jan 2020   | 2.000   | Nov 2020   | 0.000        |            | -           |            | 0.000         | -                | -          | -                        |
| Prototype Manufacturing                     | C/FFP                  | TBD : TBD                      | 0.000       | 0.000   |            | 6.000   | Sep 2021   | 25.500       | Nov 2021   | -           |            | 25.500        | -                | -          | -                        |
| Government Furnish Materials                | C/FFP                  | DLA : Philadelphia, PA         | 0.000       | 0.000   |            | 4.400   | Apr 2021   | 5.297        | Nov 2021   | -           |            | 5.297         | -                | -          | -                        |
| <b>Subtotal</b>                             |                        |                                | 0.000       | 4.500   |            | 12.400  |            | 30.797       |            | -           |            | 30.797        | -                | -          | N/A                      |

**Remarks**  
 The Office of Naval Research (ONR) supports the next generation Armored Reconnaissance Vehicle (ARV) project utilizing the Future Naval Capability (FNC) process in order to develop and demonstrate viable and mature technologies befitting the program's envisioned operational employment. In FY 2021, \$2M is allocated to cost share in the development of Technology Demonstrators and testing which ends 2QFY21. FY 2021 initial prototype manufacturing investment of \$6.0M provides for contractors to order raw materials, labor, and to initiate procurement of vehicle subsystems. \$4.4M is for Government Furnished Materials (GFM) that cannot be purchased by the contractors. FY 2022 increase of \$19.5M is the remaining incremental funding to the 3 vendors to complete prototype vehicles and \$.897M increase to complete GFM procurement.

| <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 Mgmt - LAV                         | MIPR                   | TACOM : Warren, MI             | 0.000       | 2.250   | Dec 2019   | 4.664   | Dec 2020   | 7.841        | Dec 2021   | -           |            | 7.841         | -                | -          | -                        |
| Studies & MS Document Prep.                | MIPR                   | GVSC : Warren, MI              | 0.000       | 0.527   | Nov 2019   | 0.250   | Jul 2021   | 2.756        | Jan 2022   | -           |            | 2.756         | -                | -          | -                        |
| National Advanced Mobility Consortium Fees | MIPR                   | GVSC : Warren, MI              | 0.000       | 0.000   |            | 0.285   | Sep 2021   | 1.211        | Nov 2021   | -           |            | 1.211         | -                | -          | -                        |
| <b>Subtotal</b>                            |                        |                                | 0.000       | 2.777   |            | 5.199   |            | 11.808       |            | -           |            | 11.808        | -                | -          | N/A                      |

**Remarks**  
 The FY 2022 increase of \$6.609M provides additional funding for program management required for the prototyping vendors & associated engineering support. It also funds an ACV study, per Marine Corps direction, to support a decision to move forward with ARV as an ACV MRV or purpose built system, program management support necessary to develop milestone documentation and pay for National Advanced Mobility Consortium (NAMC) fees. The NAMC fees will provide a service for industry engagements/events, administrative support for RFIs (they release and consolidate feedback), and aid in the contracting process. By managing through the consortium, the program office will ensure the vendors have up-to-date security forms for receipt of information as well as manage the terms and conditions portion of the contract.

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

|  |   |   |
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| <b>Appropriation/Budget Activity</b><br>1319 / 4 | <b>R-1 Program Element (Number/Name)</b><br>PE 0603635M / Marine Corps Grnd Cmbt/S<br>upt Sys | <b>Project (Number/Name)</b><br>1558 / Armored Reconnaissance Vehicle |
|--|---|---|

| <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          |                  |            |                          |
| Competitive Prototype Test                  | MIPR                   | TBD : TBD                      | 0.000       | 0.000   |            | 0.000   |            | 5.958        | Jul 2022   | -           |            | 5.958         | -                | -          | -                        |
| <b>Subtotal</b>                             |                        |                                | 0.000       | 0.000   |            | 0.000   |            | 5.958        |            | -           |            | 5.958         | -                | -          | N/A                      |

**Remarks**  
The increase of \$5.958M from FY 2021 to FY 2022 funds the competitive prototype test planning development to support timely and proper execution of testing commencing in 1QFY23.

| <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          |                  |            |                          |
| AoA Support Contract                        | C/FFP                  | HII-MDIS :<br>Huntsville, AL   | 0.000       | 0.188   | Jan 2020   | 0.000   |            | 0.000        |            | -           |            | 0.000         | -                | -          | -                        |
| <b>Subtotal</b>                             |                        |                                | 0.000       | 0.188   |            | 0.000   |            | 0.000        |            | -           |            | 0.000         | -                | -          | 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> | 0.000       | 7.465   | 17.599  | 48.563       | -           | 48.563        | -                | -          | N/A                      |

**Remarks**  
Armored Reconnaissance Vehicle (ARV) increases \$30.964 from FY 2021 to FY 2022 to complete the incrementally funded competitive prototype build with 3 vendors. Initial contract award is scheduled for 4th Qtr FY21 and the FY22 funds are needed on this non-severable effort to continue the prototype build. The prototypes will inform requirements and the acquisition process and ensure the requirement is affordable, achievable and verifiable prior to the Engineering and Manufacturing Development (EMD) phase. Additional cost drivers in FY22 associated with the prototyping phase include completing the purchase of government furnished materials (GFM) and initiating competitive prototype test planning.

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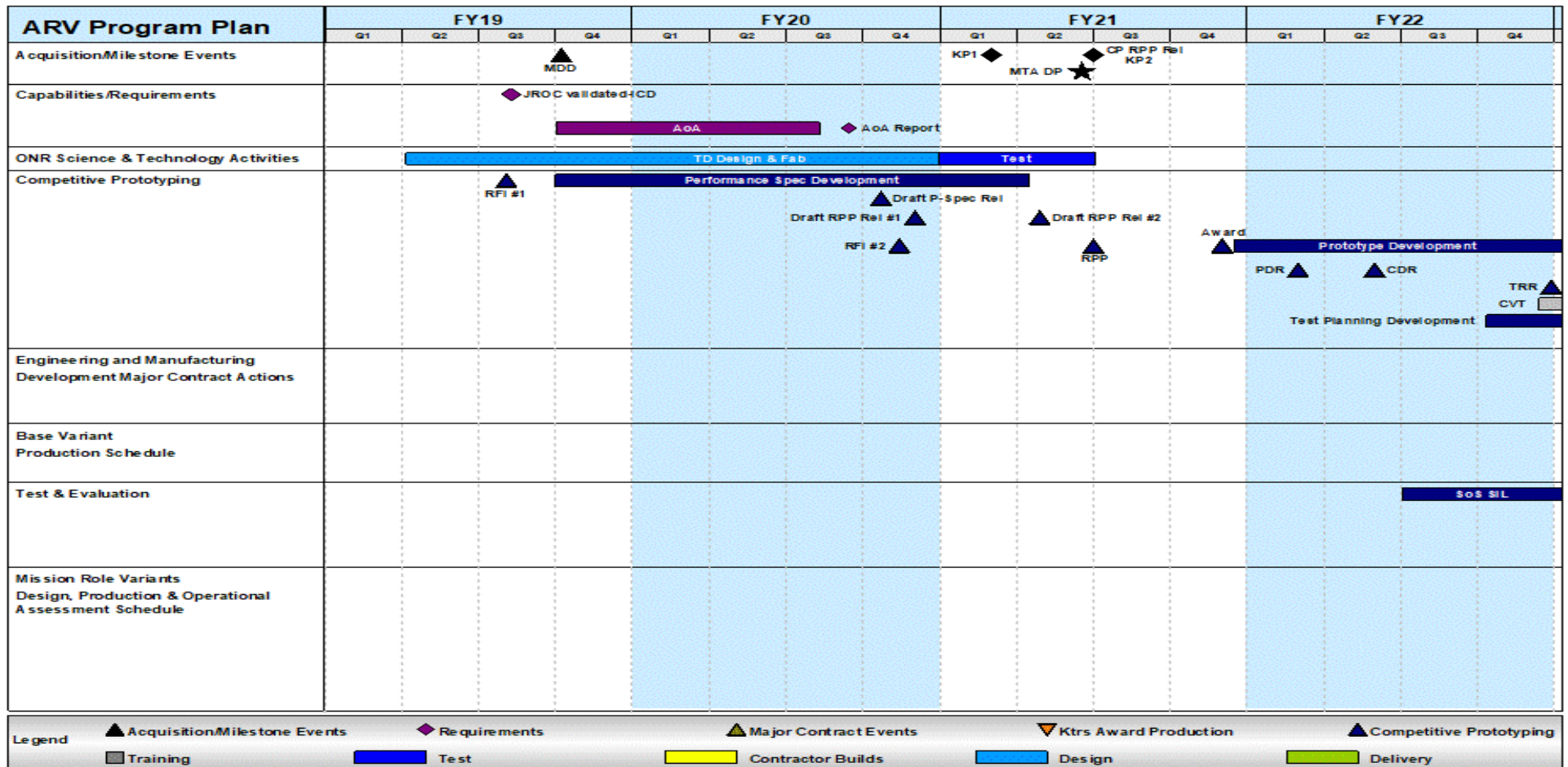
Exhibit R-4, RDT&E Schedule Profile: PB 2022 Navy

Date: May 2021

Appropriation/Budget Activity  
1319 / 4

R-1 Program Element (Number/Name)  
PE 0603635M / Marine Corps Grnd Cmbt/S  
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Project (Number/Name)  
1558 / Armored Reconnaissance Vehicle



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| <b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2022 Navy |  | <b>Date:</b> May 2021  |
| <b>Appropriation/Budget Activity</b><br>1319 / 4              | <b>R-1 Program Element (Number/Name)</b><br>PE 0603635M / <i>Marine Corps Grnd Cmbt/Supt Sys</i> | <b>Project (Number/Name)</b><br>1558 / <i>Armored Reconnaissance Vehicle</i> |

Schedule Details

| Events by Sub Project                  | Start   |      | End     |      |
|--|---------|------|---------|------|
|  | Quarter | Year | Quarter | Year |
| <b><i>Project C1558 ARV</i></b>        |         |      |         |      |
| Competitive Prototype Agreement Awards | 4       | 2021 | 4       | 2021 |
| Competitive Prototype Build            | 4       | 2021 | 4       | 2022 |
| Test Planning & Instrumentation        | 4       | 2022 | 4       | 2022 |

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| <b>Appropriation/Budget Activity</b><br>1319 / 4 | <b>R-1 Program Element (Number/Name)</b><br>PE 0603635M / Marine Corps Grnd Cmbt/S<br>upt Sys | <b>Project (Number/Name)</b><br>2614 / SMAW Follow-On |
|--|---|---|

| 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 |
|----------------------------|-------------|---------|---------|--------------|-------------|---------------|---------|---------|---------|---------|------------------|------------|
| 2614: SMAW Follow-On       | 23.100      | 0.000   | 0.500   | 0.495        | -           | 0.495         | -       | -       | -       | -       | -                | -          |
| Quantity of RDT&E Articles |             | -       | -       | -            | -           | -             | -       | -       | -       | -       |                  |            |

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

The solution to the Follow on to SMAW (FOTS) capability requirement is a Family of Marine-portable Rocket Systems. This Family of Systems is composed of separate lightweight, short-range, and fire-and-forget weapons. The Family of Systems will be deployed to Marine Infantry Squads and Combat Engineer Battalions across the spectrum of conflict, under all environmental conditions, to neutralize or destroy a variety of ground targets including personnel, thin-skinned vehicles, and positions. The Family of Systems include the SMAW MK-153 Mod 0, SMAW MK-153 Mod 2, and the Multi-purpose Anti-Armor Weapon System (MAAWS) M3A1.

The MAAWS M3A1 is a multipurpose, man-portable, line-of-sight, reloadable, recoilless, anti-armor and anti-personnel weapon system. This system will enable the Marine Infantry and Combat Engineer Squads to engage in offensive and defensive operations with anti-armor, anti-personnel, anti-material, and assault capabilities. The MAAWS consists of the M3A1 Carl Gustaf Recoilless Rifle, Fire Control System and red dot back up sight. Munitions include two Sub-caliber Adapter Training Devices and a suite of 84mm ammunition with greater capabilities than the SMAW Mod 2 system. The suite of 84mm ammunition provides obscuration, illumination, anti-personnel, armored penetration, bunker and hardened facility penetration, and soft target destruction capabilities to meet various mission requirements. This program provides a new capability that increases fire power for the Marine Rifle Squad and improves its ability to close with and destroy the enemy in order to remain capable and relevant for the Joint Force against NDS designated threats.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

|   | FY 2020 | FY 2021 | FY 2022 Base | FY 2022 OCO | FY 2022 Total |
|---|---------|---------|--------------|-------------|---------------|
| <b>Title:</b> MAAWS High Explosive Programmable Round   | 0.000   | 0.000   | 0.202        | 0.000       | 0.202         |
| <b>Articles:</b>  | -       | -       | -            | -           | -             |
| <b>FY 2021 Plans:</b><br>N/A  |         |         |              |             |               |
| <b>FY 2022 Base Plans:</b><br>- Initiate Marine Corps-specific qualification testing of High Explosive (HE) programmable round being developed by the Army. |         |         |              |             |               |
| <b>FY 2022 OCO Plans:</b><br>N/A  |         |         |              |             |               |
| <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 Navy |  | <b>Date:</b> May 2021  |
| <b>Appropriation/Budget Activity</b><br>1319 / 4                   | <b>R-1 Program Element (Number/Name)</b><br>PE 0603635M / <i>Marine Corps Grnd Cmbt/Supt Sys</i> | <b>Project (Number/Name)</b><br>2614 / <i>SMAW Follow-On</i> |

| <b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>  | FY 2020 | FY 2021 | FY 2022<br>Base | FY 2022<br>OCO | FY 2022<br>Total |
|--|---------|---------|-----------------|----------------|------------------|
| The increase of \$.205M from FY 2021 to FY 2022 is due to the unique Service testing required for qualification and aligns with the Army's development schedule in FY22.   |         |         |                 |                |                  |
| <b>Title:</b> MAAWS Fire Control System  | 0.000   | 0.500   | 0.293           | 0.000          | 0.293            |
| <b>Articles:</b>   | -       | -       | -               | -              | -                |
| <b>FY 2021 Plans:</b><br>- Procured non-developmental test articles of industry options for alternate Fire Control system that increases range and magnification.<br>- Initiated an evaluation of these test articles for suitability and potential to meet Marine Corps requirements. |         |         |                 |                |                  |
| <b>FY 2022 Base Plans:</b><br>- Complete the evaluation of the test articles and down select for qualification testing.<br>- Complete qualification testing in support of a procurement decision   |         |         |                 |                |                  |
| <b>FY 2022 OCO Plans:</b><br>N/A   |         |         |                 |                |                  |
| <b>FY 2021 to FY 2022 Increase/Decrease Statement:</b><br>The decrease of \$0.207M from FY 2021 to FY 2022 is due to the completion of the test and evaluation efforts on the alternate Fire Control System.   |         |         |                 |                |                  |
| <b>Accomplishments/Planned Programs Subtotals</b>  | 0.000   | 0.500   | 0.495           | 0.000          | 0.495            |

| <b>C. Other Program Funding Summary (\$ in Millions)</b>                      |                |                |                         |                        |                          |                |                |                |                |                             |                   |
|---|----------------|----------------|-------------------------|------------------------|--------------------------|----------------|----------------|----------------|----------------|-----------------------------|-------------------|
| <u>Line Item</u>  | <u>FY 2020</u> | <u>FY 2021</u> | <u>FY 2022<br/>Base</u> | <u>FY 2022<br/>OCO</u> | <u>FY 2022<br/>Total</u> | <u>FY 2023</u> | <u>FY 2024</u> | <u>FY 2025</u> | <u>FY 2026</u> | <u>Cost To<br/>Complete</u> | <u>Total Cost</u> |
| • PMC/3016: <i>Multi-role Anti-Armor Anti-personnel Weapon System (MAAWS)</i> | 21.913         | 21.891         | 20.566                  | -                      | 20.566                   | -              | -              | -              | -              | -                           | -                 |

**Remarks**

**D. Acquisition Strategy**  
MAAWS is Multi-Role Anti-Armor Anti-Personnel Weapon System. The Marine Corps is leveraging two US Army sole source, Firm Fixed Price, Indefinite Delivery and Indefinite Quantity (SS/IDIQ) contracts to procure the M3A1 Rifle from Saab Dynamics and the Fire Control from Aimpoint. The Army's Basic Ordering Agreement for

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Navy |  | <b>Date:</b> May 2021  |
| <b>Appropriation/Budget Activity</b><br>1319 / 4                   | <b>R-1 Program Element (Number/Name)</b><br>PE 0603635M / <i>Marine Corps Grnd Cmbt/Supt Sys</i> | <b>Project (Number/Name)</b><br>2614 / <i>SMAW Follow-On</i> |

the Sub Caliber Adapter, the FCS13RE, is through a US Special Operations Command sole source, Firm Fixed Price Contract, and the ammunition through US Army contracts with Department of Defense Ordnance Technology Consortium (DOTC). USMC is a participant in this Army-led program.

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| Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy |                        |                                    |             |   |            |         |            |                       |            |             |            | Date: May 2021 |                  |            |                          |
|--|------------------------|------------------------------------|-------------|---|------------|---------|------------|-----------------------|------------|-------------|------------|----------------|------------------|------------|--------------------------|
| Appropriation/Budget Activity                          |                        |                                    |             | R-1 Program Element (Number/Name)             |            |         |            | Project (Number/Name) |            |             |            |                |                  |            |                          |
| 1319 / 4   |                        |                                    |             | PE 0603635M / Marine Corps Grnd Cmbt/Supt Sys |            |         |            | 2614 / SMAW Follow-On |            |             |            |                |                  |            |                          |
| <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 |
| Prior Year Cumulative Funding                          | Various                | Various : Various                  | 17.685      | 0.000   |            | 0.000   |            | 0.000                 |            | -           |            | 0.000          | -                | -          | -                        |
| <b>Subtotal</b>  |                        |                                    | 17.685      | 0.000   |            | 0.000   |            | 0.000                 |            | -           |            | 0.000          | -                | -          | 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 |
| MAAWS FCS evaluation                                   | MIPR                   | Montana State University : Montana | 0.000       | 0.000   |            | 0.500   | Apr 2021   | 0.000                 |            | -           |            | 0.000          | -                | -          | -                        |
| MAAWS FCS qualification                                | WR                     | NSWC : Crane, IN                   | 0.000       | 0.000   |            | 0.000   |            | 0.293                 | Feb 2022   | -           |            | 0.293          | -                | -          | -                        |
| MAAWS HE Programmable                                  | WR                     | NSWC : Crane, Indiana              | 0.000       | 0.000   |            | 0.000   |            | 0.202                 | Nov 2021   | -           |            | 0.202          | -                | -          | -                        |
| <b>Subtotal</b>  |                        |                                    | 0.000       | 0.000   |            | 0.500   |            | 0.495                 |            | -           |            | 0.495          | -                | -          | N/A                      |
| <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 |
| Prior Year Cumulative Funding                          | Various                | Various : Various                  | 5.415       | 0.000   |            | 0.000   |            | 0.000                 |            | -           |            | 0.000          | -                | -          | -                        |
| <b>Subtotal</b>  |                        |                                    | 5.415       | 0.000   |            | 0.000   |            | 0.000                 |            | -           |            | 0.000          | -                | -          | N/A                      |
| <b>Project Cost Totals</b>                             |                        |                                    | 23.100      | 0.000   |            | 0.500   |            | 0.495                 |            | -           |            | 0.495          | -                | -          | N/A                      |
| <b>Remarks</b>   |                        |                                    |             |   |            |         |            |                       |            |             |            |                |                  |            |                          |

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

|  |   |   |
|--|---|---|
| <b>Appropriation/Budget Activity</b><br>1319 / 4 | <b>R-1 Program Element (Number/Name)</b><br>PE 0603635M / Marine Corps Grnd Cmbt/Supt Sys | <b>Project (Number/Name)</b><br>2614 / SMAW Follow-On |
|--|---|---|

| Proj 2614                 | FY 2020 |    |    |    | FY 2021 |    |                                 |                                      | FY 2022 |    |    |    |  |
|---------------------------|---------|----|----|----|---------|----|---------------------------------|--------------------------------------|---------|----|----|----|--|
|                           | 1Q      | 2Q | 3Q | 4Q | 1Q      | 2Q | 3Q                              | 4Q                                   | 1Q      | 2Q | 3Q | 4Q |  |
| MAAWS Fire Control System |         |    |    |    |         |    | Procurement of<br>test articles |                                      |         |    |    |    |  |
|                           |         |    |    |    |         |    |                                 | Evaluation and Qualification Testing |         |    |    |    |  |

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| <b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2022 Navy |  | <b>Date:</b> May 2021  |
| <b>Appropriation/Budget Activity</b><br>1319 / 4              | <b>R-1 Program Element (Number/Name)</b><br>PE 0603635M / <i>Marine Corps Grnd Cmbt/Supt Sys</i> | <b>Project (Number/Name)</b><br>2614 / <i>SMAW Follow-On</i> |

Schedule Details

| Events by Sub Project   | Start   |      | End     |      |
|---|---------|------|---------|------|
|   | Quarter | Year | Quarter | Year |
| <b>Proj 2614</b>  |         |      |         |      |
| MAAWS Fire Control System: Procurement of test articles         | 3       | 2021 | 4       | 2021 |
| MAAWS Fire Control System: Evaluation and Qualification Testing | 4       | 2021 | 4       | 2022 |

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|--|--------------------|----------------|----------------|---------------------|--|----------------------|----------------|----------------|--|-----------------------|-------------------------|-------------------|
| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Navy |                    |                |                |                     |  |                      |                |                |  | <b>Date:</b> May 2021 |                         |                   |
| <b>Appropriation/Budget Activity</b><br>1319 / 4                   |                    |                |                |                     | <b>R-1 Program Element (Number/Name)</b><br>PE 0603635M / <i>Marine Corps Grnd Cmbt/Supt Sys</i> |                      |                |                | <b>Project (Number/Name)</b><br>7400 / <i>Combat Capability Development Transition</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> |
| 7400: <i>Combat Capability Development Transition</i>              | 0.000              | 42.592         | 25.358         | 28.007              | -  | 28.007               | -              | -              | -  | -                     | -                       | -                 |
| Quantity of RDT&E Articles   |                    | -              | -              | -                   | -  | -                    | -              | -              | -  | -                     |                         |                   |

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

The Navy/Marine Expeditionary Ship Interdiction System (NMESIS) is a critical CMC Force Design program. As the Marine Corps' first Ground Based Anti-Ship Missile (GBASM) capability, the NMESIS is a Service Force Design Initial Operating Capability (IOC) priority central to the Marine Corps' contribution to the Naval Expeditionary Force's (NEF) anti-surface warfare campaign. Ground based launchers add a new type of threat against a peer adversary, stress different surveillance and offensive systems, are hard to detect and track in a cluttered environment, and add a significant level of persistence and depth to existing anti-ship capabilities. NMESIS will be employed by Medium-range Missile (MMSL) batteries serving as part of Marine Littoral Regiments (MLR) conducting Expeditionary Advanced Base Operations (EABO) while persisting inside the adversary's weapons engagement zone (WEZ). When integrated into sensor and communication networks supporting a naval/maritime killchain, and synchronized with employment of other missile systems, the Marine Corps' MMSL battery will serve as a component of the NEF "stand-in force" in support of the naval sea control effort.

NMESIS consists of two Naval Strike Missiles (NSM) and a launcher/weapon control system integrated on to a ground-based, remotely operated carrier (called ROGUE-Fires). It will provide a ground based anti-access/area denial, anti-ship capability. This program includes design, development, test and production of the NSM launcher, ROGUE-Fires carrier, Weapons Control System (WCS), and Command and Control (C2) connections to enable the transport and firing of NSMs. NMESIS makes extensive use of proven sub-systems, such as the Joint Light Tactical Vehicle (JLTV) chassis, the U.S. Navy's Naval Strike Missile and its WCS.

Long Range Unmanned Surface Vessel (LRUSV) is a critical CMC Force Design program. It is a Service Force Design priority and has demonstrated through extensive wargaming and simulations to have significant operational impact in the Naval Expeditionary Force's Anti-Surface Warfare campaign against peer competitors in the maritime battlespace particularly when operating within planned sensor and communication networks. As such the LRUSV capability, when fully matured, is a critical element of force modernization. LRUSVs, employed individually or in formations of multiple vessels under the cognizance of a LRUSV company or subordinate element will be unmanned vessels, capable of conducting semi-autonomous maneuver in the open ocean for extended periods of time employing tele-operated Organic Precision Fires (OPF) and small Unmanned Surface Vessels (sUSV) in support of sea control and sea denial operations. This prototyping effort will use an incremental approach to deliver capabilities that leverages prototype development to integrate vessels, autonomy packages, Fire Control Application (FCA), and OPF, and will be linked to experimentation and demonstration to reduce technical and integration risk, validate designs, and better inform achievable and affordable requirements, with the ultimate goal of delivering operationally suitable and effective capabilities to the FMF in the mid-2020s.

In FY 2021, LRUSV awarded three prototype vessels and one contact vessel and began development and integration of the autonomy package and Fire Control Application (FCA). In FY 2022, LRUSV will award two additional prototype vessels, two small Unmanned Support Vessels, and two OPF launchers, will conduct testing, and will initiate the Pilot Course Development. In FY 2023, an Early Operational Assessment (EOA) will be conducted with trained users and LRUSV prototypes to

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|--|---|--|-----------------------|-------|--------|
| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Navy   |   |  | <b>Date:</b> May 2021 |       |        |
| <b>Appropriation/Budget Activity</b><br>1319 / 4   | <b>R-1 Program Element (Number/Name)</b><br>PE 0603635M / Marine Corps Grnd Cmbt/S<br>upt Sys | <b>Project (Number/Name)</b><br>7400 / Combat Capability Development<br>Transition |                       |       |        |
| validate employment concepts and further refine requirements. The results from the EOA will inform a Service decision to transition into the Major Capability Acquisition pathway at Milestone B.  |   |  |                       |       |        |
| <b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>  |   |  |                       |       |        |
|  |   |  |                       |       |        |
| <b>Title:</b> Navy/Marine Expeditionary Ship Interdiction System (NMESIS)  |   |  |                       |       |        |
| <b>Articles:</b>   |   |  |                       |       |        |
|  | 41.592  | 0.000  | 0.000                 | 0.000 | 0.000  |
|  | -   | -  | -                     | -     | -      |
| <b>FY 2021 Plans:</b><br>NMESIS/GBASM program was realigned in FY 2021 from BA04/PE 0603635M Project 7400 to BA04/PE 0605514M Project 6637.  |   |  |                       |       |        |
| <b>FY 2022 Base Plans:</b><br>N/A  |   |  |                       |       |        |
| <b>FY 2022 OCO Plans:</b><br>N/A   |   |  |                       |       |        |
| <b>Title:</b> Long Range Unmanned Service Vessel (LRUSV)   |   |  |                       |       |        |
| <b>Articles:</b>   |   |  |                       |       |        |
|  | 1.000   | 25.358   | 28.007                | 0.000 | 28.007 |
|  | -   | 3  | 2                     | -     | 2      |
| <b>FY 2021 Plans:</b><br>- Procured three LRUSV prototype vessels<br>- Procured one prototype contact vessel<br>- Initiated government SW development of Fire Control Application (FCA) capabilities<br>- Conduct vendor SW/HW integration and development of autonomy SW and command and control HW<br>- Initiated vendor integration of OPF capability on LRUSV  |   |  |                       |       |        |
| <b>FY 2022 Base Plans:</b><br>- Procure two LRUSV prototype vessels<br>- Procure two prototype small Unmanned Support Vessels (sUSV)<br>- Procure two prototype OPF Launchers and eight munitions<br>- Continue government SW development of FCA capabilities<br>- Conduct testing of LRUSV including Kill Chain, On-Water Live Fire, and Transportability<br>- Continue vendor integration and testing of OPF capability on LRUSV<br>- Initiate Pilot Course Development and New Equipment Training (NET) |   |  |                       |       |        |
| <b>FY 2022 OCO Plans:</b>  |   |  |                       |       |        |

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Navy |   | <b>Date:</b> May 2021  |
| <b>Appropriation/Budget Activity</b><br>1319 / 4                   | <b>R-1 Program Element (Number/Name)</b><br>PE 0603635M / Marine Corps Grnd Cmbt/S<br>upt Sys | <b>Project (Number/Name)</b><br>7400 / Combat Capability Development<br>Transition |

| <b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>  | <b>FY 2020</b> | <b>FY 2021</b> | <b>FY 2022 Base</b> | <b>FY 2022 OCO</b> | <b>FY 2022 Total</b> |
|--|----------------|----------------|---------------------|--------------------|----------------------|
| N/A  |                |                |                     |                    |                      |
| <b><i>FY 2021 to FY 2022 Increase/Decrease Statement:</i></b><br>The net increase of \$2.649M from FY 2021 to FY 2022 reflects the addition of sUSV and OPF prototypes, the initiation of the Pilot Development Course, and testing, partially offset by the reduction of prototype vessels. |                |                |                     |                    |                      |
| <b>Accomplishments/Planned Programs Subtotals</b>  | 42.592         | 25.358         | 28.007              | 0.000              | 28.007               |

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

N/A

**Remarks**

**D. Acquisition Strategy**

The GBASM concept started as an effort to conduct a live-fire, guided flight demonstration of ground based anti-ship capability in order to inform future requirements. The effort evaluated multiple solutions from FY 2018 through FY 2020. In FY 2020, as part of Force Design 2030, the USMC decided to incorporate ground based anti-ship capability into the force structure. In February 2021, the MROC approved the GBASM requirement and in March the Marine Corps artillery organizational modernization plans were implemented which then formed the basis of the NMESIS Materiel Development Decision on 21 March 2021.

The successful November 2020 live-fire demonstration provided sufficient data to provide confidence the capability is mature enough to proceed as an Major Capability Acquisition (MCA) pathway program. The program will enter at Milestone B in 4th quarter 2021 at which time it is anticipated to become a ACAT III designated program and then proceed to a tailored MCA program with a Milestone C planned for 2Q FY 2023.

At the end of FY 2021, after successful mobility and firing tests, production contracts will be awarded for the baseline configuration approved at the Critical Design Review (CDR). These contracts will cover procurement of systems for Initial Operational Test & Evaluation (IOT&E), Low Rate Initial Production, Full Rate Production, Contractor Logistics Support and spares. After completion of the Operational Assessment, a delta CDR will be conducted to identify changes, if any, required prior to final assembly of the IOT&E configuration and follow on production assets. There will be two Marine Corps production contracts: Remotely-operated carrier (ROGUE-Fires); Launcher and fire control system. The Missile procurement will be accomplished via a Navy contract executed through the Navy Over-the-Horizon (OTH) Weapons Systems program office. The Other Transaction Authority (OTAs) agreements used to develop the initial systems will continue to be used to support program office testing through FY22 and may be used for future capability development. Developmental and operational system testing will be conducted in coordination with the Marine Corps Operational Test and Evaluation Activity. Additionally, missile testing will be coordinated with PM OTH-WS as part of their operational testing.

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| <b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2022 Navy   |  | <b>Date:</b> May 2021  |
| <b>Appropriation/Budget Activity</b><br>1319 / 4   | <b>R-1 Program Element (Number/Name)</b><br>PE 0603635M / <i>Marine Corps Grnd Cmbt/Supt Sys</i> | <b>Project (Number/Name)</b><br>7400 / <i>Combat Capability Development Transition</i> |
| <p>Initial sustainment strategy depends heavily on Contractor Logistics Support (CLS). Commonality with JLTV and OTH-WS components will support accelerated transition to primary organic logistics support, augmented where necessary by CLS. The program office has coordinated with the Marine Corps Training and Education Command in a manpower and training Integrated Product Team to develop a long-term support plan.</p> <p>The LRUSV project is using an incremental approach to deliver capabilities that leverage prototype development to integrate vessels, autonomy packages, Fire Control Application (FCA), and Organic Precision Fires (OPF), and will be linked to experimentation and demonstration. Using a Mid-Tier Acquisition (MTA) approach, the program will evaluate capability requirements, assess technical maturity, and refine the concept of deployment to deliver capabilities to the Marine Corps and Joint Force. This early approach to capability development through the use of prototyping and experimentation will allow the Marine Corps to reduce technical and integration risk, validate designs, and better inform achievable and affordable requirements, with the ultimate goal of delivering operationally suitable and effective capabilities to the Marine Corps and Joint Force in the mid-2020s.</p> <p>With the assistance of Naval Sea Systems Command Program Manager Ships 406 and Naval Surface Warfare Center Carderock, the program office assessed the technical maturity of the unmanned surface vessel industry base paired against the LRUSV concept of operations. Following market research, vendors were invited to respond with a solution for a semi-autonomous vessel prototyping effort. The program office evaluated all proposals and competitively awarded an Other Transaction Agreement (OTA) to a single vendor. Throughout FY 2021 and FY 2022, the LRUSV design, cost, and integration efforts will be controlled through a series of system engineering technical reviews. In FY 2023, an Early Operational Assessment (EOA) will be conducted with trained users and LRUSV prototypes to validate employment concepts and further refine requirements. The results from the EOA will inform a Service decision to transition into the Major Capability Acquisition pathway at Milestone B.</p> |  |  |

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|---|--|--|--|--|--|---|--|--|--|--|--|--|--|--|--|
| <b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2022 Navy</b> |  |  |  |  |  |   |  |  |  |  | <b>Date: May 2021</b>  |  |  |  |  |
| <b>Appropriation/Budget Activity</b><br>1319 / 4                  |  |  |  |  |  | <b>R-1 Program Element (Number/Name)</b><br>PE 0603635M / Marine Corps Grnd Cmbt/S<br>upt Sys |  |  |  |  | <b>Project (Number/Name)</b><br>7400 / Combat Capability Development<br>Transition |  |  |  |  |

| <b>Product Development (\$ 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> | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
|---|-----------------------------------|---|--------------------|----------------|-------------------|----------------|-------------------|---------------------|-------------------|--------------------|-------------------|----------------------|-------------------------|-------------------|---------------------------------|
| <b>Cost Category Item</b>                   | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>          |                         |                   |                                 |
| NMESIS ASM OTA                              | C/CPFF                            | Raytheon Company : Tucson, AZ             | 0.000              | 29.645         | Jan 2020          | 0.000          |                   | 0.000               |                   | -                  |                   | 0.000                | -                       | -                 | -                               |
| NMESIS Rogue Fires Development              | C/CPFF                            | Osh Kosh : Osh Kosh, WI                   | 0.000              | 6.600          | Feb 2020          | 0.000          |                   | 0.000               |                   | -                  |                   | 0.000                | -                       | -                 | -                               |
| LRUSV SW - Gov                              | Various                           | Various : Various                         | 0.000              | 0.914          | Apr 2020          | 2.308          | Oct 2020          | 2.561               | Oct 2021          | -                  |                   | 2.561                | -                       | -                 | -                               |
| LRUSV HW/SW - Vendor                        | C/CPFF                            | Metal Shark : Jeanerette, LA              | 0.000              | 0.000          |                   | 0.000          |                   | 1.525               | Dec 2021          | -                  |                   | 1.525                | -                       | -                 | -                               |
| LRUSV Prototype - Vessel/ Autonomy          | C/FFP                             | Metal Shark : Jeanerette, LA              | 0.000              | 0.000          |                   | 15.033         | Dec 2020          | 9.919               | Dec 2021          | -                  |                   | 9.919                | -                       | -                 | -                               |
| LRUSV Prototype - Contact Vessel            | C/CPFF                            | Metal Shark : Jeanerette, LA              | 0.000              | 0.000          |                   | 1.708          | Dec 2020          | 0.000               |                   | -                  |                   | 0.000                | -                       | -                 | -                               |
| LRUSV Prototype - sUSV                      | C/CPFF                            | Metal Shark : Jeanerette, LA              | 0.000              | 0.000          |                   | 0.000          |                   | 1.230               | Dec 2021          | -                  |                   | 1.230                | -                       | -                 | -                               |
| LRUSV Prototype - OPF Launcher              | C/CPFF                            | Vendor : TBD                              | 0.000              | 0.000          |                   | 0.000          |                   | 1.500               | Jan 2022          | -                  |                   | 1.500                | -                       | -                 | -                               |
| <b>Subtotal</b>                             |                                   |   | 0.000              | 37.159         |                   | 19.049         |                   | 16.735              |                   | -                  |                   | 16.735               | -                       | -                 | N/A                             |

**Remarks**  
LRUSV: Net decrease of \$2.314M from FY 2021 to FY 2022 is a result of one less prototype LRUSV vessel procured, and the addition of two sUSVs, two OPF Launchers, and the addition of government and vendor SW to include FCA, autonomy and HW to include trailers and control stations.

| <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> | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
|----------------------------------|-----------------------------------|---|--------------------|----------------|-------------------|----------------|-------------------|---------------------|-------------------|--------------------|-------------------|----------------------|-------------------------|-------------------|---------------------------------|
| <b>Cost Category Item</b>        | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>          |                         |                   |                                 |
| LRUSV Engineering Support        | Various                           | Various : Various                         | 0.000              | 0.000          |                   | 2.758          | Oct 2020          | 2.697               | Oct 2021          | -                  |                   | 2.697                | -                       | -                 | -                               |
| LRUSV Training Support           | Various                           | Various : Various                         | 0.000              | 0.000          |                   | 0.000          |                   | 1.821               | Jan 2022          | -                  |                   | 1.821                | -                       | -                 | -                               |
| NMESIS Engineering Support - ASM | WR                                | NSWC : China Lake, CA                     | 0.000              | 0.497          | Jan 2020          | 0.000          |                   | 0.000               |                   | -                  |                   | 0.000                | -                       | -                 | -                               |
| NMESIS Safety                    | WR                                | NSWC : Indian Head, MD                    | 0.000              | 0.247          | Jan 2020          | 0.000          |                   | 0.000               |                   | -                  |                   | 0.000                | -                       | -                 | -                               |

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

|  |   |  |
|--|---|--|
| <b>Appropriation/Budget Activity</b><br>1319 / 4 | <b>R-1 Program Element (Number/Name)</b><br>PE 0603635M / Marine Corps Grnd Cmbt/S<br>upt Sys | <b>Project (Number/Name)</b><br>7400 / Combat Capability Development<br>Transition |
|--|---|--|

| <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> | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
|---------------------------------|-----------------------------------|---|--------------------|----------------|-------------------|----------------|-------------------|---------------------|-------------------|--------------------|-------------------|----------------------|-------------------------|-------------------|---------------------------------|
| <b>Cost Category Item</b>       | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>          |                         |                   |                                 |
| NMESIS Engineering - ROGUE      | WR                                | NSWC : Dahlgren, VA                       | 0.000              | 1.503          | Jan 2020          | 0.000          |                   | 0.000               |                   | -                  |                   | 0.000                | -                       | -                 | -                               |
| <b>Subtotal</b>                 |                                   |   | 0.000              | 2.247          |                   | 2.758          |                   | 4.518               |                   | -                  |                   | 4.518                | -                       | -                 | N/A                             |

**Remarks**  
LRUSV: Net increase of \$1.760M from FY 2021 to FY 2022 is a result of decreased engineering support and the initiation of the Pilot Development Course and NET.

| <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> | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
|---|-----------------------------------|---|--------------------|----------------|-------------------|----------------|-------------------|---------------------|-------------------|--------------------|-------------------|----------------------|-------------------------|-------------------|---------------------------------|
| <b>Cost Category Item</b>                   | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>          |                         |                   |                                 |
| NMESIS ASM Missile Testing                  | WR                                | NAS : Point Mugu, CA                      | 0.000              | 1.983          | Apr 2020          | 0.000          |                   | 0.000               |                   | -                  |                   | 0.000                | -                       | -                 | -                               |
| NMESIS Vehicle/Booster Testing              | WR                                | NSWC : China Lake, CA                     | 0.000              | 0.967          | Oct 2019          | 0.000          |                   | 0.000               |                   | -                  |                   | 0.000                | -                       | -                 | -                               |
| LRUSV Testing                               | Various                           | Various : Various                         | 0.000              | 0.000          |                   | 1.395          | Dec 2020          | 3.871               | Dec 2021          | -                  |                   | 3.871                | -                       | -                 | -                               |
| LRUSV Munitions Test Assets                 | C/CPFF                            | TBD : TBD                                 | 0.000              | 0.000          |                   | 0.000          |                   | 0.880               | Dec 2021          | -                  |                   | 0.880                | -                       | -                 | -                               |
| <b>Subtotal</b>                             |                                   |   | 0.000              | 2.950          |                   | 1.395          |                   | 4.751               |                   | -                  |                   | 4.751                | -                       | -                 | N/A                             |

**Remarks**  
LRUSV: Net increase of \$3.356M from FY21 to FY22 reflects the initiation of testing to include Transportability, On-Water Live Fire, and Kill Chain, and associated test assets.

| <b>Management Services (\$ 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> | <b>Cost To Complete</b> | <b>Total Cost</b> | <b>Target Value of Contract</b> |
|---|-----------------------------------|---|--------------------|----------------|-------------------|----------------|-------------------|---------------------|-------------------|--------------------|-------------------|----------------------|-------------------------|-------------------|---------------------------------|
| <b>Cost Category Item</b>                   | <b>Contract Method &amp; Type</b> | <b>Performing Activity &amp; Location</b> | <b>Prior Years</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>    | <b>Award Date</b> | <b>Cost</b>         | <b>Award Date</b> | <b>Cost</b>        | <b>Award Date</b> | <b>Cost</b>          |                         |                   |                                 |
| NMESIS Travel                               | Various                           | Various : Various                         | 0.000              | 0.150          | Feb 2020          | 0.000          |                   | 0.000               |                   | -                  |                   | 0.000                | -                       | -                 | -                               |
| LRUSV Travel                                | Various                           | Various : Various                         | 0.000              | 0.086          | Oct 2019          | 0.186          | Oct 2020          | 0.198               | Oct 2021          | -                  |                   | 0.198                | -                       | -                 | -                               |
| LRUSV Program/Cost Management               | Various                           | Various : Various                         | 0.000              | 0.000          |                   | 1.970          | Oct 2020          | 1.805               | Oct 2021          | -                  |                   | 1.805                | -                       | -                 | -                               |



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| <b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2022 Navy</b> |   | <b>Date: May 2021</b>   |
| <b>Appropriation/Budget Activity</b><br>1319 / 4             | <b>R-1 Program Element (Number/Name)</b><br>PE 0603635M / Marine Corps Grnd Cmbt/Supt Sys | <b>Project (Number/Name)</b><br>7400 / Combat Capability Development Transition |

| Proj 7400 | FY 2020 |    |    |    | FY 2021                              |    |    |    | FY 2022 |                                      |    |                      |  |
|-----------|---------|----|----|----|--------------------------------------|----|----|----|---------|--------------------------------------|----|----------------------|--|
|           | 1Q      | 2Q | 3Q | 4Q | 1Q                                   | 2Q | 3Q | 4Q | 1Q      | 2Q                                   | 3Q | 4Q                   |  |
|           |         |    |    |    | LRUSV<br>Prototype<br>Award - 3<br>■ |    |    |    |         | LRUSV<br>Prototype<br>Award - 2<br>■ |    |                      |  |
|           |         |    |    |    |                                      |    |    |    |         | Kill-Chain<br>Testing                |    |                      |  |
|           |         |    |    |    |                                      |    |    |    |         | Transportability Testing             |    |                      |  |
|           |         |    |    |    |                                      |    |    |    |         |                                      |    | Live Fire<br>Testing |  |

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| <b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2022 Navy |  | <b>Date:</b> May 2021  |
| <b>Appropriation/Budget Activity</b><br>1319 / 4              | <b>R-1 Program Element (Number/Name)</b><br>PE 0603635M / <i>Marine Corps Grnd Cmbt/Supt Sys</i> | <b>Project (Number/Name)</b><br>7400 / <i>Combat Capability Development Transition</i> |

Schedule Details

| Events by Sub Project         | Start   |      | End     |      |
|-------------------------------|---------|------|---------|------|
|                               | Quarter | Year | Quarter | Year |
| <b>Proj 7400</b>              |         |      |         |      |
| LRUSV Prototype Award (Qty 3) | 1       | 2021 | 1       | 2021 |
| LRUSV Prototype (Qty 2)       | 1       | 2022 | 1       | 2022 |
| Kill-Chain Test               | 1       | 2022 | 1       | 2022 |
| Transportability Testing      | 1       | 2022 | 4       | 2022 |
| On-Water Live Fire Test       | 3       | 2022 | 3       | 2022 |